

**TITLE:**

**THE ADAPTATION OF THE 'CLINICAL OUTCOMES IN ROUTINE  
EVALUATION – OUTCOME MEASURE' (CORE-OM)  
FROM ENGLISH INTO A VALID XHOSA MEASURE OF DISTRESS**

**NAME:**

**MEGAN M. CAMPBELL  
G98C1197**

**RHODES UNIVERSITY  
GRAHAMSTOWN, SOUTH AFRICA**

**SUPERVISOR:**

**PROF. CHARLES YOUNG**

**RHODES UNIVERSITY  
GRAHAMSTOWN, SOUTH AFRICA**

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## **ABSTRACT**

In South Africa access to mental healthcare resources is restricted for a number of reasons including language barriers that prevent suitable communication between mental healthcare professionals and African language speaking South Africans. The translation of psychometric tools into African languages has been identified as one method in improving access to psychological services for African language speakers. The Clinical Outcomes in Routine Evaluation – Outcome Measure (CORE-OM) has demonstrated its clinical utility within the United Kingdom (UK) National Healthcare Service (NHS) as a standardised psychotherapy outcome measure that evaluates the degree of psychological distress individuals present with at the start of psychotherapy treatment, and the degree of change that has been effected at the termination of therapy. A measure like the CORE-OM holds valuable clinical utility for the South African context. This thesis argues that the availability of a valid Xhosa version of the CORE-OM would allow for improved access to psychotherapy resources for Xhosa speaking individuals, and allow for the evaluation of the effectiveness of psychotherapy interventions conducted in Xhosa. The CORE-OM developers have provided a translation design and set of guidelines to standardise the translation of the CORE-OM into different languages. However this thesis argues that these guidelines are incomplete. Instead International Test Commission (ITC) guidelines are recommended as a culturally sensitive method to supplement current CORE-OM translation guidelines, in order to generate a valid Xhosa measure of distress. A mixed methods approach is applied which first investigates the construct equivalence and bias of the CORE-OM English version within a South African student population sample, both qualitatively and quantitatively, in order to establish the degree of adaptation required to generate a valid Xhosa version of distress. Next the CORE-OM English version is translated into Xhosa using the five-stage translation design prescribed by the CORE System Trust, supplemented by ITC guidelines. All changes made to the CORE-OM during translation into Xhosa are documented. The CORE-OM Xhosa version is then investigated for reliability and validity. This investigation reveals low internal reliability within the subjective wellbeing domain indicating that these items are less meaningful as depictions of distress within the Xhosa language. A reduced version of the CORE-OM demonstrates strong psychometric properties as a valid Xhosa measure of distress.

## DECLARATION

All work connected to this thesis was carried out exclusively by me, Megan Campbell, under the supervision of Prof. Charles Young. The whole thesis unless otherwise indicated is my own work.

This thesis has not been submitted for a degree at any other university.

A handwritten signature in black ink, appearing to read 'Megan M. Campbell', written in a cursive style.

Signed:

Megan M. Campbell

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#### Working drafts

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## **ABBREVIATIONS AND ACRONYMS:**

AUDIT:	Alcohol Use Disorders Identification Test
BDI:	Beck Depression Inventory
BAI:	Beck Anxiety Inventory
BHS:	Beck Hopelessness Scale
CORE-OM:	Clinical Outcomes in Routine Evaluation – Outcome Measure
CES-D:	Centre for Epidemiology Depression Scale
DEFF:	Design Effect
HPCSA:	Health Professions Council of South Africa
HTQ:	Harvard Trauma Questionnaire
ITC:	International Test Commission
NHS:	National Health Service
UK:	United Kingdom
WHO:	World Health Organisation

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## CHAPTER 1: INTRODUCTION

While investigating language use within state healthcare facilities in the Western Cape, Crawford (1999) was presented with the following question from a multilingual nurse, "Why can't doctors speak their patients' language?". The nurse's question highlights the problematic contradiction of the existence of monolingual health services within South Africa's multilingual society. Despite the introduction of a democratic government, constitution and bill of rights, language access within South Africa remains highly discriminatory. Currently, access to mental healthcare services within state healthcare and tertiary education contexts is problematic for African language speaking South Africans.

Chapter 2 of this thesis presents the reader with an overview of the current South African context, with particular focus on the provision of mental healthcare services. Barriers to accessing these services within both state and tertiary education contexts are discussed and psychometric tool translation into African languages, like Xhosa, is suggested as one initiative in improving access to mental healthcare services for African language speaking South Africans. The Clinical Outcomes in Routine Evaluation - Outcome Measure (CORE-OM) is presented as a valuable tool for translation in order to meet this goal.

The CORE-OM has been used extensively across the United Kingdom (UK) National Healthcare Service (NHS) to assist clinicians in evaluating the degree of distress individuals present with before commencing treatment, and the degree of change effected as a result of psychotherapeutic interventions. Chapter 3 introduces the reader to the CORE-OM's development within the context of evidence-based practice and practice-based evidence models of psychotherapy outcome research. Scoring methods and psychometric properties of the measure are outlined and the CORE-OM's clinical utility within the UK NHS is presented. A discussion of potential applications of the CORE-OM within South African mental healthcare contexts is presented, particularly as a clinical assessment tool that would improve access to psychological services for African language speaking university students, and as an outcome measure used to evaluate the effectiveness of psychotherapy interventions conducted in African languages.

In order for South Africans to benefit from the clinical utility of the CORE-OM the tool requires adaptation for use within the South African context. Current CORE-OM translation guidelines prescribed by the CORE-OM developers provide a comprehensive translation design. However the process of psychometric tool translation draws from a universalist conceptualisation of psychological constructs that does not necessarily account adequately for the influence of culture. As a result International Test Commission (ITC) guidelines for tool adaptation are recommended as a culturally sensitive method in preparing psychometric tools for cross-cultural use. In Chapter 4 the process of psychometric tool adaptation using ITC guidelines is discussed as a supplement to current CORE-OM translation guidelines.

Drawing from the context and literature review chapters outlined above this thesis aims to adapt the CORE-OM into a valid Xhosa measure of distress, using current CORE-OM translation guidelines supplemented by ITC guidelines for psychometric tool adaptation, in order to assist in improving access of Xhosa speaking students to psychological services in Xhosa at university student counselling centres. The methodology presented in Chapter 5 draws from the prescribed CORE System Trust translating and normalising guidelines supplemented with ITC guidelines in developing a mixed methods research design that employs qualitative and quantitative methods. First the construct bias and equivalence of the CORE-OM English version within a South African student population sample is investigated in order to establish the degree of adaptation necessary to produce a valid Xhosa version of distress. Next qualitative methods are used within the CORE translation design to develop a culturally sensitive Xhosa version of the CORE-OM. All changes made to the CORE-OM during translation into Xhosa are documented. Finally quantitative methods are used to investigate the reliability and validity of the CORE-OM Xhosa version within a South African first language Xhosa speaking student population. Then the equivalence of a reduced scale of the CORE-OM is investigated across its English and Xhosa language versions.

The results of the investigation of construct bias and equivalence of the CORE-OM English version within a South African student population are presented in Chapter 6. These results indicate that the CORE-OM English version was well received by bilingual translation team members as a meaningful measure of distress for first

language Xhosa speaking student population samples. During quantitative piloting the measure demonstrated acceptable internal consistency and discriminant validity within the South African student population sample, as well as some overlap in the psychometric structure of the measure across a UK and South African student sample. However the subjective wellbeing domain proved potentially problematic within the first language Xhosa speaking student sample. Comparison of item-total correlations across first language English and Xhosa speaking student samples also identified a number of CORE-OM items that may be problematic, in favour of first language English speakers. This evidence in conjunction with high reliability indicators and factor loadings within the CORE-OM indicated that the measure should be reduced to a shorter version. The psychometric structure, internal consistency and measurement and structural model of this reduced version were investigated using a small random sample from the Rhodes University sample. This model was then cross-validated on the remaining Rhodes University sample and group equivalence was established at measurement level across first and second language English use within this sample.

Chapter 7 presents the results obtained in applying the CORE System Trust's qualitative translation design supplemented by ITC guidelines to translate the entire CORE-OM English version into Xhosa. The reader is presented with the initial results obtained during the forward and back-translation processes, as well as the initial Xhosa translation generated using the committee approach. Changes made to this version during each qualitative review are documented and reasons for these changes explained. The finalised CORE-OM Xhosa version accepted by the UK CORE-OM developers is presented at the end of the chapter along with a summary of all changes made to the Xhosa version during the translation process.

The results of the investigation of the reliability and validity of the CORE-OM Xhosa version within a first language Xhosa speaking student population sample are presented in Chapter 8. These results indicate that the CORE-OM Xhosa version demonstrated acceptable internal consistency across the problems or symptoms and life functioning domains, as well as discriminant and convergent validity of the measure within the South African first language Xhosa speaking student population sample. In addition some overlap in psychometric structure was evident across the

CORE-OM English and Xhosa versions within the South African student population samples. However some subjective wellbeing domain and risk domain items appeared problematic within the first language Xhosa speaking student sample. The reduced South African CORE-10 Xhosa and English versions, devoid of the subjective wellbeing and risk domains, were then compared for equivalence. Measurement equivalence was established at the metric level and acceptable psychometric properties of the South African CORE-10 English and Xhosa versions were demonstrated. Administrative and scoring guidelines were then established in order to standardise the administration of the CORE-OM and the South African CORE-10 Xhosa versions, and to improve the validity of score interpretations.

The findings from the three results chapters are critically discussed within Chapter 9, with a focus on three primary points. Firstly poor internal reliability of the subjective wellbeing domain as demonstrated by first language Xhosa speaking students responding to the CORE-OM English version calls into question the relevance of this domain as an indicator of distress within this sample. Items within the subjective wellbeing domain are considered in terms of meaningfulness within the context of the Xhosa culture and Ubuntu philosophy. Secondly, the considerable changes made to the CORE-OM Xhosa translation at each stage of the translation process highlight the lack of congruence between the way in which distress is conceptualised and described across the English and Xhosa languages. This finding has implications for how Xhosa speaking psychologists and clients attempt to conceptualise a western psychiatric model of distress within the Xhosa language. Finally the low internal reliability demonstrated by the subjective wellbeing and risk domains within the first language Xhosa speaking student samples responding to the CORE-OM Xhosa version highlights the considerable impact that the Xhosa language has on the conceptualisation and description of distress, which is again considered in light of the Xhosa culture and Ubuntu philosophy.

This thesis concludes in Chapter 10 with a summary of the literature review, methodology, results and discussion. Limitations to the study are considered, with particular focus on the category fallacy. Additional areas for future research are suggested that include a more culturally sensitive investigation of additional domains of distress pertinent to the Xhosa language and culture.

## CHAPTER 2: THE CURRENT SOUTH AFRICAN CONTEXT

Almost 20 years after the abolishment of Apartheid and the introduction of democracy, South Africa remains a country in transformation. Swartz (1998) defines Apartheid as “a system of political and economic domination” that was perpetuated over a period of forty years (p.179). During this time racial discrimination policies categorised South Africans into four racial groups namely white, black, coloured and Indian and promoted the interests of white South Africans at the expense of the other racial categories (Stevens, Duncan & Bowman, 2006).

Kallaway (2002) explains how Apartheid policies promoted the political, social and economic interests of the white minority at the expense of the human rights of South Africa’s black majority using state coercion and control. Swartz (1998) highlights how state repression, political unrest and conflict led to widespread social and economic problems during this period as black communities (including all South African racial groups except white South Africans) were displaced, families were broken up, and food production, transportation services and economic infrastructures were disrupted. Black community members were subject to, and bore witness to violent attacks and political detention, and the general standard of living for black South Africans declined considerably as poverty, crime and malnutrition increased.

Apartheid policies have created generations of survivors of Apartheid atrocities and legacies that current generations have to manage and navigate. Foster and Swartz (1997) highlight the vast inequalities that existed between South African races with regards to housing, education, employment and health shortly after the introduction of democracy in 1994. However more recent research conducted by the South African Institute of Race Relations (2011) indicates that South Africa remains one of the most unequal societies globally, with an estimated annual per capita income for black South Africans in 2010 of R21 075, in comparison to R135 707 for white South Africans. Currently 47% of South Africa’s black majority live in poverty, with only 28% having access to piped water in their housing units, 50% having access to flushable toilets, and 65% having use of electricity when cooking. Approximately 29% of black South Africans remain unemployed, and only 30% of those 20 years or older have completed Grade 12, while only 4% of all black South Africans aged between 18-29

are completing tertiary studies. In comparison only 1% of all white South Africans are currently living under conditions of poverty, while 95% of white South African households have access to water, electricity and plumbing. Approximately 94% of white South Africans are currently employed and 20% of those aged between 18 and 29 are completing tertiary studies (South African Institute of Race Relations, 2011). These statistics reinforce the devastating and prolonged effects of Apartheid policies and the vast racial inequalities that remain within South Africa to date.

## **2.1 Consequences of Apartheid language discrimination policies**

Stevens et al. (2006) explain that during Apartheid racial and language discrimination policies resulted in severely restricted access for black South Africans to education and employment opportunities, while English and Afrikaans speaking white South Africans were promoted through improved education and employment opportunities. Swartz and Drennan (2000) add that because English and Afrikaans became recognized as the only official South African languages very little provision was made for other languages within social services. Consequently Apartheid's language discrimination policies culminated in "a marginalizing of all languages except for English and Afrikaans" (Swartz & Drennan, 2000, p. 186). This marginalisation remains clearly illustrated within the current South African mental healthcare and tertiary education services.

### **a) The South African mental healthcare system**

Robertson (2001) explains that South African mental healthcare services are provided across three levels namely primary, secondary and tertiary healthcare, with psychiatric services integrated into general healthcare. Primary healthcare is accessed at community and district levels within community clinics and general hospitals where primary mental healthcare interventions involve education and prevention, early detection and treatment of mental illness, maintenance and relapse prevention as well as rehabilitation of chronic psychiatric illness (Robertson, 2001). Secondary mental healthcare in the form of general specialised care is provided at a regional level in psychiatric hospitals or psychiatric wards within general hospitals, psychology clinics and university student counselling centres as well as by

psychologists and psychiatrists in private practice settings (Robertson, 2001). Tertiary mental healthcare involves highly specific diagnosis and treatment in specialised areas of psychiatric illness within in-patient contexts in both the public and private sector (Robertson, 2001).

Foster and Swartz (1997) note that during Apartheid state funded mental healthcare services were segregated by race, providing considerably better mental healthcare services for white South Africans while often negating the needs of black South Africans. Swartz (1998) highlights that state funded mental healthcare's focus on improving service to Afrikaans and English speaking white South Africans forced African language speakers into using these two official South African languages in order to access mental healthcare resources. In addition, Apartheid education and employment barriers promoted the professional development of white, English and Afrikaans speaking mental healthcare professionals, who were then placed in positions of seniority and power within state mental healthcare facilities while African language speaking black South Africans were poorly represented at these levels, if at all (Swartz, 1998). Mental healthcare professionals were not encouraged to learn to speak African languages which further reduced access to these services for African language speakers.

As a result, Drennan (1999) highlights that black, African language speakers who were unable to communicate proficiently in English or Afrikaans were placed at considerable disadvantage with regards to access to state services and appropriate therapeutic services. Crawford (1999) adds that significant power imbalances already exist between a healthcare professional in possession of knowledge and authority, and a patient who is seeking healing. In addition she refers to the vast cultural differences between indigenous African healing practices and the westernised medical model presented in state mental healthcare facilities which is accompanied by its own unique, biomedical discourse relating to measurable signs and symptoms of distress.

Kleinman (1977) differentiates between the 'disease' or disorder as defined by these measurable signs and symptoms, indicating "malfunctioning or mal-adaptation of biological or psychological processes", and the 'illness' or distress as defined by the

individual's unique experience of that disorder, influenced by that individual's "personal, interpersonal and cultural reaction to disease" (p.9). He explains that an individual's conceptualisation of 'illness' influences symptomatology. Extrapolating further Kleinman, Eisenberg and Good (1978) describe how each individual conceptualises their experience of illness through a unique explanatory model influenced by their cultural context. This explanatory model includes how the individual conceptualises and described their illness, as well as the personal and social meanings the individual attaches to this understanding of illness (Kleinman et al., 1978). In addition this explanatory model includes the perceived consequences the individual expects as a result of the illness, the type of treatment or intervention the individual considers the most meaningful and appropriate based on their conceptualisation of the illness, and related treatment goals (Kleinman et al., 1978).

Thus the individual explanatory model affects the individual's expectations about the illness and related treatment, understandings and perceptions of symptoms, the labels attached to these symptoms, and the responses that result from this conceptualisation. Kleinman (1980) explains that as a result an individual's explanatory model shapes a) how that distress is expressed behaviourally, b) whether or not the individual seeks out assistance to address the distress, c) from whom or where that assistance is sought, and finally, d) how the individual reacts to the proposed treatment.

When an individual chooses to access professional mental healthcare resources language is used to communicate that individual's experience of distress. But Crawford (1999) emphasises that individuals who lack the language proficiency to a) express this distress in an understandable way, and b) understand the healthcare professional's response to that distress, are unable to negotiate a common explanatory model and therefore access mental healthcare resources. Swartz (1995) agrees, emphasising that people make use of the healing systems that are available to them. Considering that language is "the primary medium of assessment [and treatment] in mental healthcare" (Swartz, Drennan & Crawford, 1997, p. 167), when no common language is available between the healthcare professional and the patient, significant barriers to accessing mental healthcare services arise.

These language and communication barriers and the resultant negative experiences of individuals who attempt to make use of these services have further implications for the attitudes and perceptions African language speaking individuals develop towards mental healthcare services. Essentially access to current mental healthcare services for African language speaking South Africans is so restricted it prevents the adequate utilisation of these services by this population demographic.

While racial and ethnic integration within state mental healthcare facilities in South Africa was initiated during the late 1980's and throughout the 1990's to promote equitable mental health care for all, Drennan (1999) notes that equitable mental health care relies on equal communication and access which is essential to service provision. South Africa has always been a multicultural and multilingual country, however Kilian, Swartz and Joska (2010) highlight that only since the inception of democracy has it acknowledged its "constitutional commitment to non-discrimination on the basis of language" through adequate language policies (p.309). Subsequently African languages have officially and constitutionally been recognised, although the practical implementations of these policies have not yet been fully realised.

Freeman and Pillay (1997) explain that significant revisions have been made at policy level within the South African mental healthcare system following the introduction of a non-racial democracy in 1994, including the integration of mental healthcare into primary healthcare services and the utilisation of community-based mental healthcare initiatives. More recently the promulgation of the Policy on Language Services by the South African Department of Health (2011) promotes "equitable access to government services and information" for South African citizens in the language they are most fluent in, in order to provide increased access and improved quality of healthcare and informed decision making (p.1). This policy is in line with the United Nations Educational, Scientific and Cultural Organisation's (2012) emphasis on the importance of language in achieving the Millennium Development Goals, particularly with regard to the importance of people receiving healthcare-related information in a language that is familiar and culturally relevant to them.

However at present, of South Africa's total Gross Domestic Product (GDP), 8.3% is spent on healthcare, half of which is allocated to the private sector serving 8.2 million South Africans (Department of Health, 2011). These South Africans are predominantly those who benefitted from Apartheid's racial and language discrimination policies. While the remaining 4.2% of the GDP is allocated to the public healthcare sector serving 42 million South Africans, the majority of which have been disadvantaged by Apartheid policies. The unequal allocation of these resources further reduces access to mental healthcare resources for the majority of South Africans. Any initiatives aimed at addressing these barriers to accessing equitable healthcare services are a welcome necessity in a developing South Africa.

With the proposed introduction of a national health insurance policy in 2013 (Department of Health, 2011), the South African government hopes to begin building towards the equitable access of government subsidized primary healthcare services for all South African citizens (Freeman & Pillay, 1997). However, this is a long term plan with implementation taking place gradually over the next twenty years (Department of Health, 2011), resulting in slow improvement, and the legacy of Apartheid's race and language discrimination policies continues to maintain significant barriers regarding equal access to mental healthcare.

#### **b) The South African tertiary education system**

The legacy of Apartheid's race and language discrimination policies has also had a profound impact on the South African education system. Kallaway (2002) explains that while Apartheid education policies promoted the primary and secondary education of white, English and Afrikaans speaking South African children, the policy severely restricted funding and educational resources to black South African children who in addition to receiving an inferior quality of education, were required to receive secondary schooling in English or Afrikaans. As a result white students entered into tertiary education with a superior educational foundation in comparison to their black counterparts.

At a tertiary education level, Nicholas (1994) explains that South African Universities were also segregated through racial and language discrimination policies and

subsidised in accordance with these policies. Black universities (like the University of Fort Hare) were poorly funded and legally required to predominantly admit black students, while white universities were far more generously funded by the state and admitted predominantly white students. Nicholas (1994) adds that universities were also separated according to language of instruction, producing white English medium universities (like Rhodes University), white Afrikaans medium universities (like the University of Stellenbosch) and a single white, bilingual English and Afrikaans medium University (the University of Port Elizabeth, later renamed the Nelson Mandela Metropolitan University). This tertiary education policy perpetuated the advantaged education of white South Africans and the disadvantaged education of black South Africans, leaving disadvantaged black South African students vulnerable to increased psychological distress within tertiary education contexts.

Young (2009) explains that in the years following the end of Apartheid and its racially segregated educational policies, historically white South African universities have become more representative of the general population, however black students continue to contend with the consequences of Apartheid policies which have left the majority of black South Africans “with the burden of unemployment, poverty and disease” (p.473). Young (2009) emphasises the added challenges faced by these black students entering into historically white, English and Afrikaans medium universities, commonly as first generation tertiary education seekers, and second language English or Afrikaans speakers. These students are required to deal with the significant expectations of adjusting to university life in addition to managing the effects of Apartheid and the pressure of obtaining a university degree in order to achieve social mobility for themselves and their families.

Research conducted by Sommer and Dumont (2011) indicates that black students from disadvantaged backgrounds are less likely to graduate from university and more likely to leave before completing their degrees in comparison to their white, advantaged counterparts. Sommer and Dumont (2011) suggest that this is due in part to the increased financial stress, education and language challenges these disadvantaged black students experience at university.

In addition research conducted by Mabokela (2000) reveals that despite efforts to transform the staff profiles, black academic staff remain the minority on historically white university campuses, leaving black students with few black academics in senior positions as role-models to which they can aspire. Mabokela (2000) also notes the difficulty experienced by historically white universities in retaining black academic staff. Mabokela (2000) reports that while universities perceive improved monetary compensation in the private and government sectors as reasons for the high turn-over of black academic staff, black academics identify the "hostile academic culture and environment" as the reason for their move (p.106).

Pillay and Collings (2004) and Gwele (2002) agree, adding that both overt and subtle racism remain fairly common-place within these university environments. Furthermore Boughey (2003; 2008) and Gwele (2002) highlight that historically white universities continue to be characterised by a white, male Eurocentric culture that black academics and students experience as culturally foreign and as a result potentially alienating and isolating. Gwele (2002) emphasises the perceived pressure experienced by black staff and students to assimilate into this dominant culture in order to achieve acceptance and recognition.

Within this context it is not surprising that Young (2009) reports that black students at a historically white, English speaking university, student counselling centre experience significantly increased levels of psychological distress on presentation for psychological support in comparison to white students. Added to this Young (2009) notes that within this centre the majority of the counselling staff are white, English and Afrikaans speaking South Africans much like the staff representation at state hospitals, and that a possible reason why black students tend to present for treatment with increased levels of distress may be due to these students feeling uncomfortable within this counselling centre environment and only seeking assistance when the distress becomes unmanageable. Nicholas (1994) agrees identifying the lack of appropriate diversity amongst counselling centre staff as an important limitation to accessing university student counselling centre services for black students.

Young (2009) adds that black students have also reported ambivalence about seeking psychological support because psychotherapy as an intervention is perceived as a western, white activity, echoing Crawford's (1999) explanation that psychotherapy, drawing from a western biomedical model is culturally different to indigenous African healing practices. In addition Young's (2009) comments reflect Kleinman's (1980) observation that individuals hold their own personal explanatory models for understanding their distress, and when these explanatory models are in contradiction with a professional mental healthcare explanatory model, that particular healing system becomes inaccessible to the individual.

In support of this, Van der Riet and Knoetze (2005) report that a sample of South African school learners aged between 14-22, from peri-urban and rural school contexts (majority black pupils) identified family members, friends and trusted teachers as preferred sources of support in comparison to mental healthcare professionals. Van der Riet and Knoetze (2005) highlight that in conjunction with academic demands these scholars, like many young black South Africans from disadvantaged backgrounds, are also dealing with the consequences of Apartheid in the form of parent unemployment, poverty and illness and report seeing little practical value in simply talking about these problems with a psychologist. Instead these school learners prefer seeking out trustworthy confidants who they identify with and believe will be able to relate to their problems.

Added to this Van der Riet and Knoetze (2005) note that urban schools are typically better resourced than peri-urban and rural schools, and school learners are more likely to be exposed to school counsellors or psychologists as part of the urban school teaching staff. This exposure familiarises these school learners with professional help-seeking behaviours. In comparison school learners from peri-urban and rural school contexts are less familiar with and experience restricted access to mental healthcare professionals.

Commensurate with both Young (2009) and Van der Riet and Knoetze's (2005) observations, Atik and Yalcin (2011) identify personal factors such as level of distress and opinions about mental illness and treatment; social factors such as acculturation and cultural congruity with mental healthcare services and the

professionals who provide these services; and demographic factors such as race, language use and socio-economic status as factors impacting on professional psychological help-seeking behaviour.

Current initiatives are aimed at broadening access to professional mental healthcare and psychiatric services for African language speakers by increasing the selection and training of African language speaking students within South African university mental healthcare professional training programmes (Swartz & Drennan, 2000), resulting in an increase in black, African language speaking mental healthcare professionals. In addition English and Afrikaans speaking mental healthcare professionals are encouraged to improve their African language proficiencies (Swartz & Drennan, 2000). Furthermore Swartz (1995) highlights the need for collaboration and improving the conceptual link between psychiatry, psychology and indigenous, traditional healing practices. The development of psychological resource material like psychometric tools for use specifically within the South African context, and the translation of well researched and established psychometric tools into African languages have been suggested as further initiatives (Health Professions Council of South Africa, 2006).

## **2.2 Addressing some of the limitations to accessing healthcare resources through psychometric tool translation**

In accordance with recommendations made by the Ministry of Education (2002), higher educational institutions are required to actively develop dominant African languages within their regions. This initiative would include the improved access to mental healthcare services and psychological resource material within university student counselling centres, in the dominant African languages of that region. This thesis draws from research based at Rhodes University situated in the Eastern Cape. The 2001 population survey conducted by Statistics South Africa (2003) indicates that the Eastern Cape is the third largest South African province with an estimated population of 6.5 million people. Xhosa is the dominant language spoken by approximately 84% of the population (Statistics South Africa, 2003). Nationally Xhosa is the second most common home language, spoken by approximately 17% of South Africans (Statistics South Africa, 2003). As a result the availability of

psychometric tools in Xhosa would be a valuable resource that could improve engagement of Xhosa speaking clients with psychotherapy interventions therefore improving access for a considerable percentage of the Eastern Cape, and South African population to mental healthcare resources.

A number of self-report inventories have already been translated from English into Xhosa. Drennan, Levett and Swartz (1991) first translated the Beck Depression Inventory into Xhosa to investigate the manifestation and expression of dysphonic states within Xhosa speaking cultural groups. Smit, van den Berg, Bekker, Seedat and Stein (2006) then translated the Centre for Epidemiology Depression Scale (C-EDS), the Alcohol Use Disorders Identification Test (AUDIT) and the Harvard Trauma Questionnaire (HTQ) into Xhosa for use in assessing for co-morbid psychological disorders in Xhosa speaking individuals diagnosed with HIV or AIDS. More recently Steele and Edwards (2008a) translated the Beck Depression Inventory II (BDI-II), the Beck Anxiety Inventory (BAI) and the Beck Hopelessness Scale (BHS) into Xhosa for use as basic psychological screening tools for depression and anxiety in primary and secondary mental healthcare contexts. Barker, Pistrang and Elliott (2002) highlight that self report inventories are particularly useful due to their user-friendly administration and clinical utility in complementing history-taking interviews by recording respondents' own perceptions of the severity of their distress. Although Barker et al. (2002) also highlight the subjective nature of these questionnaires and caution clinicians to interpret responses accordingly.

However Drennan et al. (1991), Smit et al. (2006) and Steele and Edwards (2008a) all report difficulties in finding Xhosa vocabulary equivalents for psychological concepts used commonly within the English language. These difficulties have been interpreted as the result of the psychotherapy discourse used within the English language, which is not supported within African languages like Xhosa. Drennan et al. (1991) highlight that within the Xhosa language the expression of psychological distress often draws from somatic or concrete terms as opposed to the emotional or affective vocabulary used within the English language to describe this distress.

The difficulty identified by these researchers in finding linguistically equivalent terms across English and Xhosa for psychological terminology illustrates the same

challenges Xhosa speaking psychologists and Xhosa speaking clients experience when attempting to deliver and access psychological support that is well established in English vocabulary and terminology, in the Xhosa language. Drennan et al. (1991) explain that psychology's professional explanatory model draws predominantly on emotional and affective terms in explaining psychological distress, and that the lack of equivalent terminology in Xhosa creates a significant barrier for Xhosa speaking psychologists who are attempting to provide psychotherapy services in Xhosa, and individuals seeking psychological support, who are attempting to access psychotherapy resources in Xhosa.

Westermeyer and Janca (1997) agree highlighting that "language fosters the expression of certain symptoms while dampening or obstructing the expression of other symptoms" (p.294). They explain that because culture shapes the way language is used to conceptualise feelings, thoughts and behaviours, the terms and experiences used to describe psychological distress vary considerably across languages making it difficult to find vocabulary equivalent terminology. However currently, South African psychologists continue to be trained in a western psychiatric model. In order for African language speaking psychologists and clients wishing to access psychotherapy services in Xhosa to make use of this western psychiatric model, psychometric tools are required to assist both the mental healthcare professional and client in negotiating a shared exploratory model of distress in Xhosa.

Westermeyer and Janca (1997) note that obtaining the same conceptual meaning across languages is achievable through the use of longer, more descriptive phrases to convey the meaning of a single word in one language in an equivalent form in another. The emotional or affective terminology required in order for South African trained psychologists, and Xhosa speaking clients to utilise psychotherapy more effectively in Xhosa, could be made available in the form of translated psychometric tools that evaluate a broad concept of distress. Drawing from this understanding, the translation of psychometric tools into African languages like Xhosa essentially provides a medium through which terminology and vocabulary, and the conceptualisation of psychological distress in emotional or affective terms as a

result, becomes more accessible to Xhosa speaking individuals, thus improving accessibility to psychological support in the form of psychotherapy resources.

## **CONCLUSION**

From this discussion it is evident that language and communication barriers are tangible limitations to accessing state mental healthcare services. However within university student counselling centres the majority of students attending English and Afrikaans medium universities possess the necessary language competencies to make use of these services, even though service provision is limited to English and Afrikaans. Research within the context of university student counselling centres suggests that psychological services may be under-utilised by black students possibly due to the lack of staff diversity perpetuating a white, male Eurocentric culture and reinforcing a sense of alienation and isolation of black students. In addition mental healthcare services may be unfamiliar to black students from peri-urban and rural secondary school backgrounds, and perceived by students from disadvantaged backgrounds with a degree of scepticism.

Within this context access to psychological services may be further reduced for black South African students by the lack of African language speaking psychologists and psychological resource materials available in African languages like Xhosa to assist these students in bridging the gap between their personal explanatory models of distress and the counselling centre's professional explanatory model that draws predominantly on a western psychiatric model comprising emotional vocabulary or affective terminology in conceptualising distress. The translation of psychometric tools and specifically self report inventories that evaluate broad experiences of distress, into African languages has been suggested as one initiative for improving access to professional mental healthcare services for African language speaking South Africans. This initiative would meet higher educational institution requirements for the active development of dominant African languages within their regions, and assist in meeting the goals outlined by the Department of Health's (2011) Policy on Language Services.

Currently there is no self-report inventory available in Xhosa that assesses gross psychological distress or the general outcomes of psychotherapy treatment. The Clinical Outcomes in Routine Evaluate – Outcome Measure (CORE-OM), presented in the following chapter, is used extensively across the UK NHS primary and secondary healthcare sites to assist clinicians during the initial clinical interview in establishing the degree of distress individuals are presenting with before commencing treatment, and at the termination of treatment to evaluate the degree of therapeutic change effected by the intervention (Evans et al., 2002).

Within South African student counselling centres this self report inventory, in both its English and translated Xhosa versions, holds considerable clinical utility within the clinical assessment process in assisting in understanding the client's distress, particularly within Xhosa speaking client population groups who wish to access psychotherapy resources in Xhosa but struggle to find the appropriate emotional or affective terminology to express their distress. In addition following treatment the CORE-OM English and Xhosa versions would allow for the evaluation of the effectiveness of the intervention conducted, generating therapeutic outcomes for South African interventions conducted in both English and Xhosa.

The successful adaptation of the CORE-OM into Xhosa for use within South African university student counselling centres would also provide the foundation for adapting the tool for broader use within other primary and secondary mental healthcare contexts at state community and district levels, as well as general and psychiatric hospitals. This clinical utility is presented in the following chapter as the motivation for adapting the CORE-OM into Xhosa.

## **CHAPTER 3: LITERATURE REVIEW - THE CLINICAL OUTCOMES IN ROUTINE EVALUATION – OUTCOME MEASURE (CORE-OM)**

The Clinical Outcomes in Routine Evaluation – Outcome Measure (CORE-OM) was developed concurrently with the introduction of practice-based evidence and the use of effectiveness data as a complementary model to evidence-based practice and the use of efficacy data in determining best practice within the UK NHS governance of psychotherapy practices.

### **3.1 Evidence-based practice and practice-based evidence models**

Mellor-Clark, Connell, Barkham and Cummins (2001) define evidence-based practice as the deliberate application of current evidence in informing therapeutic client care by combining clinical expertise with evidence generated through systematic research. Barkham and Mellor-Clark (2003) explain that efficacy research involves carefully designed research trials that focus on maximising internal validity in order to draw causal inferences about how a particular treatment impacts on a particular clinical problem. Margison et al. (2000) highlight that through the use of selective samples determined through strict inclusion criteria, and rigorously defined, manualised interventions conducted by clinicians under controlled conditions, efficacy research predicts whether a particular treatment works for a particular clinical problem and is more effective than other interventions or no treatment.

Efficacy data in the form of systematic statistical meta-analyses are generated through the accumulation of randomised controlled treatment trials (Barkham et al., 2001). Clinical treatment guidelines are established based on the outcomes generated from meta-analyses to identify a) the individuals most likely to benefit from psychotherapeutic interventions, and b) the most appropriate evidence-based treatments to address these individuals' needs (Mellor-Clark, Barkham, Connell & Evans, 1999). Barkham et al. (2001) highlight that as a result evidence-based practice has become a cornerstone in clinical governance within the UK health care system.

However, Mellor-Clark et al. (2001) note that the evidence-based practice model is informed by trials that take place outside of the context of routine clinical practice. As a result, concerns have been raised about the relevance and generalisability of outcomes data generated within research contexts that dictate strict inclusion criteria and rigorously defined interventions, in comparison to the varied and individualised cases presented in routine clinical settings (Barkham & Mellor-Clark, 2003; Evans, Connell, Barkham, Marshall & Mellor-Clark, 2003; Gilbert, Barkham, Richards & Cameron, 2005; Margison et al., 2000).

Margison et al. (2000) comment further that while randomised treatment trials offer a prediction of how successful a particular treatment could be, based on the generating of group means, these trials are unsuccessful in predicting outcomes at an individual case level. Branney and Barkham (2006) agree, adding that the lack of opportunity afforded to clinicians within the context of systematic research to demonstrate the effectiveness of the therapeutic services they provide as healthcare practitioners reduces their abilities to develop professional confidence and ownership of their applied psychotherapeutic practices.

In addressing these criticisms the UK Department of Health introduced a complementary model for improved client care and service delivery that initiated the use of practice-based evidence, defined as effectiveness data, collected by practitioners within the context of routine clinical practice, as a supplement to the efficacy data generated through evidence-based practice in research contexts (Barkham et al., 2001; Mellor-Clark et al., 1999). Margison et al. (2000) define effectiveness research as uncontrolled studies that examine the extent to which there is evidence that a particular clinical method or psychotherapy is effective in treating a specific clinical problem across client populations, clinical settings and practitioners. Margison et al. (2000) explain that while the evidence-based practice model is able to demonstrate whether a particular treatment is effective as a result of the high internal validity of the research design, the practice-based evidence model allows for high external validity by sampling interventions in routine clinical practice, thus allowing for generalisability across a wide range of clients, settings and practitioners.

In applying the practice-based evidence model, data generated in the form of practice-based evidence has been used to evaluate the validity of clinical treatment guidelines devised through systematic research trials (Mellor-Clark et al., 1999). Gilbert et al. (2005) explain that as a result, concerns regarding the generalisability of systematic statistical meta-analyses have been addressed by practitioners using evidence generated in routine clinical settings, and practitioners have therefore been assigned accountability and ownership for applied therapeutic practice. Barkham and Mellor-Clark (2003) add that the practice-based evidence model has provided an opportunity for research to move away from the client as the unit of analysis and introduce the practitioner as a measurable unit of analysis, allowing for the evaluation of treatment responses of clients as influenced by the clinician, promoting further ownership by practitioners of the therapeutic process and improved clinical practice.

In operationalising this complementary practice-based evidence model standardised service delivery audits and outcome benchmarking were suggested as tools to provide continued monitoring of the effectiveness of UK NHS psychological therapy service delivery (Barkham et al., 2001; Mellor-Clark et al., 1999). Practitioners could as a result be assigned ownership over the process of measuring, monitoring and managing psychological service performance at an individual client level, service management level and national level (Barkham, Mellor-Clark, Connell & Cahill, 2006). However, Mellor-Clark et al. (2001) explain that in order to achieve these aims, practitioners required a psychometric tool able to generate the measurable outcomes needed. At the time a multitude of different outcome measures were being employed across NHS sites, but the lack of standardisation amongst these measures resulted in an inability to collate and compare the resultant data (Mellor-Clark et al., 1999).

As a result the development of a standardised outcome measure that would allow for comparison of outcomes nationally across NHS sites and across different client population groups was suggested (Barkham et al., 1998). Mellor-Clark et al. (1999) explain that a standardised outcome measure held the potential to generate effectiveness data regarding both individual client care and NHS service delivery, allowing for valuable feedback to NHS commissioners, as well as providing rich data

for future effectiveness research. Barkham et al. (1998) add that a core outcome measure was suggested because it would allow for the broad evaluation of the effectiveness of psychological treatments while complementing other more specific measures that could be added to it and used alongside it.

### **3.2 The process of developing the CORE-OM**

A multi-disciplinary team was assembled, representing fields of psychiatry, clinical and counselling psychology as well as psychotherapy, and funded by the UK Mental Health Foundation (Mellor-Clark et al., 1999). Previous attempts at developing core outcome measures to evaluate change in psychotherapy were examined and used to guide the development process. Barkham et al. (1998) highlight that one of the initial criticisms of previously unsuccessful outcome measures was the lack of a theoretical base to underpin the development of tools. As a result the UK team began their development process by identifying a relevant theoretical foundation for the outcome measure they were designing and drew from the phase model of psychotherapy outcome developed by Howard, Lueger, Maling and Martinovich (1993).

#### **a) Theoretical foundation of the CORE-OM**

Howard et al. (1993) explain that the phase model of psychotherapy outcome conceptualises psychopathology as the result of an individual's lack of emotional and psychological resources to cope with all of life's circumstances or situations. As a result when a particular experience becomes too overwhelming the individual's coping resources become stressed and that individual experiences a decline in life functioning. If this decline is extreme or persistent the individual begins to manifest psychological symptoms that if pervasive result in feelings of helplessness, hopelessness and desperation, altering the individual's subjective experience of wellbeing. At this stage the individual might seek psychological support or treatment.

Howard et al. (1993) explain that if the individual then initiates treatment, he or she is likely to enter into psychotherapy experiencing painful psychological symptoms and feelings of hopelessness, desperation and powerlessness. Howard, Moras, Brill,

Martinovich and Lutz (1996) add that the individual is possibly demoralised and unable to access his or her natural coping resources. Howard et al. (1993) suggest that therapeutic change at this stage, referred to as the phase of remoralisation, focuses on improved subjective wellbeing as the therapist clarifies symptoms and the presenting problem while instilling the individual with a sense of hope which allows for improved self-efficacy.

Howard et al. (1996) report that individuals generally respond quickly to this form of intervention and experience an improved subjective sense of wellbeing within a few sessions. Within this context Stevens, Hynan and Allen (2000) define subjective wellbeing as “a patient’s report of feeling better psychologically and emotionally since entering treatment” (p.275). Howard et al. (1993) explain that in some instances this improvement is sufficient enough to motivate the individual to draw from his or her own coping resources to find resolutions to the problem or manage the related symptoms more adaptively, and treatment is terminated. However they add that in other cases, severe and enduring psychological symptoms motivate the individual to enter into the second phase of treatment and address the precipitating factors that originally led to the problem and related psychological symptoms.

At this stage the individual enters into what Howard et al. (1993) describe as the phase of remediation, where treatment focuses on the resolution of dysfunctional symptoms while developing improved coping skills. Stevens et al. (2000, p.275) explain that symptom relief includes “fewer or no depressive cognitions, decreased phobic reactions or lower scores on psychopathology scales”. Howard et al. (1996) highlight that achieving symptom relief and remediation is typically a far more gradual process than remoralisation and that after experiencing a resolution of symptoms the individual may terminate treatment feeling more ably prepared to deal with the precipitating problem successfully in the future.

However Howard et al. (1993) note that for other individuals a resolution of symptoms allows for the recognition of recurring maladaptive patterns that are impacting negatively on the achievement of life goals, and these individuals may choose to remain in treatment to address these patterns, entering into the final stage of treatment, the phase of rehabilitation. Howard et al. (1993) describe the phase

rehabilitation as the process of unlearning of long-term, maladaptive patterns of behaviour and the establishing of new, more adaptive ways of coping with life. Howard et al. (1996) explain that at this stage the individual begins to experience improvement in life functioning however the process is gradual and influenced by the degree of severity of maladaptive functioning. Stevens et al. (2000) add that enhanced life functioning includes improvements within work and school performance, and the improved capacity for engaging in committed, intimate relationships.

The phase model of psychotherapy outcome is presented as a sequential phase model that suggests remoralisation and an experience of improved subjective wellbeing is necessary before the individual is able to begin remediation and the experiencing of symptom resolution (Howard et al., 1993). Following symptom resolution the individual is then able to move into rehabilitation and the outcome of improved life functioning (Howard et al., 1993). Shapiro et al. (2003) highlight that in accordance with this model achieving treatment goals becomes more difficult as the individual moves through these three phases, as achieving remoralisation is less complex than achieving remediation, which in turn is less complex than achieving rehabilitation.

Howard et al. (1993) presented evidence for the phase model of psychotherapy outcome using a study conducted at Northwestern Memorial Hospital Institute of Psychiatry, a teaching facility and training site for psychologists, psychiatrists and social workers in the United States. Their sample included 529 outpatients who presented for treatment at the institute, the majority of whom were women (74%) aged between 25-35 years (52%) presenting with mild to moderate psychological disorders. Of this sample 90% had received some form of tertiary education and 57% had received individual psychotherapy previously. In total 86 therapists were involved in the treatment, the majority of whom were psychologists and psychiatrists in training, 75% of which had treated 10 or more individuals. Participants from the sample provided ratings of subjective wellbeing, current symptoms and current life functioning during intake and during therapy sessions 2, 4, and 17. The study demonstrated a sequential progression in therapeutic outcomes achieved at each of these intervals. Improved subjective wellbeing was achieved within the shortest time-

frame, followed by symptom reduction, and then finally improved life functioning (Howard et al., 1993).

Further evidence in support of the phase model of psychotherapy outcome has been demonstrated using both US and UK samples. Kopta, Howard, Lowry and Beutler (1994) using a US sample of 685 out-patients presenting for treatment across five mental health care centres, demonstrated that over a treatment period of 52 sessions, remission of acute symptoms of psychological distress was fastest and achieved in 68-95% of cases, remission of chronic symptoms was achieved in 60-86% of cases, while remission of more severe, characterological or interpersonal symptoms indicative of reduced life functioning took the longest treatment time and was achieved in only 59% of cases.

Barkham et al. (1996) found similar results using a UK sample of 212 individuals (100 men and 112 women with a mean age of 39.5 years) presenting for out-patient treatment of depression. Barkham et al. (1996) demonstrated that acute depressive symptoms (such as guilt, crying and pessimism) showed the fastest rate of change, while more characterological or interpersonal symptoms (such as self-accusation, self-dislike and physical dislike of self) demonstrated the slowest change.

In a related study using a US sample of 20 individuals treated for mild to moderate psychological distress over an 18-month period, Hilsenroth, Ackerman and Blagys (2001) demonstrated that within the first nine sessions of psychotherapy treatment individuals experienced statistically and clinically significant improvement in both subjective wellbeing and symptom distress, with a large effect size with regards to subjective wellbeing and a medium effect size with regards to symptomatology. However individuals demonstrated only statistically reliable improvement with regards to life functioning, with a small effect size.

While Maling, Gurtman and Howard (1995) using a US outpatient sample of 307 individuals, showed that only after 10 sessions of psychotherapy, less severe interpersonal problems such as issues of control (for example: accepting authority, attempting to control and/or manipulate others) began responding to treatment, while more enduring and severe interpersonal problems such as detachment from others

(for example: difficulties forming intimate relationships and long-term commitments with others), and self-effacing problems (for example: sensitivity to rejection, difficulty asserting needs in a relationship, and fear of disappointing others) demonstrated substantial resistance to treatment.

These research studies provide support for the validity of the phase model of psychotherapy outcome, particularly in populations presenting with mild to moderate degrees of psychological distress. However in contrast Joyce, Ogrodniczuk, Piper and McCallum (2002) demonstrate that the phase model of psychotherapy outcome did not generalise to a US sample of 70 individuals presenting for treatment of severe psychological distress. Following the same method outlined by Howard et al. (1993), using the same measures and analytical approach, Joyce et al. (2002) demonstrate no support for the sequential nature of the phase model of psychotherapy outcome, showing concurrent change across the three outcomes of subjective wellbeing, problems and symptoms, and life functioning, across treatment intervals.

Joyce et al. (2002) conclude that the phase model of psychotherapy outcome is most applicable for short-term treatments of mild to moderate psychological disorders in outpatient populations such as primary and secondary healthcare contexts, as opposed to more severe pathologies evident in in-patient populations. Barkham, Gilbert, Connell, Marshall and Twigg (2005b) define UK primary health care contexts as sites that typically manage acute cases of immediate psychological distress, often brought on by life stresses, and manifesting in mild to moderate psychological distress over a limited duration, while UK secondary health care contexts are characterised more frequently by chronic cases of moderate to severe psychological distress occurring over a more extended period of time.

In spite of the lack of consistent evidence of the sequential nature of the phase model of psychotherapy outcome, the research conducted by Joyce et al. (2002) in combination with the findings reported by Howard et al. (1993), Kopta et al. (1994), Maling et al. (1995), Barkham et al. (1996) and Hilsenroth et al. (2001) demonstrate the utility of subjective wellbeing, problems and symptoms, and life functioning as measurable outcomes indicative of changes in psychological distress. As a result the

UK team tasked with the development of an appropriate outcome measure selected the phase model of psychotherapy outcome as the theoretical foundation for their outcome measure, conceptualising the psychological construct of gross distress as measurable through indicators of subjective wellbeing, problems or symptoms and life functioning.

#### **b) Participation from clinicians and NHS stakeholders**

Having identified a theoretical foundation the UK developers identified limitations in previously developed outcome measures that had not achieved popular clinical use nationally and internationally. Barkham et al. (1998) noted that these tools were developed predominantly by researchers and were not applicable for routine clinical use in that they contained too many test items and were focused on evaluating theoretical constructs as opposed to eliciting important clinical information such as individuals' presenting symptoms and quality of life functioning. Both Barkham et al. (1998) and Mellor-Clark et al. (1999) note the importance of gaining clinician participation during the development of an outcome measure in order to ensure clinical relevance and applicability, and promote the adoption and implementation of the measure in clinical settings.

As a result a stakeholder survey was conducted nationally through the UK postal service sampling a broad range of NHS providers (998 NHS directors and senior staff, as well as 192 members of the UK Chapter of the Society of Psychotherapy Research) and NHS commissioners (76 chief executives of Family Health Service Authorities). Mellor-Clark et al. (1999) explain that the aim of the survey was to evaluate the current effectiveness of data collection practices taking place within NHS sites and the opinions of NHS providers and commissioners regarding the possible introduction of a standardised outcome measure for effective data collection.

Mellor-Clark et al. (1999) report that a total of 246 participants responded to the survey (220 NHS providers and 26 NHS commissioners). Evans et al. (2000) explain that with regards to current effectiveness data collection practices 59% of respondents reported using outcome measures, however only 16% of these used

the same measures for both pre- and post-treatment assessment. At the time of the survey 57 different outcome measures were reportedly in use across UK NHS sites (Evans et al., 2000) and respondents reiterated the concerns of the Department of Health that a lack of standardisation of outcome measures made comparison of different client populations and service delivery sites extremely difficult while also eliminating the possibility of outcome benchmarking (Mellor-Clark et al., 1999).

With regards to attitudes relating to the introduction of a standardised outcomes measure for generating effectiveness data, both NHS providers and commissioners indicated support for the initiative (Mellor-Clark et al., 1999). Both parties highlighted the need for a brief and easily readable questionnaire that was unobtrusive and easily administered, scored and interpreted (Evans et al., 2000). In addition NHS providers and commissioners emphasised the need for a standardised outcome measure that was pan-theoretical, allowing for applicability across client populations receiving psychotherapeutic treatment regardless of presenting problem, clinical setting or modality of therapy employed.

The survey results also indicated the need for a core measure that was sensitive towards therapeutic change, appropriately valid and reliable, while providing both clinical and non-clinical referential data for score interpretation (Evans et al., 2000). The importance of demonstrable psychometric properties and normative data was reinforced by Barkham et al. (1998) who highlights that many previously unsuccessful outcome measures lack referential and normative data that illustrates the differences in scores between clinical and non-clinical population groups, preventing clinicians from being able to interpret the resultant scores meaningfully.

Furthermore survey feedback indicated that a suitable outcome measure would need to be sensitive to the clients' needs while aiding clinicians in assessment, case management, service planning and development (Evans et al., 2000). NHS providers and commissioners ranked information about presenting problem or symptoms, and life functioning as essential areas the outcome measure should assess, while NHS providers also highlighted the need for information pertaining to subjective wellbeing and risk (Barkham et al., 2001).

In addition to this qualitative feedback, the national survey also identified eight popular psychometric measures most commonly used across the NHS sites sampled, namely the Beck Depression Inventories I and II, the Hospital Anxiety and Depression Scales, the Symptom Check Lists, the Brief Symptom Inventory, the General Health Questionnaires, the Rosenberg Self-Esteem Inventory and the Inventory of Interpersonal Problems (Evans et al., 2000). These measures in addition to the Beck Anxiety Inventory, the Borderline Syndrome Index, the Irritability, Depression and Anxiety Inventory and the Personality Diagnostic Questionnaire were pooled into a total of 631 test items (Evans et al., 2000).

These 631 test items were then equally divided amongst six groups of between six to eight raters comprising the UK development team, additional professional psychotherapists and researchers (Barkham et al., 2001; Evans et al., 2000). The groups evaluated test items for bias and offensiveness, and examined which items would be most suitable for inclusion in a core self-report measure for assessing the measurable outcomes of subjective wellbeing, symptoms or presenting problems, and life functioning in accordance with the phase model of psychotherapy outcome (Evans et al., 2000).

As a result of this process, Barkham et al. (2001) explain that 40 potential questionnaire items were selected with the aim of being accessible to a wide range of client population groups and psychotherapy orientations. The resultant items were piloted for qualitative feedback on psychotherapists, the public and researchers, colleagues from ethnic minority groups and a group of multicultural mental health service developers (Evans et al., 2000). Feedback from this pilot prompted word changes to address confusion in language use and cultural differences in the representing of mental health problems resulting in a reduction in questionnaire items from 40 to 34 items (Barkham et al., 2001).

In July 1998 the Clinical Outcomes in Routine Evaluation – Outcome Measure (CORE-OM) was introduced into NHS sites nationally, in the form of a self-report questionnaire (Barkham et al., 2001), and instruction manuals were developed to promote standardised application (Barkham et al., 1998). The CORE-OM was promoted as a standardised outcomes measure that assessed both the core

domains of psychological problems, and the effectiveness of psychological therapies employed in treating these problems, while being easily accessible (free of charge on the condition that it would not be altered or used for financial gain) and practically useful to clinicians (Evans et al., 2002). The CORE-OM as a core measure was designed to be compatible with more specialised and problem-specific measures that could be used to complement assessment when necessary (Barkham et al., 1998).

In November 1998, a user survey was conducted with NHS sites that had shown interest in adopting the CORE-OM during its launch. Of the 134 sites that were contacted 106 responded, of which 59 (56%) were currently using the CORE-OM while 38 (36%) indicated intention to implement the CORE-OM in the short-term (Barkham et al., 2001). To supplement the CORE-OM questionnaire, subsequent CORE measures including the CORE Therapy Assessment Form (used during the intake interview to collect contextual client demographic information in addition to information relating to previous treatments and medications, present difficulties and current social support resources) and the CORE End of Therapy Form (completed on termination to contextualise therapy outcomes while recording duration, frequency and therapeutic treatment used) were developed, making up the CORE System (Barkham et al., 2006; Mellor-Clark et al., 2001). In conjunction, the CORE-PC, a standardised software package used for the collation and analysis of effectiveness data within and across service sites and the production of service profile reports, was introduced (Barkham et al., 2006) and supplemented by training and support for NHS users of the CORE System (Evans, Mellor-Clark, Barkham & Mothersole, 2006).

Barkham et al. (2006) explain that the implementation of the CORE System allowed for the national collation of data sets as NHS sites were encouraged to donate their outcomes data to the CORE System Trust, allowing for the subsequent generating of national benchmarks. Over a three year period from 2003 to 2005, the CORE developers created a network of nationally collated data that included 35 000 treated clients across 34 NHS primary and secondary care services (Newnham & Page, 2010).

### **3.3 Structure, scoring and psychometric properties**

The CORE-OM is a double-sided, A4 sized, self-report inventory comprising 34 statements and tick box responses on a five-point likert scale ranging between 0 and 4 (Evans et al., 2002). Individuals are asked to rate the statements in light of how they have been feeling over the past week. The CORE-OM is recommended for use as an initial screening tool within primary and secondary UK National Healthcare Service (NHS) contexts to indicate severity of psychological distress and as an outcome measure completed on termination of psychotherapy to measure the degree of therapeutic change achieved (Evans et al., 2002). However Mellor-Clark et al. (1999) caution that the CORE-OM is not designed for use as a diagnostic tool.

Within the CORE-OM questionnaire the subjective wellbeing domain, corresponding to the phase model of psychotherapy's phase of remoralisation (Howard et al., 1993), comprises 4 questionnaire items. The presenting problems or symptoms domain, corresponding to the phase of remediation in the phase model of psychotherapy (Howard et al., 1993), is made up of 12 questionnaire items that tap 4 cluster areas namely depression (4 items), anxiety (4 items), physical problems (2 items) and trauma (2 items). The life functioning domain, corresponding to the phase model of psychotherapy's phase of rehabilitation (Howard et al., 1993), is made up of 12 items tapping 3 cluster areas namely general functioning (4 items), social relationships (4 items) and close relationships (4 items). In addition to these three domains Barkham et al (2006) explain that a risk domain was added to the CORE-OM as a fourth measurable outcome of psychological distress in order to meet the needs of NHS providers who had indicated the assessment of risk as an important element in an outcome measure (Barkham et al., 2001). The risk domain comprises 6 items in 2 cluster areas, namely harm towards self (4 items) and harm towards others (2 items).

The CORE-OM evaluates 9 of the 11 primary symptoms identified by the National Institute for Clinical Excellence (NICE) for assessing and managing depression, namely low mood (3 items), loss of pleasure or interest (1 item), fatigue (1 item), disturbed sleep (1 item), poor concentration (2 items), low self-confidence (2 items), suicidality (4 items), guilt (2 items), and social disability (9 items); and 7 of the 9

primary symptoms identified by NICE for assessing and managing anxiety, including apprehension (2 items), panic attacks (1 item), irritability (3 items), disturbed sleep (1 item), social avoidance (5 items), poor concentration (2 items) and worry (3 items) (Evans et al., 2006).

#### **a) Scoring**

Of the 34 CORE-OM questionnaire items, 8 are positively framed and scored in reverse while the remaining 26 items are negatively framed (Evans et al., 2002). All 34 items assess a range of intensities of psychological problems, with 17 items evaluating low intensity problems (for example: I feel anxious or nervous) and 17 items evaluating high intensity problems (for example: I feel panic or terror) (Barkham et al., 2005b). Evans et al. (2002) explain that the CORE-OM's ability to assess a range of problem intensities increases its scoring range and sensitivity to change.

The CORE-OM can either be hand-scored or computer scanned (Evans et al., 2002). The total score, ranging between 0 – 136 and calculated by adding the response values of all 34 items produces a measure of current psychological global distress ranging from healthy to severe (Mellor-Clark et al., 1999). A total mean item score is obtained by dividing the total score by the number of completed responses, usually 34 (Evans et al., 2002). Current practice is to multiply this score by 10 to produce a clinical score falling in the range of 0-40 (CORE Information Management System, 2007). Barkham et al. (2006) emphasise that while this method does not alter the psychometric properties of the CORE-OM, the standard deviation and relevant norms must be multiplied by 10 accordingly in order to ensure relevant comparison.

A clinical score of 10, equivalent to a total score of 34, marks the clinical cut off point, or the point pre-treatment, where most individuals belonging to the non-clinical sample score below, and most individuals in the clinical sample score above (Mellor-Clark, 2005). Clinical cut off scores are calculated using Jacobson and Truax's (1991) reliable and clinically significant change model. Jacobson and Truax (1991) explain that the reliable and clinically significant change model was initially

introduced as an alternative method to inferential statistics in evaluating the benefits of psychotherapeutic treatments. The model defines clinically significant change as occurring when an individual's score on an outcome measure moves from that representative of a dysfunctional or clinical population, requiring psychotherapeutic intervention, to that representative of a functional or non-clinical population not requiring intervention (Evans, Margison & Barkham, 1998; Jacobson & Truax, 1991).

Three mathematical criteria can be used to evaluate clinically significant change. Jacobson and Truax (1991) explain that in the first criterion, criterion A, referential data from the clinical population is used to denote clinically significant change when there is a change of at least 2 standard deviations away from the clinical population sample mean, between the pre- and post-treatment scores of the individual. Evans et al. (1998) highlight that this method does not allow for comparing the post-treatment score to that of a non-clinical population sample. Jacobson and Truax (1991) explain that the second criterion, criterion B, uses referential data from the non-clinical population sample to denote clinically significant change when the individual's post-treatment score moves to within 2 standard deviations of the non-clinical population sample mean. However Evans et al. (1998) criticise this method for not indicating the extent to which the individual is moving out of the clinical population sample.

Jacobson and Truax (1991) explain that the third criterion, criterion C uses referential data from both the clinical and non-clinical population samples to determine a cut-off point between the two samples and can only be applied to outcome measures with proven psychometric properties. Evans et al. (1998) highlight that the cut-off point indicates the point where the standard deviation between the clinical and non-clinical sample groups is equal. This point is the sum of the mean of the clinical population sample multiplied by the standard deviation of the non-clinical population sample, added to the mean of the non-clinical sample multiplied by the standard deviation of the clinical sample. This total is then divided by the total of the sum of the standard deviation of the non-clinical sample, added to the standard deviation of the clinical sample:

$$\frac{(mean_{clin} \times SD_{norm}) + (mean_{norm} \times SD_{clin})}{SD_{norm} + SD_{clin}}$$

Clinically significant change occurs when the individuals' post-treatment score moves across the cut-off point, from that representative of the clinical sample to that representative of the non-clinical population (Jacobson & Truax, 1991). Evans et al (1998) explain that this criterion makes two assumptions, firstly that there is a greater likelihood of the individual's score falling in the clinical sample range when entering psychotherapy treatment than in the non-clinical sample range, and secondly that there is a greater likelihood of the individual's score moving into the non-clinical sample range post-treatment than remaining in the clinical sample range, assuming that treatment is effective.

Separate clinical cut off points were initially established on the CORE-OM for UK men and women within the clinical population group across the total score and domain scores (Evans et al., 2002). However, subsequent research conducted by Connell et al. (2007b) found no significant difference between male (10.0) and female (9.7) cut-off scores in a much larger clinical sample of 10761 clients compared with a far more representative non-clinical UK sample generated through randomised sampling of people living in private homes across Great Britain, stratified by NHS region and socio-economic conditions.

Consequently a rounded-off clinical cut-off score of 10 was introduced across sexes yielding a sensitivity (ability to correctly detect psychological distress) of 87% and specificity (ability to minimise the false detection of distress in its absence) of 88% in discriminating between clinical and non-clinical populations (Connell et al., 2007b). The CORE-OM cut-off score is also equivalent to that of the Beck Depression Inventory I (BDI-I) (Connell et al., 2007b).

Barkham et al. (2006) highlight that individuals who produce a clinical score of 10 or above are experiencing psychological distress significant enough to place them in the category of a clinical population group requiring psychological intervention. While individuals scoring below 10 (a total score ranging between 1-33) fall in the non-clinical population group and may experience low levels of psychological distress occasionally, due to specific circumstances or increased stress, however function in the healthy range overall. Barkham et al. (2006) provide a scale of levels of severity related to clinical scores whereby a clinical score of 10-14 indicates mild

psychological distress (total score of 34-50), while 15-19 indicates moderate distress (total score of 51-67), 20-24 indicates moderate-to-severe distress (total score of 68-84), and a score of 25 or above indicates severe distress (total score of 85 or above). Barkham et al. (2005b) caution that individuals who achieve a clinical score of 25 or above are effectively scoring one standard deviation above the mean for a clinical population and are thus experiencing significant and severe psychological distress.

Core domain mean scores are obtained by adding the response values of domain specific items then dividing the total by the number of completed responses in each domain (Evans et al., 2002). Again the resultant figure can then be multiplied by 10 to produce a clinical score between 0 - 40 (CORE Information Management System, 2007). Pro-rated scores are obtainable if individuals omit certain items, allowing clinicians to still obtain a mean score of overall psychological distress, or core domain specific mean scores (Evans et al., 2002). However pro-rating is not recommended when two or more items have been omitted from a core domain or when more than three items have been omitted overall (Evans et al., 2002).

The CORE-OM is repeated at termination of therapy, producing a new measure of psychological global distress. This new score is comparable to the score obtained on intake, and produces a measure of therapeutic outcome achieved (CORE Information Management Systems, 2007). For meaningful change to occur during the course of therapy, change must be reliable as well as clinically significant in accordance with the reliable and clinically significant change model (Jacobson & Truax, 1991).

Based on the reliable and clinically significant change model (Jacobson & Truax, 1991) Evans et al. (2002) identify four types of clinically significant and reliable change that can occur after intervention, namely 1) clinically significant improvement where change occurs from a clinical to a non-clinical range, 2) improvement where change occurs towards the non-clinical range, but not across the cut-off point, 3) no change where individuals remain in the clinical range or remain in the non-clinical range, and 4) deterioration where change occurs from a non-clinical to a clinical range. However Jacobson and Truax (1991) note that

because the criterion for clinical significance is based on two overlapping population samples it is possible for change to be clinically significant (moving across the cut-off point from a clinical to non-clinical population) but also very small and possibly unreliable. As a result Jacobson and Truax (1991) introduced the reliable change index to measure whether such change was reliable.

Evans et al. (1998) describe reliable change as the extent to which change in outcome measure scores of an individual following treatment supersedes what would be expected by measurement variability or measurement error, and is as a result evidence of a true underlying difference in the individual. Reliable change is therefore change that is unlikely to occur as the result of measurement error, in 95% of clinical cases (Evans et al., 1998). Measurement variability or the reliable change index (RCI) is calculated by subtracting the pre-treatment outcome measure score ( $x_1$ ) from the post-treatment score ( $x_2$ ) and dividing the result by the standard error of difference ( $SE_{diff}$ ) (Jacobson & Truax, 1991).

$$RCI = \frac{x_2 - x_1}{SE_{diff}}$$

The standard error of difference is calculated by multiplying the initial standard deviation of the outcome measure ( $SD_1$ ) by the square root of 2 and multiplying the result by the square root of 1 minus the reliability of the outcome measure ( $r$ ), using a measure of internal consistency such as test-retest reliability (Jacobson & Truax, 1991) or Cronbach's coefficient alpha (Evans et al., 1998). Therefore Connell et al (2007b) highlight that RCI depends on the outcome measure's standard deviation (SD) and reliability ( $r$ ).

$$SE_{diff} = SD_1 \sqrt{2} \sqrt{1-r}$$

The RCI is equal to 1.96 x SD, and when the RCI is greater than 1.96 x SD change is unlikely to occur as the result of measurement error in more than 5% of cases (Evans et al., 1998; Jacobson & Truax, 1991). When applying the original referential data for the CORE-OM, the RCI is 0.48 or a rounded off score of 0.5 (Barkham et al., 2006). If the CORE-OM score is multiplied by ten, then so should the RCI. Reliable

change is then quantified by a change of 5 or more points in the clinical score, usually indicating a change in the level of severity of a client's psychological distress (Barkham et al., 2006).

Evans et al. (2002) have identified three categories of reliability of change, namely 1) reliable improvement towards the non-clinical population, 2) change by chance alone where the RCI is less than 1.96, and 3) reliable deterioration towards the clinical population.

Therefore, combining reliable, and clinically significant methods, four categories emerge. Firstly change can show reliable and clinically significant improvement, where the individual's score moves from that representative of a clinical population to that representative of a non-clinical population (Evans, 1998). In such cases Jacobson, Roberts, Berns and McGlinchey (1999) categorise individuals as recovered.

Secondly Evans (1998) explains that change can be demonstrated as reliable but not clinically significant in that the individual's score remains representative of a clinical population, typically in cases of more severe pathology where movement into the non-clinical range may be an unrealistic goal. Evans (1998) adds that change can also be reliable but not clinically significant in that the individual's score before treatment already falls in the non-clinical population range, typically in cases of less severe pathology where individuals are already coping in a non-clinical range and clinically significant improvement is not possible. In these instances Jacobson et al. (1999) describe individuals as improved but not recovered.

Thirdly Evans (1998) explains that change can be clinically significant but not reliable in that the individual's pre-treatment score falls just below or above the clinically significant cut-off point, and some change is achieved, but not sufficient enough to be deemed reliable. In such cases Evans (1998) highlights that relapse is likely in that the individual may return to experiencing the same degree of distress as before commencing treatment and prolonged change in relief of distress is unlikely.

Finally Evans (1998) explains that change can show reliable deterioration where the individual's score demonstrates that the degree of change achieved is statistically reliable, but worse than the pre-treatment score, moving further towards or within the clinical population range.

Margison et al. (2000) highlights that the reliable and clinically significant change model uses complementary concepts of statistical reliability and clinical significance to demonstrate change on an individual level as opposed to demonstrating change at the level of group means. Evans (1998) explains that it thus allows clinicians to evaluate whether change has been experienced by a particular client following treatment, and whether that change has been reliable and clinically significant. Jacobson and Truax (1991) add that the reliable and clinically significant change model is relatively objective in that the definition of change is not reliant on any particular psychological disorder and as a result the model holds broad applicability and comparison across samples and presenting problems. Newnham and Page (2010) use the example that the model allows for comparison across studies of the percentage of individuals within a sample who recovered, improved, remained unchanged or deteriorated as the result of a particular treatment.

Although Atkins, Bedics, McGlinchey and Beauchaine (2005) highlight that the reliable and significant change model has been criticised on statistical grounds for failing to account for regression to the mean, and other methods of measuring clinical significance classifications have been proposed. However Atkins et al.'s (2005) comparison of three alternative methods (including the Gulliksen-Lord-Novick, Edwards-Nunnally and Hageman-Arrindell methods) with the Jacobson-Truax method demonstrated "considerable agreement among methods, which was especially great when the reliability of measurement was high" (p.986). Atkins et al. (2005) conclude that "in the absence of population-based information, the methods performed similarly and thus no method can be preferred over any other for statistical reasons" (p.986).

However the Jacobson-Truax model assumes that clinical and non-clinical sample distributions are normal and that clinically significant change can be realistically defined as a return to the non-clinical population group, which is not appropriate for

severe, chronic pathologies that do not necessarily resolve or where treatment methods are time-limited and distress is therefore unlikely to resolve completely within the defined period (Jacobson & Truax, 1991; Jacobson et al., 1999). Because the CORE-OM was developed for use predominantly within UK NHS primary and secondary healthcare contexts and not in-patient facilities treating chronic, severe distress (Evans et al., 2002), the Jacobson-Truax model remains highly relevant and applicable.

#### **b) Psychometric properties**

Evans et al. (2002) explain that referential data for the CORE-OM was generated for both a UK clinical and non-clinical population. Data from the clinical population group was drawn from a combination of both primary and secondary health care facilities across 23 sites within the UK who indicated interest in using a standardised outcome measure (Evans et al., 2002). The sample included 23 National Health Service (NHS) providers, 3 university student counselling services and 1 staff support service, providing a sample of 890 individuals (530 women, 344 men and 16 individuals who did not report their sex) with a mean age of 36 ranging between 16-78 years. Questionnaires were completed either pre-treatment or during the first treatment session (Evans et al., 2002). Psychological service staff included medical psychotherapists, psychologists, counsellors and psychotherapists varying across theoretical orientations (Evans et al., 2002).

Data from the non-clinical population group was originally collected through convenience sampling of 360 non-clinical workers, relatives and friends of the CORE developers, as well as from a university sample of 746 undergraduate and postgraduate students (Evans et al., 2002). Both samples were pooled as no significant differences were found between the student and non-student population samples, producing a total sample of 1106 individuals (601 females and 498 males, 7 sex unknown) with a mean age of 20.5 ranging between 14-45 years (Evans et al., 2002).

## Usability

In total 80% of CORE-OM questionnaires distributed to the clinical population sample were completed in full, while 91% were completed in full by the non-clinical population sample (Evans et al., 2002). However with pro-rating applied 97% of the clinical population sample questionnaires and 98% of the non-clinical population's sample questionnaires were usable (Evans et al., 2002).

Subsequent studies have demonstrated high and consistent acceptability of the CORE-OM by clinicians and clients. Evaluating a sample of 2027 primary health care users Mellor-Clark et al. (2001) indicated that 1649 (80%) completed the CORE-OM voluntarily during their first appointment, demonstrating a high rate of compliance. Of the 1649 individuals, 1643 were accepted for treatment, and 828 (50%) continued the therapeutic process until termination. Of these, 723 individuals (88%) completed the CORE-OM on termination, again demonstrating high compliance. In an additional sample generated by Barkham et al. (2005b) independent of the original referential sample data, 5733 of 6610 primary care NHS users completed CORE-OM intake questionnaires of which 83.3% were usable, while 1918 of 2311 secondary care NHS users completed CORE-OM intake questionnaires of which 84% were usable.

## Reliability

Kaplan and Saccuzzo (2009) define reliability as the ability of a measure to reproduce the same scores across repeated administrations within the same context. Outcome measures that demonstrate good reliability are relatively free of measurement error and as a result are able to generate very similar scores across administrations. Reliability of the CORE-OM was investigated using internal consistency and test-retest reliability.

### 1. Internal consistency

Internal consistency is defined by Kaplan and Saccuzzo (2009) as a measure of inter-item reliability, examining whether individual test items developed to measure the same psychological construct achieve this aim. Internal consistency measures

the degree to which each item within a scale correlates with each other item within that scale. Cronbach's coefficient alpha ( $\alpha$ ) is used to estimate the internal consistency of tests where the items evaluate opinion or experience as opposed to right and wrong answers; and estimates the covariance of test items with each other (Cronbach, 1951). Cronbach alpha estimates range between 0 (no internal consistency) and 1 (maximum internal consistency) with high item-total correlations indicating that items are thematically related to one another while low item-total correlations suggest that items are tapping different psychological constructs. Nunnally and Bernstein (1994) suggest  $\alpha \geq 0.70$  as an acceptable rule of thumb.

The CORE-OM demonstrated high internal consistency within the original UK referential data, achieving a high Cronbach alpha of 0.94 for the overall scale of global psychological distress in both the clinical and non-clinical samples and  $\alpha > 0.75$  across all domains (Evans et al., 2002). However Bedford et al. (2010) have criticised these high Cronbach alpha estimates, arguing that they suggest the unnecessary inclusion of overlapping content across CORE-OM questionnaire items.

High correlations (Spearman's  $\rho \geq 0.73$ ) were evident between all domains except the risk domain across both the clinical and non-clinical samples (Evans et al., 2002). The correlation between the three non-risk domains (subjective wellbeing, presenting problems or symptoms, and life functioning) proved so consistently stable over time, that it raised speculation as to whether the three domains co-varied too strongly (Bedford et al., 2010; Lyne, Barrett, Evans & Barkham, 2006). However Lyne et al. (2006) explain that because the CORE-OM is a measure of therapeutic outcome, covariance between these three domains is appropriate as the three domains indicate different manifestations of psychological distress, not separate measurement factors.

## 2. Test-retest reliability

Kaplan and Saccuzzo (2009) explain that test-retest reliability is estimated by administering the same test on two different occasions within the same context then finding the correlation between the two scores produced. Evans et al. (2002) highlight that high correlation indicates high test-retest reliability, while significant

score changes over a short period of time indicates poor test-retest reliability. Evans et al. (2002) adds that because test-retest reliability makes the assumption that the phenomenon being measured, in this case psychological distress, remains stable over time, a non-clinical population sample is suggested to measure test-retest reliability within the CORE-OM. However the construct of psychological distress is considerably reactive in nature and as a result consistency in scores across any sample, including a non-clinical sample, could vary considerably. Although, test-retest reliability using a small non-clinical student sample of 43 university students over a one week period produced a Spearman's rho estimate of 0.90 for the overall scale and 0.86 or higher across all the domains except the risk domain (0.64) (Evans et al., 2002). These findings indicate a high level of test-retest reliability achieved within the non-clinical student sample.

An additional study examined changes in CORE-OM intake and first session scores of clinical samples during waiting-time periods. Research was conducted by Barkham, Mullin, Leach, Stiles and Lulock (2007) over a 7-year period, investigating the stability of CORE-OM scores on a clinical sample of 1681 primary care NHS users who completed the CORE-OM on referral and initial clinical assessment and then again on the first day of treatment prior to the commencement of the treatment session. The time delay between initial assessment and treatment extended in some cases to twelve months, yet analysis revealed no significant change in mean CORE-OM scores between initial clinical assessment and treatment commencement, indicating stability of the CORE-OM as a measure of psychological distress over time within a large clinical sample.

### Validity

Kaplan and Saccuzzo (2009) define validity as the evaluation of whether a psychological test measures what it is designed to measure. Evidence for validity of the CORE-OM has concentrated specifically in the area of construct validity. Kaplan and Saccuzzo (2009) explain that construct-related evidence for validity is evidence that demonstrates how a construct has been defined and then assigned observable indicators for measurement. They explain that construct-related evidence examines whether relationships between measures of the same construct and measures of

different constructs conform to theoretical expectations. Zumbo (1999) highlights that construct-related evidence for validity can be evaluated using correlation to a gold standard, factor analysis or convergent or discriminant validity.

### 1. Factor analysis

A principal component analysis was initially conducted by Evans et al. (2002) to investigate the psychometric structure of the CORE-OM across the UK clinical and non-clinical population samples. Brown (2002) defines principal component analysis as the process of identifying the amount of variance of a construct accounted for by individual questionnaire items. Byrne (2001) explains that the analysis investigates the relationship between latent or unobserved variables (underlying factors) and observed or manifest variables (questionnaire items), represented by factor loadings. However this analysis was unable to demonstrate a strong correlation between CORE-OM questionnaire items and their theoretically related domains of subjective wellbeing, problems or symptoms and life functioning (Evans et al., 2002). Instead negatively worded items (12 items) correlated together, while positively worded items (8 items) correlated together resulting in a three factor model comprising two method factors and a risk factor (6 items) (Evans et al., 2002).

A reinvestigation of the psychometric structure of the CORE-OM was conducted by Lyne et al. (2006) using structural equation modelling. Byrne (2001) defines structural equation modelling as a confirmatory or hypothesis-testing statistical methodology that uses structural regression equations to model a theory under investigation. This model is then statistically analysed in relation to the data to establish the extent to which the model is consistent with the data, in terms of goodness of fit. The residual represents the discrepancy between the model and the data. Both the measurement model (relationship between the latent and observed variables) and the structural model (relationship between the latent variables) are investigated.

Using 2140 cases drawn from the CORE national database of UK clients making use of psychotherapy services at primary and secondary NHS sites, Lyne et al.'s (2006) analysis provided evidence for a multi-method, multi-trait nested factors model with

two orthogonal method factors (positively, and negatively worded items), four first-order orthogonal factors (subjective wellbeing, problems or symptoms, life functioning and risk), and one first-order nested general factor (general distress) (Lyne et al., 2006). However Lyne et al. (2006) was again unable to substantiate the four domains as independent factors comprising a general measure of distress. Instead Lyne et al. (2006) highlighted that high co-variance amongst the non-risk items was a result of item similarity and recommended that the CORE-OM be used as two scales, one for general distress including all 28 non-risk items, and one for risk including the 4 risk to self items.

An additional investigation by Bedford et al. (2010), conducting a four, three, two and one factor principal component analysis and Mokken scaling using a smaller sample of 543 UK NHS users, concluded that a two factor model of general distress (comprising 23 items) and risk (comprising 5 items) was the best model that met criteria for validity and reliability. However they noted high internal consistency (Cronbach  $\alpha = 0.94$ ) for the factor of gross distress indicative of item-redundancy and a lack of discriminant validity within these items; as well as a much lower internal consistency (Cronbach  $\alpha = 0.69$ ) for the risk component. Bedford et al. (2010) concluded that the inability to demonstrate structurally the validity of the three non-risk domains as independent factors, coupled with the high internal consistency of these items suggested a need to consolidate and reduce the non-risk items into one 10-12 item scale of general distress with accompanying scales for risk and life functioning.

The lack of a definable psychometric structure of the CORE-OM has implications for investigating its validity in other cultural contexts. Byrne and Van de Vijver (2010) explain that without evidence that the same psychometric structure is transportable across cultural contexts, it is not possible to conclude that the psychometric instrument is measuring the construct it was designed to measure, in the same way, across the two populations. Although the initial intention during development of the CORE-OM was to establish a general measure of distress that could be transported across clinical and non-clinical population samples of varying degrees of distress, as well as different language and cultural contexts, as the measure becomes more

globally accessible the need for score comparison across language versions increases.

Most recently the CORE-OM has been reduced to a 10-item scale of general distress conceptualised as a single factor evaluated through 10 equally related questionnaire items (Barkham et al., 2012). The psychometric structure of this shorter scale should theoretically be easier to investigate across different language versions and cultural contexts. Barkham et al. (2012) explain that in order to optimise coverage of the original CORE-OM domains, six items were suggested for inclusion from the problems or symptoms domain, comprising two items from the depressive cluster, two from the anxiety cluster, one from the trauma cluster and one from the physical problems cluster. One item was suggested for inclusion from each of the life functioning domain clusters (social, close and general) and one item from the risk to self items. No subjective wellbeing domain items were included due to their high correlation with the problems or symptoms domain.

CORE developers suggested that six high intensity and four low intensity items be retained in the CORE-10 scale, comprising eight negatively and two positively worded items (Barkham et al., 2012). These specifications were suggested in order to maintain score sensitivity in the reduced scale. CORE-OM questionnaire items that had demonstrated lower response rates in previous research of the performance of the CORE-OM were removed (items 19, 32, 30, 20 and 21), as well as items that did not conform to the item coverage specifications outlined above. Correlation of the remaining 12 questionnaire items (six pairs of similarly worded items) with their item clusters within the full CORE-OM version using two independent samples ( $n = 1618$  and  $n = 1642$ ) drawn from the CORE national data base of NHS primary healthcare users who had completed the CORE-OM, allowed for the identification of the item within each pair that best predicted the item cluster score. This item was selected for inclusion within the CORE-10.

The resultant scale was investigated for psychometric properties using a third independent sample ( $n = 1835$ ) of NHS primary healthcare users who had completed the CORE-OM, drawn from the same CORE national database, as well as a non-clinical sample ( $n = 553$ ) drawn from the general population who completed the

CORE-OM while participating in the Office of National Statistics Psychiatric Morbidity Follow-up Survey. In addition a sample of 114 individuals participating in the Medical Research Council Enhanced Care for Depression Trial completed the CORE-10 as an independent scale.

The CORE-10 (as an imbedded measure) demonstrated high convergent validity with the CORE-OM, using Spearman's Rho, across both the clinical ( $r = 0.94$ ) and non-clinical ( $r = 0.92$ ) population samples (Barkham et al., 2012). The imbedded measure also demonstrated high convergent validity with the Brief Symptoms Inventory ( $r = 0.75$ ), Symptoms CheckList-90-R ( $r = 0.81$ ), the Clinical Interview Schedule-R ( $r=0.74$ ), the Beck Depression Inventory I ( $r = 0.77$ ) and II ( $r = 0.76$ ) and the Beck Anxiety Inventory ( $r = 0.65$ ) (Barkham et al., 2012). Within the clinical sample who completed the CORE-10 as an independent measure, the tool demonstrated ease of readability, high internal consistency ( $\alpha = 0.90$ ) and a reliability change index of 6 (Barkham et al., 2012). The clinical cut-off point for the measure was calculated at 11. This reduced CORE-10 measure provides a valuable opportunity to explore equivalence of the tool across different language versions.

## 2. Discriminant validity

Kaplan and Saccuzzo (2009) define discriminant-related evidence for validity as evidence of low correlations between measures of unrelated constructs, however Evans et al. (2002) explain that the main purpose of the CORE-OM is to discriminate between the non-clinical population sample and the clinical population sample for which it was designed, and to measure the change achieved through psychotherapeutic treatment across the four domains of subjective wellbeing, problems or symptoms, life functioning and risk. As a result discriminant validity within the measure is evaluated through the tool's ability to discriminate between scores achieved across clinical and non-clinical population samples.

An analysis of CORE-OM mean scores generated by the UK referential data sample documented by Evans et al. (2002) demonstrated statistically significant differences between the clinical and non-clinical population sample CORE-OM mean scores across all domains and total scores with large effect sizes (Barkham et al., 2001). In

addition the CORE-OM demonstrated sensitivity to change, providing a measure of significant clinical change evident when clients' scores changed from that characteristic of a clinical population group to scores more characteristic of a non-clinical population group (Evans et al., 2002).

### 3. Convergent validity

Kaplan and Saccuzzo (2009) define convergent-related evidence for validity as evidence that examines positive correlations between measures of related constructs, achieved by either demonstrating that a tool measures the same construct as other tools used for the same purpose or demonstrates an expected relationship with another tool. Barkham et al. (2001) report that correlations of CORE-OM scores against various other established psychometric tools (28-item General Health Questionnaire; Beck Depression Inventory I and II; Beck Anxiety Inventory; Brief Symptom Inventory; Symptom Checklist-90-R; 32 item Inventory of Interpersonal Problems) showed the strongest Spearman's rho positive correlations between the CORE-OM and the Symptom Checklist-90-R (0.88) and the Beck Depression Inventories I (0.85) and II (0.81).

Further analysis across the CORE-OM domains revealed the strongest positive correlations between the Symptom Checklist-90-R and the problems or symptoms domain of the CORE-OM (0.87); and the BDI-I and the CORE-OM subjective wellbeing domain (0.77), problems and symptoms domain (0.78) and life functioning domain (0.78) (Barkham et al., 2001; Evans et al., 2000).

Subsequently Cahill et al. (2006) and Leach et al. (2006) have developed transformation tables allowing for the converting of Beck Depression Inventory I (BDI-I) scores into CORE-OM scores and vice versa. Leach et al. (2006) report that comparisons between CORE-OM and BDI-II scores are also possible using the translation tables in the BDI-II manual. In addition the CORE-OM has proved proficient in detecting levels of clinical risk, demonstrating strong positive correlations with mental healthcare practitioners' evaluations of levels of risk in a clinical sample of students attending university counselling centres (Lyne et al., 2006).

### **3.4 Influence of demographic factors**

Barkham et al. (2001) report that analysis of the original UK referential data indicated small to medium differences in CORE-OM scores across socio-demographic factors of age, sex and language use in both the clinical and non-clinical population samples, demonstrated using effect sizes and confidence intervals. Cohen's *d* was used to calculate effect size, and is defined as the difference between standardised means or means divided by their common standard deviation (Cohen, 1962), indicating the size of difference between sample means. An effect size of 0.2 is considered a small effect with an overlap between sample distributions of approximately 85%, while 0.5 is considered a medium effect and 0.8 a large effect (Cohen, 1962). An effect size of 0.4 with an estimated overlap of sample distributions of 73% is considered to demonstrate a clinically meaningful difference (Barkham et al., 2005a). Gardner and Altman (1986) and Ghaemi (2009) highlight that confidence intervals demonstrate the interval within which the results would fall 95% of the time if the study was replicated.

#### **a) Age**

Small correlations between age and CORE-OM scores were demonstrated within the original UK referential data, indicating a small but statistically significant increase in symptom scores with increased age in the non-clinical sample, and small reductions in risk and life functioning scores in relation to age within the clinical sample (Evans et al., 2002). Within age-specific groups research has investigated the performance of the CORE-OM within student population samples (Connell, Barkham & Mellor-Clark, 2007a) and older population samples above 65 years of age (Barkham, Culverwell, Spindler & Twigg, 2005a).

Connell et al. (2007a) generated normative data for the presentation of gross distress within a student population using a sample of 1109 university students from 11 UK universities who were currently engaged in psychotherapy intervention. They compared this data with a sample of 578 non-students aged between 16-24 years across 33 UK primary NHS sites, and 837 university students across 11 UK primary NHS sites. Connell et al. (2007a) noted no significant differences in levels of distress

across the samples and concluded that students presenting for treatment at university student counselling centres are struggling with the same level of distress as young adults presenting for treating at primary NHS sites in the UK.

In comparison, Barkham et al. (2005a) reported in their study of an older UK population sample comprising a non-clinical sample of 214 individuals (with a mean age of 78.5 ranging between 65-94 years) and a clinical sample of 118 individuals (with a mean age 75.1 ranging between 65-97 years) that overall mean scores were significantly lower in older population samples (65 years and upwards) across both clinical and non-clinical population samples in comparison to the original sample norms, highlighting the need for specific norms and clinical cut-off points for older population samples.

#### **b) Sex**

Comparisons between male and female scores within the original UK referential data indicated medium and statistically significant differences across all domain mean scores, except the life functioning domain, within the non-clinical sample, and smaller but statistically significant differences on the subjective wellbeing and risk domains in the clinical sample (Evans et al., 2002). Differences in CORE-OM scores between sexes were significant enough to require sex-specific referential data and clinical cut-off points initially (Evans et al., 2002).

However, subsequently Lyne et al. (2006) used completed CORE-OM questionnaires from a sample of 2140 clients referred for counselling and psychological services across the UK (590 men and 1550 women), to perform a matrix comparison across sexes. Lyne et al. (2006) demonstrated that the “two matrices might reasonably be considered homogeneous” (p.189). Supporting this conclusion Connell et al. (2007b) show no significant difference between male and female clinical cut-off scores based on a clinical sample of 10761 individuals compared with a representative sample of the general UK population generated through randomised sampling of people living in private homes across Great Britain, stratified by NHS region and socio-economic conditions. As a result the current clinical cut-off score of 10 is used for both men and women.

### c) Language

Within the original UK referential data, omissions of CORE-OM questionnaire items were understood to reflect linguistic problems in the measure, and analysis found that second-language English speakers completing the CORE-OM omitted on average 2.5 items in comparison to 0.35 omitted by first language English speakers, indicating a statistically significant difference in the manner in which first and second language English speakers completed the CORE-OM (Evans et al., 2002). This finding could suggest that the current wording of CORE-OM items needs to be simplified in order for the items to be more comprehensive to second language English speakers. However Evans et al. (2002) note that during development the CORE-OM was qualitatively piloted across a culturally diverse, multilingual sample to evaluate vocabulary choice. Instead Evans et al. (2002) suggest that while this difference did not impact on the internal consistency of the CORE-OM, it did highlight the need for translation of the CORE-OM into other languages to improve accessibility for individuals across different language groups.

#### The CORE System Trust's translating and normalising guidelines

The CORE System Trust's translating and normalising guidelines (Evans, 2008) were published in order to standardise the translation of the CORE-OM into other languages. These guidelines consist of a five step translation design that addresses both issues of translator competency and the difficulties that arise when item content is not equally translatable across language groups. Hambleton (2005) explains that the decisions made by the translation team relating to both linguistic and psychological translation choices generate judgemental evidence for the content validity of the translation. He highlights that an appropriate translation design assists the translation team in achieving semantic equivalence between the original and adapted psychometric tool versions. Flaherty et al. (1988) define semantic equivalence as the consistency of word meanings within each psychometric tool item across language versions. Sechrest, Fay and Zaidi's (1972) concepts of linguistic, idiomatic and grammatical and syntactical equivalence are particularly relevant with regards to achieving semantic equivalence.

Sechrest et al. (1972) explain that linguistic or vocabulary equivalence refers to the equivalence of word or vocabulary choices that provide the same linguistic meaning across the source and target language, while idiomatic equivalence relates to the equivalence of idiom, symbolism and metaphor use across the source and target language. Sechrest et al. (1972) define grammatical and syntactical equivalence as equivalence of comprehension and readability across the original and adapted psychometric tool versions.

Flaherty et al. (1988) also note the importance of content validity whereby the content used within each questionnaire item is relevant and meaningful within the life experiences of the target population. Sechrest et al's. (1972) experiential equivalence is particularly relevant with regards to achieving content validity in that it relates to the importance of the use of common experiences in questionnaire item content, familiar across both the source and target languages and cultural groups in order to ensure that those items are measuring the same construct cross-culturally. In addition Flaherty et al. (1988) note the importance of criterion related equivalence, or validity of questionnaire items in eliciting responses that are meaningful in light of the construct those items have been designed to measure, in the target population, as well as conceptual equivalence referring to the degree to which the questionnaire items relate meaningfully to the construct under investigation, within the target population.

The translation design is comprised of complementary translation methods that assist the translators in achieving these different forms of equivalence or validity. The CORE System Trust translating and normalising guidelines (Evans, 2008) recommend a particularly strong translation design that draws from four complementary translation methods namely forward-translation, the committee approach, back-translation and qualitative piloting. Brislin (1980) explains that the inclusion of a number of complementary translation methods compensates for the limitations of individual methods, promoting a more linguistically and conceptually equivalent translation.

During step 1 the CORE-OM is forward-translated into the target language by multiple bilingual translators, one of whom is a mental healthcare professional, one a

professional translator and one a lay person. Brislin (1970) explains that during forward translation the source text is translated into the target language by bilingual translators proficient in both the source and the target language. Hambleton (2005) highlights that forward-translation is a time-efficient translation method but limited in that it relies solely on the inferences made by the translating team regarding the equivalence of vocabulary choices. Hambleton (2005) notes that bilingual translators, as the result of their knowledge of both the source and the target language, possess contextual knowledge of both languages that allows them to make insightful assumptions about word meanings and interpretations that monolingual individuals without this contextual knowledge would not necessarily make, as a result compromising the selection of vocabulary choices.

To compensate for this idiosyncratic vocabulary selection, during step 2 of the translation design prescribed by the CORE System Trust's translating and normalising guidelines (Evans, 2008) each forward translation is reviewed during a combined meeting involving all the bilingual translators as well as a member of the CORE-OM development team in order to challenge and debate the available translation choices and select the most appropriate choice for each CORE-OM questionnaire item. The member of the CORE-OM development team holds expert skills in the CORE-OM design and is able to convey conceptual meaning about the CORE-OM questionnaire items, clarify nuances in English language use and assist the group in generating conceptually equivalent alternatives when linguistically equivalent choices are not available in the target language (Evans, 2008).

Brislin (1970) refers to this collaborative method as the committee approach, a group translation method whereby a number of bilingual translators meet together, drawing from the varied expertise of the group members, either to complete a forward translation or to review a number of forward translations that have already been completed, in order to negotiate the most appropriate translation choices. Van de Vijver (2001) and Harkness (2003) highlight that the advantage of this translation method is that individual translators are selected based on their linguistic or psychological expertise, or knowledge of the target culture and language, and working together allows for the collaboration of these various areas of expertise and viewpoints within the finalised translated version. Harkness (2003) adds that the

committee approach reduces subjective vocabulary choices made by individual translators based on idiosyncratic opinions as translators are forced to discuss and negotiate translation choices resulting in rich and varied translation options. This process improves linguistic, grammatically and syntactical as well as conceptual equivalence across the source and target language version.

Although Drennan et al. (1991) and Smit et al. (2006) highlight that one potential limitation in this method is the tendency of group members to agree with each other in order to avoid conflict within the group and thus negate valid concerns about translation choices. Steele and Edwards (2008a) point out an additional concern is that dominant group members may monopolise discussion and silence the opinions of less assertive group members, thus further compromising the challenging of translation choices. As a result the committee approach requires competent facilitation of the discussion to allow for all group members' views and opinions to be acknowledged.

Following a consensus during the committee approach the CORE System Trust's translating and normalising guidelines (Evans, 2008) prescribe that the resultant translation is back-translated into the source language by an independent bilingual translator. Brislin (1970) defines back-translation as a process whereby an independent set of bilingual translators translate the document back from the target language into the source language. Hambleton (2005) adds that the original and back-translated versions are then compared for linguistic equivalence based on the similarities evident between the two versions, allowing individuals in addition to the bilingual translators the opportunity to evaluate equivalence.

Drennan et al. (1991) explain that comparisons between the back-translation and the original source document highlight linguistic errors or translation difficulties that are then further investigated and corrected through additional forward and back-translation processes until the original and translated versions are deemed equivalent. Brislin (1970) adds that the aim of back-translation is to produce linguistically equivalent versions of the same psychometric tool across languages. Smit et al. (2006) emphasises that a further advantage of the back-translation

method in that it gives the researcher some insight into the translation process, particularly if the researcher is not proficient in the target language.

Despite these advantages Brislin (1970) highlights two potential limitations of the back-translation method. Firstly he explains that skilled translators can compensate for poor forward-translations in the target language by guessing at what these translations should mean when completing the back-translation, and thus generate misleading back-translations that do not accurately represent forward-translations, linguistically. Secondly Brislin (1970) notes that during forward-translation the translators may not consider grammatical and syntactical differences between the source and the target language, and therefore generate translated versions that appear linguistically equivalent in their back-translated forms but make no grammatical or syntactical sense in the target language.

As a result, following back-translation, the CORE System Trust's translating and normalising guidelines (Evans, 2008) prescribe a qualitative pilot of the translation on a small, diverse convenient sample of mental healthcare professionals and members of the target population. Brislin (1970) refers to this process as pretesting whereby the translation is then field-tested on members of the target population, comprising the target language and culture, before being applied in clinical settings. Brislin (1970) encourages the use of pretesting procedures to establish the clarity, readability, relevance and appropriateness of the translation.

However Steele and Edwards (2008a) caution that the quality of any translation is evident in its clinical utility within applied and research settings, and its psychometric properties, specifically measures of reliability and validity. As a result Hambleton (2005) emphasises that while pretesting proceedings provide valuable qualitative feedback about the translation they must be supplemented with statistical analyses that demonstrate the psychometric properties of the translated tool. The CORE System Trust's translating and normalising guidelines (Evans, 2008) concur and prescribe that feedback from the back-translation process and the qualitative pilot be used to finalise the translation, which is then reproduced in PDF format (with copyright placed with the CORE System Trust) and the performance of the translated version is investigated within a sample of the target population.

## Evaluation of the CORE System Trust's translating and normalising guidelines

The strength of the current CORE System Trust's translating and normalising guidelines (Evans, 2008) lies in the translation design's utilisation of a combination of translation methods which allows the design to optimise the strengths of each individual translation method (for example: forward-translation, back-translation, the committee approach, pretesting and qualitative piloting) while compensating for the limitations of these individual methods through the use of a combined design.

However the design also contains some limitations that if addressed could improve the cultural sensitivity of the translations produced as a result of implementing this design. Firstly, while the CORE System Trust's guidelines two to four are closely aligned with the translation design recommended by the World Health Organisation (WHO), developed by Sartorius and Janca (1996), the CORE System Trust's guidelines do not include Sartorius and Janca's (1996) first recommendation that the translation design begins with the selection of a bilingual team of experts who examine and consider the conceptual structure of the psychometric tool (Sartorius & Janca, 1996). This negation limits the consideration of the relevance of the construct of distress as measured by the CORE-OM, within the target population.

Byrne and Van de Vijver (2010) emphasise the need to establish whether a tool under consideration for translation will be able to measure the construct it was designed to investigate originally, meaningfully within the target population. As Van de Vijver and Leung (1997) highlight, the items selected to measure the construct in the source population may only refer to a narrow domain that is relevant to the construct in that context, while negating other domains that may be more meaningful in other cultural contexts.

The inclusion of this initial step within the CORE System Trust's guidelines would draw the researcher's attention to the need to consider the overlap between the construct of gross distress as measured by the CORE-OM, within the target population the tool is being considered for translation into, and the original population the tool was developed for use within (Hambleton, 2005). This investigation would allow the researcher to ascertain the degree of adaptation necessary in order to

develop a valid language version of the tool in order to ensure adequate coverage of the most important domains that define that construct within the target population (Van de Vijver, 2001).

Next Sartorius and Janca's (1996) translation design prescribes that the tool is forward-translated into the target language by a group of bilingual translators who vary across age, sex, education and class. This step is commensurate with the first step within the CORE System Trust's translating and normalising guidelines (Evans, 2008). The translations are then reviewed by the expert panel, as well as by a group of individuals representative of the target population (Sartorius & Janca, 1996), similar to the CORE System Trust's second step involving the committee approach (Evans, 2008). The translation is back-translated into the source language and presented for final review by the expert panel in conjunction with information generated during the review conducted by members of the target population. These steps are again commensurate with steps 3 and 4 of the CORE System Trust's translating and normalising guidelines (Evans, 2008).

However an added requirement of the CORE System Trust's translating and normalising guidelines (Evans, 2008) includes the investigation of the performance of the translated tool within the target population in comparison to psychometric data generated by the original CORE-OM using UK referential data, in order to establish its psychometric properties as well as to provide initial normative data for the measure.

For example Palmieri et al. (2009) document the translation of the CORE-OM into Italian using CORE System Trust's translating and normalising guidelines (Evans, 2008), and provide evidence of the validity of the translation through comparison of psychometric data generated using the translated CORE-OM Italian version in comparison to the original UK referential data documented by Evans et al. (2002). The Italian samples included a clinical sample of 68 inpatients and 579 outpatients drawn from 17 psychotherapeutic settings across Italy and a non-clinical convenience sample of Italian university students and staff comprising 263 participants. Palmieri et al. (2009) explain that the Italian version showed "respectable basic psychometric parameters of internal consistency, discriminant

and convergent validity”, while comparison between the Italian clinical and non-clinical population samples revealed large and statistically significant differences.

Elfstrom et al. (2012) noted similar findings during the translation of the CORE-OM into Swedish using CORE System Trust’s translating and normalising guidelines (Evans, 2008). Elfstrom et al’s. (2012) results were drawn from a clinical sample of 619 individuals making use of primary healthcare sites and a non-clinical sample of 229 psychology students at the University of Gothenburg. Like the Italian version, the CORE-OM Swedish version demonstrated acceptable psychometric properties of internal consistency, test-retest reliability and convergent validity, while large statistically significant differences were demonstrated between the clinical and non-clinical samples (Elfstrom et al. 2012). Although there were marked differences between Swedish and UK population CORE-OM mean scores. Additional translations of the CORE-OM have been published, but these have not been compliant with the CORE System Trust’s translating and normalising guidelines and have therefore not been included in this discussion.

However Byrne and Van de Vijver (2010) note that a comparison of mean differences across two different cultural groups, while a common empirical method in current cross-cultural research, makes the assumption that the same underlying psychological construct is being measured by the psychometric tool, in the same way, across the two groups. Byrne and Van de Vijver (2010) explain that as a result there is an assumption of measurement equivalence defined as a similarity in factor structures, factor loadings, item intercepts and perceived item content. In addition there is an assumption of structural equivalence defined as a similarity in dimensionality and relationships amongst construct dimensions, across the original and translated psychometric measures (Byrne & Van de Vijver, 2010). However Byrne et al. (2009) emphasise that it is impossible to assume that a score on an original and translated psychometric tool has the same meaning or can be compared until the dimensional structure of the construct being investigated, as well as the related questionnaire items have been proven equivalent across the two measures.

No investigation of equivalence is currently prescribed by the CORE System Trust’s translating and normalising guidelines (Evans, 2008). This is because the original

CORE-OM was developed as a gross measure of distress comprised of a broad selection of items describing various experiences of distress. However the recent reduction of the scale into the CORE-10, with far fewer items drawn predominantly from the problems or symptoms and life functioning domains, makes the investigation of equivalence across the original and translated tool versions easier, with the use of fairly small samples, using structural equation modeling (Byrne & Van de Vijver, 2010).

A final limitation within the current CORE System Trust guidelines is the lack of administrative and score interpretation guidelines that assist clinicians in the administration or scoring of the translated CORE-OM version. This would be a necessary addition to the current guidelines that would improve the culture sensitive administration and score interpretation of translated CORE-OM versions. Addressing these limitations within the current CORE System Trust's translating and normalising guidelines (Evans, 2008) would improve the culture-sensitive validity of the translations produced by these guidelines, therefore improving the clinical utility of the CORE-OM within other cultural contexts.

### **3.5 Application within UK and South African contexts**

The CORE-OM was originally designed to meet the need for a standardised outcome measure within the UK NHS that could provide effectiveness data with regards to treatment outcome while supplementing clinical assessment (Evans et al., 2002). Subsequent applications of the CORE-OM in clinical settings have provided evidence for its clinical utility within UK primary and secondary healthcare contexts. Drawing from this research, potential applications within the South African context become evident.

#### **a) Standardised therapeutic outcome measure**

Within UK therapeutic practice the CORE-OM has shown utility in generating practice-based evidence for applied therapeutic approaches, providing evidence for the effectiveness of certain therapeutic approaches in improving patient care in practice settings, generated by practitioners (Barkham et al., 2006). For example,

Paley et al. (2008) used the CORE-OM questionnaire pre and post treatment, in combination with the Beck Depression Inventory II and the Inventory of Interpersonal Problems-32, to evaluate the effectiveness of psychodynamic-interpersonal therapy in secondary and tertiary mental health care facilities across the UK, using a small sample of 62 clients, each attending between 16-25 sessions. With the reduction of the scale into the CORE-10 the measure is now faster to administer and score, allowing for weekly administrations and evaluations of changes in general distress (Barkham et al., 2012).

However within the South African mental healthcare context, Kagee (2006) emphasises the current “lack of emphasis on empirically validated procedures” within professional psychology training programmes, continued professional development courses and clinical practice (p.234). He highlights the considerable need for psychotherapy outcome measures and related outcomes research within the South African context and questions whether South African clinicians should ethically continue to engage in time-consuming and financially expensive psychotherapy interventions without proof of their effectiveness or cultural relevance. Kagee (2006) emphasises that clinical judgement, intuition and client reports during and post-treatment of the effectiveness of interventions are not sufficient indicators of therapeutic outcome, and that empirical evidence is required in order to guide the selection and implementation of appropriate interventions within the South African context. Swartz (2006) agrees explaining the need for empirical evidence to substantiate the science of psychotherapy interventions.

The availability of the CORE-OM and its reduced CORE-10 version as outcome measures in their original English and translated African language versions, like Xhosa, would allow clinicians to begin generating practice-based evidence to inform treatment within the South African context. This feedback would be valuable in quantifying the degree of therapeutic change achieved a) by individual clinicians using different languages, like Xhosa, b) applying specific therapeutic approaches c) with particular clients or population demographics and d) within different healthcare contexts, while contributing internationally with regards to the development of more effective interventions. Although this thesis focuses primarily on the translation of the CORE-OM into Xhosa for use within university student counselling centres, following

this initial research the tool could be further adapted for use in other primary and secondary mental healthcare contexts allowing for outcomes research across mental healthcare contexts.

However Mullin and Barkham (2006) caution that when establishing outcomes high attrition rates are generally reported, with on average only one in every four clients completing both the pre and post treatment CORE-OM questionnaire. This high attrition rate results in a particular type of client, typically highly motivated and committed to the therapy process, being represented statistically. Mullin and Barkham (2006) emphasise the need for this sample bias to be acknowledged and appropriately considered when interpreting outcome research findings.

#### **b) Benchmarking psychotherapy treatments**

Drawing from the UK CORE national research databases, comparative benchmarking has been implemented across the UK NHS, allowing individual NHS sites to compare their service profiles and evaluate their performance in accordance with similar service contexts nationally (Evans et al., 2006). For example, Barkham et al. (2001) used this data to establish service profiles for UK secondary healthcare services using a sample of 224 clients who had completed CORE-OM questionnaires pre and post treatment. Mullin, Barkham, Mothersole, Bewick and Kinder (2006) later used the CORE national databases to develop recovery and improvement benchmarks for psychological therapies being used in routine clinical practice in primary healthcare centres across the NHS.

Within the current South African mental healthcare system comparative benchmarking holds the possibility for providing statistical motivation for government funding of psychotherapy services and improved medical aid scheme cover of psychotherapeutic treatment benefits. In addition, with the imminent introduction of a national health insurance service (Department of Health, 2011) comparative benchmarking could assist in estimating the necessary number of psychotherapy sessions required at primary healthcare level and the necessary service site allocations. While within South African training facilities for mental healthcare professionals the possibility of measuring the performance of training and entry level

psychologists and their effectiveness in psychotherapy treatment could be of significant value in their professional development.

However Mellor-Clark, Barkham, Mothersole, McInnes and Evans (2006) warn that benchmarks must be interpreted with caution and are most usefully applied as trends rather than static assessments. The influence of contextual factors such as differences within client profiles or populations, referral processes that dictate the severity of presenting problems referred to particular NHS sites, and the availability of alternative referral resources can significantly impact on figures generated within specific NHS sites or practitioner statistics. Mellor-Clark et al. (2006) further highlight that while benchmarks provide useful guidelines for practitioners using brief interventions of between 6-12 sessions on a comparable client population group, practitioners engaged in longer-term interventions with clients experiencing more severe levels of psychological distress would find such benchmarks far less applicable.

### **c) Clinical assessment tool**

During the clinical interview the CORE-OM has demonstrated its clinical utility in complementing the assessment process by providing clinicians with an indication of the level of severity of distress with which individuals present. Barkham et al. (2006) have generated guidelines for the interpretation of CORE-OM scores to establish the level of severity of distress the individual is presenting with and whether scores fall within a clinical population profile, in order to assist clinicians in evaluating suitability for psychotherapy or the need for subsequent referral to more appropriate support resources.

The CORE-OM has also demonstrated its ability to flag the potential risk that clients pose towards themselves and others. For example a research study conducted by Bewick, McBride and Barkham (2006) examining the difference between clinician and client reported levels of risk, indicates that out of a clinical sample of 25338 UK NHS psychological therapies and counselling service users, only 10% were assessed by clinicians as being at risk during interviews, while 44% of the same sample reported perceived risk to themselves or others when completing the CORE-

OM as a self-report measure. These results suggest that the CORE-OM was more effective in identifying risk than clinician assessments alone. While Bewick et al. (2006) acknowledge that these results indicate different conceptual understandings of clinical risk, and explain that the increased incidents of risk reported by the CORE-OM may be inflated; the results also demonstrate the CORE-OM's usefulness as a self-reporting risk assessment tool in flagging potential risk items that require further exploration.

Within South African mental healthcare contexts the CORE-OM offers valuable assessment information that could be used to guide assessment and referral processes. The availability of the CORE-OM in African languages would assist in improving access to mental healthcare services for African language speakers in that the CORE-OM's ability to provide African language speaking clients and psychologists with conceptually equivalent affective or emotional terminology, in that African language, will assist both the client and therapist in conceptualising the client's distress in this western psychiatric model, thus improving the utilisation of psychotherapy, if the client chooses to access this form of intervention. However Aveline (2006) cautions that because the CORE-OM is a self-reported questionnaire with a tendency for clients to over- or under-estimate symptom severity, the subjective nature of the questionnaire must be taken into consideration by clinicians when using it as a clinical assessment tool.

## **CONCLUSION**

The CORE-OM, drawing theoretically from the phase model of psychotherapy outcome, has demonstrated acceptable usability and reliability in terms of internal consistency, test-retest reliability and stability of CORE-OM scores across time within UK clinical and non-clinical samples. In addition the CORE-OM has demonstrated both discriminant and convergent validity. Analyses of the UK referential data revealed no significant differences between student and non-student population samples with regards to CORE-OM mean scores indicating good generalisability of results achieved in UK student samples. In addition no significant differences were demonstrated across sexes, while additional referential data were shown to be necessary in individuals 65 years and older. Significant differences were

demonstrated between the number of omissions of questionnaire items on the CORE-OM between first and second language English speakers within UK samples completing the questionnaire indicating the possible benefit of translating the CORE-OM into other languages for use within populations who are not proficient in English.

The CORE-OM has demonstrated its ability to function as a standardised outcome measure for generating practice-based evidence and treatment benchmarks within UK NHS sites, as well as its utility as a clinical assessment tool. These applications hold valuable potential for the South African context in measuring the effectiveness of psychotherapy interventions, benchmarking interventions and improving clinical assessment, particularly if these applications could be used to evaluate and improve psychotherapy interventions conducted in African languages like Xhosa. However in order for South Africa to benefit from this potential utility the CORE-OM must be applicable within the South African context which means the measure requires culture sensitive translation into the official South African languages like Xhosa.

The CORE System Trust's translating and normalising guidelines (Evans, 2008) prescribe a five-stage translation design that standardises the translation of the CORE-OM into other languages. However the current design holds some limitations. Firstly it negates consideration of the overlap of the construct of gross distress, as measured by the CORE-OM, between the target population the tool is being considered for translation into, and the original UK population the tool was designed for use within. As a result it is not possible to accurately conclude that the CORE-OM is measuring distress in a meaningful way within the target population.

Secondly due to the challenges in demonstrating the psychometric structure of the CORE-OM it is currently difficult to investigate equivalence of the measure across the original and translated language versions of the tool. However the recent reduction of the measure into a 10-item scale allows for the investigation of equivalence of this tool across the original and adapted language versions using fairly small samples. Finally the current CORE System Trust's translating and normalising guidelines (Evans, 2008) lack any administrative or score interpretation guidelines to assist clinicians in the administration and scoring of the translated CORE-OM version.

Over the past decade International Test Commission (ITC) Guidelines for Test Adaptation have been introduced and applied internationally as a more culturally sensitive approach for preparing psychometric tools for valid cross cultural and multilingual use that goes beyond linguistic translation (Hambleton, 2005). These ITC guidelines are presented in the following chapter and proposed as a supplement to the current CORE System Trust's translating and normalising guidelines (Evans, 2008) in order to address the above mentioned limitations and therefore provide an improved method of adapting the CORE-OM into a valid Xhosa measure of distress for use within South African first language Xhosa speaking university student population samples.

## **CHAPTER 4: LITERATURE REVIEW – PSYCHOMETRIC TOOL ADAPTATION** **USING INTERNATIONAL TEST COMMISSION (ITC) GUIDELINES**

Hambleton (2005) explains that the process of psychometric tool translation involves the translation of culturally, psychologically and linguistically equivalent concepts, words and expressions across different languages for valid use across different cultural groups. This process requires the use of a translation design that typically includes a combination of translation methods, like the design prescribed by the CORE System Trust translating and normalising guidelines (Evans, 2008). However the act of translating a psychometric tool from one language into another draws theoretically from a universalist approach to understanding psychological constructs cross-culturally. Norenzayan and Heine (2005) explain that universalism conceptualises fundamental, core psychological mechanisms as universal across humankind as a species. Psychological constructs are therefore considered relevant and applicable irrespective of cultural context (Matsumoto & Juang, 2008) and thus generalisable across different contexts (Shirayev & Levy, 2010), although they may manifest or be expressed and labelled in culturally specific and unique ways (Swartz, 1998).

Swartz (1998) highlights that the advantage of a universalist conceptualisation lies in its ability to generate evidence of a core cluster of symptoms of psychological distress that are representative of a particular psychological disorder cross-culturally. In so doing universalism identifies commonalities or similarities across cultural groups allowing for the identification of universal manifestations of psychological distress and mental illness that can be measured, treated and compared with the assistance of translated psychometric tools (Smit et al., 2006). In support of this argument Steele and Edwards (2008b) suggest that the successful translation of psychometric tools like the Beck Depression Inventory II (BDI-II), Beck Anxiety Inventory (BAI) and the Beck Hopelessness Scales (BHS) from English into Xhosa, demonstrated through acceptable psychometric properties, provides evidence of a broad set of observable anxiety and depressive symptoms that are consistent across South African English and Xhosa speaking populations.

Although De Jong and Van Ommeren (2002) argue that while large-scale epidemiological studies have identified universal patterns of psychiatric symptoms cross-culturally that suggest common biological mechanisms, discrepancies in global prevalence rates of psychiatric disorders suggest variations in the expression of psychiatric disorders cross-culturally, possibly due to the different experiences and expressions of psychological distress across social and cultural contexts, and language use. Essentially the cultural context and discourse supported by the language of that culture determines how distress is conceptualised, described and understood. De Jong and Van Ommeren's (2002) observations emphasise the significant influence of culture on the conceptualisation and manifestation of psychological distress. In support of De Jong and Van Ommeren's (2002) observations Kleinman (1977, 1987) highlights that the universalist approach draws predominantly from western conceptualisations of psychological distress and core syndromes of mental illness, imposing these conceptualisations onto other cultural contexts and in so doing negating alternative conceptualisations and manifestations of psychological distress. Kleinman (1987) refers to this as the category fallacy.

Drennan et al. (1991) explain that the western psychiatric model imposes the assumptions that a) disorders are comprised of specific sets of signs and symptoms that are diagnosable; b) different diagnostic categories require specific treatment modalities; and c) correct diagnosis leads to appropriate treatment. They note that these assumptions form the foundation from which self-report inventories, symptom check-lists and structured diagnostic interviews have been developed and now shape epidemiological research. For example Swartz (1998) highlights that while the Diagnostic and Statistical Manual of Mental Disorders (Fourth Edition), or DSM-IV aimed to create a universal system for identifying and guiding the treatment of mental disorders, it remains a western product developed and researched within the context of Northern America and Europe. The signs and symptoms included in these diagnoses and conceptualisations of distress limit the way distress is defined across other cultural contexts, thereby ignoring more culturally relevant conceptualisations (Kleinman, 1987).

Swartz (1998) adds that the western psychiatric practice of communicating psychological distress by identifying and naming emotional states such as

depression and anxiety is culturally specific and that within other cultural contexts and languages, like Xhosa, alternative forms of communicating distress, such as somatisation defined as the reporting of physical bodily symptoms without biomedical causes, are common. In addition the discourse used to speak about distress is supported in different ways across different language groups. For example Drennan et al. (1991), Smit et al. (2006) and Steele and Edwards (2008a) all identified difficulties in finding linguistically equivalent words within the Xhosa language for English descriptions and conceptualisations of emotional distress. As a result the act of translating psychometric tools that have been developed from western psychiatric models which conceptualise and measure the manifestation of psychological distress exclusively in terms of emotional symptoms, negating other dominant manifestations of distress or how language supports a specific discourse about distress, compromises the accurate evaluation of a psychological construct cross-culturally.

De Jong and Van Ommeren (2002) emphasise that the lack of acknowledgement of the cultural and historical contexts within which these tools are developed and the resultant cultural bias inherent in these tools, removes the need for re-investigation and re-ascertaining of the construct validity of these tools within other cultural contexts. Bias within this context is defined by Van de Vijver and Poortinga (2005) as “nuisance factors” or “unwanted and undesirable sources of variance” between cultural groups compromising the validity of a psychometric tool across different language versions (p.41).

De Jong and Van Ommeren (2002) highlight the significant need for investigation of the construct validity of psychometric tool translations in order to ensure cultural relevance. For this reason Van de Vijver and Hambleton (1996) emphasise that the implementation of a psychometric tool cross-culturally and across different languages “involves more than simply producing text in another language, administering the translated instrument and comparing the results” (p.89). It requires a thorough evaluation of the degree of cultural bias inherent within the original tool and the degree of alteration required in order for that tool to be valid within the target population and culture. Therefore Hambleton (2005) recommends a process of psychometric tool adaptation drawing from ITC guidelines that carefully consider the

cultural bias inherent in the original and adapted versions of the psychometric tool being adapted in order to account for that bias as much as possible and therefore develop the most valid language adaptation of the tool possible.

#### **4.1 From psychometric tool translation to psychometric tool adaptation**

Hambleton and Patsula (2000) define psychometric tool adaptation as the process whereby a psychometrically sound tool that has been constructed and developed to measure a psychological construct in one language for a particular population and cultural group, is adapted for use in a different language and cultural group to measure that same psychological construct. The aim is to generate an adapted version that demonstrates comparable psychometric properties to the original in terms of both validity and reliability. Hambleton (2005) explains that ITC guidelines have been developed to guide researchers through the adaptation process and that psychometric tool translation occurs as one step within the overall adaptation.

The process of psychometric tool adaptation, while still aligned theoretically with the universalist approach emphasises the influence of culture on the conceptualisation and manifestation of psychological distress. Culture within this context is defined by Swartz (1998) as common social guidelines shared by a group of individuals relating to how they perceive the world, experience it emotionally and react to it behaviourally. Kleinman (2004) adds that culture is “a process whereby ordinary activities acquire emotional and moral meaning” including habits, physiological reactions, interpretations of situations and experiences, expectations regarding interpersonal relationships, religious practices and personal and collective identities (p.952). Hong (2009) highlights that the individual members of a culture are likely to be interconnected in terms of race, ethnicity or nationality, and that these members pass down their shared, collective knowledge about the world, across generations using tradition, art, symbolism and language.

Matsumoto and Juang (2008) emphasise that this collective knowledge is fluid and influenced by ecological factors such as the geography, climate and the natural resources that a culture has access to; social factors such as the density of the population of the culture, its political governance, history and dominant religious

beliefs; and biological factors that influence common and dominant temperaments and personality traits within that culture. Because these factors are often shared by individuals who reside in the same geographical region, an individual's country of origin is commonly used to denote their culture (Hong, 2009). However Van de Vijver and Leung (2000) caution that within any particular country made up of individuals that share a common nationality, differences exist with regards to social, political, economic, educational and language factors that influence individual cultural identities. Patel (2001) adds that due to globalisation individuals are exposed to multiple cultural groups and tend to integrate across cultures, deciding to what extent they wish to incorporate particular cultural beliefs and practices within their daily lives. South Africa's multicultural, multilingual population is a prime example.

In accordance with Kleinman's (1977) conceptualisation of disease and illness, an individual's cultural context will influence that person's individual explanatory model of illness or distress and shape how that individual attempts to alleviate that distress. Within the Xhosa culture individuals have traditionally been raised within the philosophy of Ubuntu. Louw (2001, pp.15) explains that the Ubuntu philosophy conceptualises the individual as "a person through other persons". Individuals are defined in terms of the social relationships that govern their lives, and are therefore dependent on relationships with others in order to grow as individuals (Laher, 2008). As a result Ubuntu emphasises an attitude of "reverence, respect, sympathy, tolerance, loyalty, courtesy, patience, generosity, hospitality and cooperativeness", whereby an individual's judgements, decisions and emotions within relationships with others reflect one's character (Laher, 2008, pp. 78). This underlying philosophy shapes both the cultural beliefs of the society as well as the language used to conceptual and describe experiences within this society.

In addition Markus and Kitayama (1991) highlight that underlying cultural philosophies of a society influence the conceptualisation of self, others and their interconnectedness. Markus and Kitayama (1991) explain that conceptualisations of self exist along a continuum of independence and interdependence, where independent conceptualisations of self are associated with individual, unique attributes of the individual that can be separated from the larger context, while interdependent conceptualisations of self focus on the self in relation to others, as is

the case with the Xhosa culture and underlying Ubuntu philosophy. These different conceptualisations of self have implications for how cognitions, emotions and motivations are experienced. For example Markus and Kitayama (1991) explain that independent self conceptualisations promote autonomy and independence whereby emotional regulation focuses on positive emotions elicited through attaining autonomy, while interdependent conceptualisations of self promote inter-relatedness whereby emotional regulation focuses on positive emotions elicited through harmony in interpersonal relationships. The language of a culture and society develops in order to support these culture-specific conceptualisations and descriptions of experiences (Patel, 2001).

Westermeyer and Janca (1997) agree, adding that how individuals describe psychological distress is also influenced by cultural perceptions about the acceptability of symptoms. Somatic symptoms may be more culturally acceptable in one context while emotional or affective symptoms may be considered more acceptable in others. Furthermore they note that language and its related vocabulary and terminology influences the way in which psychological distress is communicated verbally, while nonverbal communication customs and interpersonal styles influence the way in which the topic is addressed, and the meaning or relevance that is attached to it. These communication styles have further implications for how psychological distress is conceptualised and therefore communicated cross-culturally. As a result when preparing psychometric tools for cross-cultural use it is imperative that cultural bias is carefully considered throughout the adaptation process.

Van de Vijver (2001) adds that the degree of bias inherent in a psychometric tool originally influences the degree of adaption needed in order to make that tool cross-culturally valid and applicable. Van de Vijver and Poortinga (2005) explain that in instances where psychometric tools demonstrate minimal bias cross-culturally, the adaptation of the original psychometric tool version into the target language results in minimal changes to the original tool. However when bias is high the psychometric tool requires greater adaptation in the target language in order to ensure its relevance and validity.

## **4.2 The International Test Commission (ITC) guidelines**

The development of a set of standardised guidelines for the adaptation of psychometric tools was initiated by the International Test Commission (ITC) in 1992 in an effort to emphasise an awareness of cultural bias in psychometric tool adaptation, and in so doing to reduce bias and improve the validity of adapted psychometric tools across language and cultural groups (Bartram, 2001). The guidelines were developed by a team of 12 psychologists representing the International Association for Cross-Cultural Psychology, International Association of Applied Psychology, International Association for the Evaluation of Educational Achievement, International Language Testing Association, International Union of Psychological Science, European Association of Psychological Assessment and the European Test Publishers Group (Hambleton, 2001). In 1996 the guidelines were approved for distribution and published to encourage standardised, international, ethical, best practice in the area of cross cultural psychometric tool adaptation (Van de Vijver & Hambleton, 1996).

The International Test Commission (ITC) Guidelines for Test Adaptation were subsequently critically evaluated by Tanzer and Sim (1999) who analysed each guideline with respect to its underlying guiding principle, factors being addressed by the guideline, components of the psychometric tool each guideline targeted, the action required by the guideline, who would initiate the action and what skills that person would require in fulfilling the action. Following this analysis additional changes were recommended to assist in clarity and comprehension of the guidelines. The ITC guidelines were concurrently field tested by Hambleton, Yu and Slater (1999) to examine the extent of their practical application. During this field test ITC guidelines were reportedly successfully applied in adapting a US Grade 8 Mathematics National Assessment of Education Progress from English into Chinese. Hambleton et al. (1999) concluded that the guidelines allowed for critical review and identification of problematic aspects of the original test format during the adaptation.

While Hambleton et al's. (1999) field test was based on a scholastic assessment tool ITC guidelines were developed to assist in the adaptation of a wide variety of psychometric tools and hold valuable application for the adaptation of clinical

outcome measures like the CORE-OM. The discussion that follows outlines each ITC guideline and evaluates the degree to which the current CORE System Trust translating and normalising guidelines (Evans, 2008) incorporate these recommendations. The discussion highlights limitations within the current CORE guidelines and suggested supplements that could align these guidelines more closely with ITC recommendations in order to improve the quality of the resultant CORE-OM translations.

The ITC guidelines comprise of 22 recommendations grouped across four areas namely 1) 'context', 2) 'test development and adaptation', 3) 'administration', and 4) 'documentation and score interpretations' (International Test Commission, 2010). Each guideline is accompanied by a rationale or explanation for inclusion as well as practical steps needed to meet the goals of the guideline and common errors to be aware of during practical implementation (Hambleton, 2005).

#### **a) Context**

The first ITC area, labelled 'Context', examines the cultural context within which the psychometric tool adaptation takes places (Bartram, 2001) and focuses on establishing the degree of construct bias within the original tool targeted for adaptation, as well as the equivalence of the psychometric construct being measured by the tool across the source and target population (Hambleton, 2001). Guidelines within this area are labelled C1-C2 where C refers to 'Context'.

Construct bias occurs when a construct is not identical across cultural contexts, as a result of a lack of overlap in the validity of the behaviours used to measure that construct across populations (Van de Vijver & Leung, 1997). Van de Vijver and Hambleton (1996) define construct bias as nuisance factors that impact on the generalisability or overlap of the psychological construct being measured, within the population the psychometric tool was originally developed for use within and the new target population.

While Van de Vijver and Leung (1997) define equivalence as a concept related to measurement, indicating the degree of meaningful comparison of scores across

different cultural or language groups. Equivalence is investigated across three levels. Firstly construct equivalence investigates whether the construct the psychometric tool is evaluating, is the same across two different cultural contexts (Van de Vijver & Leung, 1997). Measurement equivalence refers to the extent to which the measurement scales of a measure are the same across cultural groups, while scalar equivalence refers to full score comparability (Van de Vijver & Leung, 1997). Therefore construct equivalence is the degree to which the procedures and measurement instruments used to evaluate a construct cross-culturally are measuring the same construct within the source and target populations (Van de Vijver & Poortinga, 2005). The concept of construct equivalence is very similar to Flaherty et al.'s (1988) conceptual validity.

The ITC include two guidelines that require consideration when investigating construct bias and equivalence.

C1: "The effects of cultural differences that are not important to the main purposes of the study should be minimised to the extent possible" (Hambleton, 2005, p.25).

The first ITC guideline recommends that any psychometric tool being considered for adaptation be evaluated for irrelevant culture-specific factors that can be removed or minimised in order to improve the applicability of the tool cross-culturally and therefore reduce unnecessary construct bias (Hambleton, 2005). Van de Vijver and Tanzer (2004) suggest that researchers engage in a process of cultural decentring whereby the original psychometric tool is qualitatively investigated for construct bias within the target population, and words and concepts specific to the source language and population are identified within the original psychometric tool version and removed or replaced with more generic words and concepts that make the measure more generalisable across other cultural contexts. By identifying words, phrases or concepts that prove problematic in the original psychometric tool version, within the target population, researchers are able to introduce simpler, clearer vocabulary that reduced construct bias and allows for improved transportability and applicability of the tool when adapted into a different language version

Current CORE System Trust translating and normalising guidelines (Evans, 2008) do not prescribe an initial investigation of construct bias of the original CORE-OM English version in the target population before adaptation. However a review of research publications describing the development and piloting of the CORE-OM reveals that the CORE-OM developers actively sought to reduce construct bias and promote cultural decentring of the original questionnaire items with the hope of improving ease of translation of the tool later on. Both Evans et al. (2000) and Barkham et al. (2001) document the design and piloting processes involved in the CORE-OM's development, which included the targeting of UK mental health care workers belonging to ethnic minority groups, and UK multicultural mental health service developers, specifically to gain qualitative feedback relating to the appropriateness of word, phrase and concept choices within the original CORE-OM English version in order to reduce idiomatic language confusion and consider cross-cultural differences in the representation of mental health problems through different discourses and descriptions.

A review of research publications describing the use of the CORE-OM in its translated Italian (Palmieri et al., 2009) and Swedish (Elfstrom et al., 2012) versions indicates the success of this initial cultural decentring process engaged in by the CORE-OM developers. Although the initial decentring process conducted during the development of the CORE-OM may not be sufficient for all target languages and population groups. As a result a qualitative investigation of the construct bias inherent within the CORE-OM English version as identified by members of the target population is recommended as a supplement to current CORE System Trust translating and normalising guidelines (Evans, 2008).

C2: "The amount of overlap in the construct measured by the [psychometric tool] in the population of interest should be assessed" (Hambleton, 2005, p.25).

The second ITC guideline investigates the extent to which the definition of the psychological construct being evaluated by the psychometric tool in question, and the behaviours used to measure that construct are relevant and meaningful within both the source and target populations (Hambleton, 2005). When construct

equivalence is high and the construct under investigation demonstrates relevance and transportability within the target population, the adaptation of that psychometric tool for cross-cultural use is considered highly relevant and appropriate (Van de Vijver & Poortinga, 2005).

The CORE-OM was developed to measure the psychological construct of gross psychological distress within a UK population (Evans et al., 2002). The questionnaire was formulated in English, the dominant language in the UK, and draws from a model that conceptualises changes in distress through the use of measurable symptoms in the form of core outcomes of subjective wellbeing, problems or symptoms and life functioning in accordance with the phase model of psychotherapy outcome (Howard et al., 1993), as well as a risk domain. These outcomes are operationalised into 34 questionnaire items that draw predominantly from affective or emotional terminology.

However in order for the CORE-OM to be clinically relevant and applicable within a different cultural context and more specifically a different language, gross psychological distress as a psychological construct, the core outcomes used to measure it, and the emotional or affective terminology comprising its questionnaire items must demonstrate relevance and applicability within the target population. As a result it is necessary to investigate the construct equivalence or degree of overlap with regards to the CORE-OM's conceptualisation and measurement of 'gross psychological distress', across the original UK population the tool was developed for use within, and the target population and language group it is intended for adaption into.

In order to investigate the degree of overlap of the construct across the original and target population, Hambelton (2005) and Van de Vijver and Leung (1997) recommend a qualitative piloting process whereby individuals from the target language are asked to comment on their experiences of the construct under investigation, how this construct manifests and is spoken about, and what would be meaningful ways of measuring this construct within that target population. In addition individuals are asked to give feedback about the relevance and meaningfulness of each questionnaire item within the tool targeted for adaptation. For example,

individuals are asked to comment on whether the discourse used to describe and investigate the construct is applicable and transportable to the target language, or whether this discourse requires adaptation in order for the construct to be more meaningfully investigated within the target language.

While the CORE System Trust translating and normalising guidelines prescribe a qualitative piloting process as part of the translation design, the guidelines do not require a qualitative investigation of the overlap of the construct across the original UK and target language or population before adaptation begins. However as highlighted by Van de Vijver (2001) this process determines the extent of adaptation required in order to produce a valid language version of that tool, and as a result is recommended as a supplement to current CORE System Trust translating and normalising guidelines (Evans, 2008).

In addition Van de Vijver and Tanzer (2004) recommend the use of evidence of convergent validity when examining the construct equivalence of psychometric measures across cultural contexts. Zumbo (1999) explains that convergent validity can be demonstrated in comparison to a 'gold standard'. The original CORE-OM English version has demonstrated sound psychometric properties drawn from UK referential data samples containing a substantial student population component (Evans et al., 2002). In addition Connell et al. (2007a) have produced UK university student referential data. This psychometric data could be used as a 'golden standard' against which the reliability and validity of the tool, in its original English version, could be evaluated in multilingual contexts. As a result a quantitative evaluation of construct equivalence can be conducted. The referential data could later be used in order to establish equivalence between CORE English and adapted language versions, allowing for score comparison across versions within the target populations.

Current CORE System Trust translating and normalising guidelines (Evans, 2008) negate the consideration of construct equivalence before adaptation, and therefore do not ensure that the researcher thoroughly consider the extent to which the CORE-OM is measuring the construct of gross distress within the target population. However this step is fundamental in determining the degree of adaptation of the tool

necessary in order for the measure to be valid within the target population (Van de Vijver & Leung, 1997). In addition it provides the referential data necessary to later establish equivalence between CORE language versions. As a result a quantitative investigation of the construct equivalence of CORE-OM English version within the target population is recommended as a further supplement to current CORE System Trust translating and normalising guidelines (Evans, 2008).

#### **b) Test development and adaptation**

After establishing the construct equivalence of the tool being considered for adaptation, and the degree of adaptation necessary in order to develop a valid language version, the 'Test development and adaptation' area of the ITC guidelines provide the researcher with guidelines relating to the methodological and technical elements involved in the process of adapting a psychometric tool for use within a different population, language and cultural group (Bartram, 2001; Hambleton, 2005). This area addresses issues of both method and item bias and provides the researcher with guidelines to assist in reducing these forms of bias during psychometric tool adaptation. Guidelines within this area are labelled D1-D10 where D refers to 'Development and adaptation'.

Van de Vijver and Leung (1997) and Sireci, Patsula and Hambleton (2005) explain that method bias includes instrument bias, administration bias and sample bias. Instrument bias occurs when language, item content, answer formats and psychometric tool designs are inappropriate or unfamiliar within the target population, affecting the way in which adapted psychometric tool versions are responded to (Van de Vijver & Leung, 1997). Administration bias occurs when confusing psychometric tool instructions and non-standardised administrator-examinee interactions compromise the validity of a tool cross-culturally, while sample bias occurs when significant differences in demographics such as age, sex, level of education and socio-economic status occur between samples across language and cultural groups, compromising cross-cultural comparisons (Van de Vijver & Leung, 1997).

Item bias is defined by Tanzer and Sim (1999) and Van de Vijver and Tanzer (2004) as item content that is not representative of the same behaviours or characteristics being measured, across different language and cultural groups. As a result item bias relates to the cross-cultural appropriateness of questionnaire items and the conceptual accuracy of language used within these items across languages (Van de Vijver & Hambleton, 1996). Method and item bias can be uniform, influencing all scores to the same degree, and non-uniform where bias influences individual scores differently (Van de Vijver & Leung, 1997).

The area of 'test development and adaptation' includes ten ITC guidelines.

D1: "[Psychometric tool] developers/publishers should ensure that the adaptation process takes full account of linguistic and cultural differences in the intended populations" (Hambleton, 2005, p.26).

The first guideline acknowledges that the source language of the population the psychometric tool was originally developed for use within, and the new target language will likely contain both linguistic and cultural differences that need to be accounted for during the adaptation process (Van de Vijver & Hambleton, 1996). As a result Hambleton et al. (1999) and Sireci, Yang, Harter and Ehrlich (2006) recommend the use of bilingual translators who demonstrate knowledge of both the source and target languages and related cultures of these population groups. Harkness (2003) highlights that translators should translate into their strongest language and as a result should have the target language as their first language. Multiple bilingual translators are recommended within a translation team in order to promote interaction, discussion and debate, and finally, the selection of the most suitable translation choice when a number of options are available (Hambleton & Patsula, 2000).

Hambleton (2005) adds that knowledge of the subject matter being translated is advantageous in ensuring that the subtleties and nuances of the material are communicated across translated versions of the psychometric tool. Kilian et al. (2010) agree, explaining that when translating psychological terms, and when attempting to elicit psychological symptoms, literal translations from the original

English version of a psychometric tool or set of interview questions may not be sufficient, and a conceptual understanding of the terms and symptoms particular questions are trying to elicit may be required in order to select the most appropriate translation choices. In addition some knowledge of the translation process and psychometric tool construction and adaptation can be useful (Hambleton et al., 1999; Steele & Edwards, 2008a); however this information could also be conveyed before the translation process begins in the form of training sessions.

The CORE System Trust's translating and normalising guidelines (Evans, 2008) account for the representation of linguistic and cultural differences within the selection of the translation team in that the guidelines prescribe the inclusion of a bilingual team comprising at least one mental healthcare professional, one professional translator and one lay person representative of the target population. In addition the guidelines emphasise the inclusion of a member of the CORE-OM development team in order to promote the construct equivalence of the tool in its new language version.

Harkness (2003) adds that translation guidelines be presented to each translator before the translation process begins, clearly outlining the purpose of the translation, the target population and the type of translation required in order to assist translators in their translation choices. Brislin (1986) published a set of recommended translation guidelines in which he suggested altering the source document into short, simple sentences that conceptualise a single idea in each sentence. He recommended the use of active rather than passive words because active words allow for easier identification of the subject, object and verb within the sentence. In addition Brislin (1980) suggested the use of nouns instead of pronouns and specific terms as opposed to vague categories of nouns. He also opposed the use of metaphors, colloquialisms, subjunctives, prepositions and adverbs because of the difficulty in finding linguistic equivalents across language versions for these words.

Because the CORE-OM is designed as a questionnaire, and comprised of 34 items already structured as short, concise sentences, the majority of which are phrased in the active voice, additional restructuring of the original CORE-OM English version may not be necessary before adaptation into other language versions. However

Brislin's (1986) translation guidelines could prove useful to translators in order to standardise the translation process and are therefore recommended as a supplement to the current CORE System Trust translating and normalising guidelines.

D2: “[Psychometric tool] developers/publishers should provide evidence that the language used in the [psychometric tool] directions, scoring rubrics, and the items themselves are appropriate for all cultural and language populations for whom the [psychometric tool] is intended” (Hambleton, 2005, p.26)

D3: “[Psychometric tool] developers/publishers should provide evidence that the choice of testing techniques, item formats, test conventions, and other procedures are familiar to all intended populations” (Hambleton, 2005, p.27).

D4: “[Psychometric tool] developers/publishers should provide evidence that item content and stimulus materials are familiar to all intended populations” (Hambleton, 2005, p.27)

The second, third and fourth guidelines are all closely related to the investigation of method bias, particularly instruction and administration bias. These guidelines encourage researchers to consider the appropriateness of answer formats and item content, specifically level of word difficulty, readability, grammar, writing style and punctuation within the instructions and individual questionnaire items of the psychometric tool being adapted (Hambleton, 2005). In addition these guidelines advise researchers to consider the source and the target populations' familiarity with the psychometric tool stimulus material, item response procedures and formats used (Van de Vijver & Poortinga, 2005). Van de Vijver and Hambleton (1996) explain that the ecological validity or relevance and appropriateness of item content with regards to both the behaviour being evaluated by the adapted psychometric tool and the validity of the questionnaire item content in measuring that behaviour within the target population must be taken into account.

The CORE-OM is a self-report questionnaire that requires individuals to rate questionnaire items on a likert scale ranging between 0 and 4, depending on how they have been feeling over the past 7 days. When adapting the CORE-OM into

other language versions for use in different cultural contexts it would be necessary to establish the familiarity of the target population with this item response format. It would also be necessary to consider whether the psychological vocabulary used within the CORE-OM questionnaire items is available within the target language. However current CORE System Trust translating and normalising guidelines do not prescribe that researchers consider method bias during the adaptation of the tool into different language versions. These guidelines are therefore recommended to supplement current CORE System Trust translating and normalising guidelines (Evans, 2008) in order to ensure the qualitative consideration of method bias across adaptations of the tool.

D5: “[Psychometric tool] developers/publishers should compile judgemental evidence, both linguistic and psychological, to improve the accuracy of the adaptation process and compile evidence on the equivalence of all language versions” (Hambleton, 2005, p.27)

The fifth guideline relates to the selection and implementation of an appropriate translation design during the adaptation process. As explained earlier decisions made by the translation team relating to both linguistic and psychological translation choices generate judgemental evidence for the content validity of the adaptation (Hambleton, 2005). An appropriate translation design assists the translation team in achieving equivalence between the original and adapted psychometric tool versions. The CORE System Trust translating and normalising guidelines (Evans, 2008) prescribe a comprehensive translation design that includes a number of complementary translation methods improving the quality of the resultant adaptation. This CORE System Trust requirement is well aligned with current ITC guidelines and no further supplement is required.

D6: “[Psychometric tool] developers/publishers should ensure that the data collection design permits the use of appropriate statistical techniques to establish construct and item equivalence among the language versions of the “[psychometric tool]” (Hambleton, 2005, p.27).

While ITC guidelines up until this point have focused on qualitative methods that allow for the culturally sensitive adaptation of a psychometric tool into the target language, accounting for construct, method and item bias, ITC guidelines from this point on focus on quantitative methods that evaluate the validity and equivalence of the resultant adaptation (Hambleton, 2005). The sixth guideline alerts researchers to the need for appropriate data collection designs that can support the necessary statistical analyses needed to establish the degree of equivalence between the original and adapted psychometric tool versions (Hambleton, 2005). Hambleton (2005) highlights that statistical analyses draw from empirical data generated from the target population using the adapted version of the psychometric tool and therefore provide valuable information about how the tool performs practically, in the target population. In addition statistical analyses provide evidence of construct, method and item bias within the adapted psychometric tool version which indicates the level of equivalence that has been achieved between the original and adapted psychometric tool versions (Van de Vijver & Hambleton, 1996).

However Hambleton et al. (1999) explain that meaningful statistical analyses require sufficient sample sizes that include enough variability in scores. The investigation of equivalence requires the use of confirmatory factor analysis and structural equation modelling (Byrne & Van de Vijver, 2010). Brown (2006) explains that as a rule of thumb 10 participants per item provides an indication of the sample size necessary in order to “achieve adequate statistical power and precision of parameter estimates” for these analytic techniques (p.412). Because of the lack of psychometric structure available for the CORE-OM it is not possible to investigate equivalence of the measure, however it may be possible to investigate equivalence of the reduced CORE-10 measure across language versions. A shorter scale of 10 items would require a sample size of about 100 individuals per language group in order to generate meaningful statistical analyses (Brown, 2006). This sample is an accessible size, also recommended by the current CORE System Trust translating and normalising guidelines (Evans, 2008). This requirement is well aligned with current ITC guidelines and no further supplement is required.

D7: “[Psychometric tool] developers/publishers should apply appropriate statistical techniques to a) establish the equivalence of the language version

of the [psychometric tool], and b) identify problematic components or aspects of the [psychometric tool] that may be inadequate in one or more of the intended populations” (Hambleton, 2005, p.28).

The seventh guideline highlights the importance of establishing the degree of equivalence achieved between the original and adapted psychometric tool, as well as identifying problematic aspects of the adaptation. Van de Vijver and Tanzer (2004) explain that equivalence refers to the degree to which scores achieved on the original and adapted psychometric tool versions can be considered to be comparable. Van de Vijver and Leung (1997) highlight that measurement equivalence indicates that the scores produced from the psychometric tool in its original and adapted versions are comparable as measurement units. Measurement equivalence is demonstrated through a similarity in factor structures, factor loadings, item intercepts and perceived item content (Byrne & Van de Vijver, 2010). While structural equivalence allows for the comparison of the same psychological construct across the original and adapted psychometric tool (Van de Vijver & Leung, 1997). Structural equivalence is defined as a similarity in dimensionality and relationships amongst construct dimensions, across the original and translated psychometric measures (Byrne & Van de Vijver, 2010). Both measurement and structural equivalence are investigated using structural equation modeling.

However investigations of equivalence rely on an identified psychometric structure that is investigated across language versions. In the case of the CORE-OM it has not been possible to determine this structure (Bedford et al., 2010; Evans et al., 2002; Lyne et al., 2006). Instead current research relating to the construct validity of the CORE-OM across language versions (Elfstrom et al., 2012; Palmieri et al., 2009) have concentrated on internal consistency, test-retest reliability, convergent and divergent validity as prescribed by the CORE System Trust translating and normalising guidelines (Evans, 2008). Although with the recent reduction of the CORE-OM to the CORE-10, with a more easily definable, theoretical single factor structure, it may be possible to investigate equivalence of this measure across language versions. As a result this ITC guideline is recommended to supplement current CORE System Trust guidelines in order to establish equivalence across

language versions of the CORE-10 and therefore allow for the valid comparison of scores of distress across language versions.

In addition Van de Vijver and Poortinga (2005) explain that convergent validity using well established psychometric tools that have been demonstrated to appropriately measure the construct cross-culturally are helpful in generating evidence of the construct equivalence of the adapted psychometric tool version (Van de Vijver & Tanzer, 2004). The Beck Depression Inventories (BDI) I and II have demonstrated high convergent validity with the CORE-OM with Spearman's rho values of 0.85 and 0.81 respectively (Barkham et al., 2001), and would provide valuable evidence of convergent validity for adapted language versions of the CORE-OM.

D8: “[Psychometric tool] developers/publishers should provide information of the validity of the adapted versions of the [psychometric tool] in the intended population” (Hambleton, 2005, p.28).

The eighth guideline acknowledges that psychometric tools with demonstrated validity in one population, language and cultural group, do not necessarily retain that same validity in different populations, and as a result evidence of the psychometric properties of the adapted psychometric tool versions within their relevant target populations must be demonstrated (ITC, 2010; Hambleton et al., 1999; Van de Vijver & Hambleton, 1996). Current CORE System Trust translating and normalising guidelines require the demonstration of both reliability and validity of the adapted language version of the tool. This requirement is well aligned with current ITC guidelines and no further supplement is required.

D9: “[Psychometric tool] developers/publishers should provide statistical evidence about the equivalence of items in all intended populations” (Hambleton, 2005, p.29).

D10: “Non-equivalent items across the intended populations should not be used in ‘linking’ adapted versions of the [psychometric tool] to a common score reporting scale. However these same items may be useful for reporting scores in each population separately” (Hambleton, 2005, p.30).

The ninth and tenth guidelines within the 'test development and adaptation' area emphasise the need to investigate item bias within each questionnaire item across the original and adapted psychometric tool versions following adaptation (Hambleton, 2005). This is again possible through the use of structural equation modelling whereby item means and intercepts performing significantly differently across language versions of the tool are identified for further investigation or potentially removed from the model (Byrne, 2001). However as discussed above, this investigation would only be possible in the CORE-10 where a definable psychometric structure allows for evaluation across language versions.

Current CORE System Trust translating and normalising guidelines (Evans, 2008) do not prescribe an investigation of item bias, however because evidence of the performance of individual items across language versions of a tool ensure the valid measurement of the construct across the two populations (Byrne & Van de Vijver, 2010), this ITC guideline is recommended to supplement the CORE System Trust translating and normalising guidelines.

### **c) Administration**

Following the generating of quantitative evidence of the equivalence and validity of the adapted tool, the 'Administration' area of the ITC guidelines relates to the selection of appropriate methods for the administration of the newly adapted psychometric tool version (Bartram, 2001). This area focuses on minimising method bias, specifically in the area of administration bias (Hambleton, 2001), and includes six ITC guidelines. Guidelines within this area are labelled A1-A6 where A refers to 'Administration'.

A1: "Those aspects of the environment that influence the administration of a [psychometric tool] should be made as similar as possible across populations for whom the [psychometric tool] is intended" (Hambleton, 2005, p.30).

The first guideline highlights the need for a consistent environment in order to reduce unnecessary method bias during the administration of a psychometric tool across the source and target populations (Hambleton, 2005). Van de Vijver and Hambleton

(1996) and Hambleton et al. (1999) explain that the environment within which a psychometric tool is administered can have significant influence over the experiences and reactions of the individual answering the psychometric tool, and as a result attempts should be made to standardise such environments wherever possible.

Because the CORE-OM is not a diagnostic tool but instead was designed for use across primary and secondary mental healthcare contexts to evaluate gross psychological distress in a self reporting format (Evans et al., 2002) environmental bias is not as significant. However during the initial validation process UK participants were handed the CORE-OM and asked to complete it independently and then hand it back to the administrator, ensuring some degree of confidentiality of responses (Evans et al., 2002). Referential data was generated based on this administrative process. If the CORE-OM were to be administered differently, for example orally, this may impact on the degree of self-disclosure individuals engage in when completing the questionnaire. Current CORE System Trust translating and normalising guidelines (Evans, 2008) do not prescribe the formulation of administrative guidelines, however it would be beneficial to emphasise this independent, self-reporting administrative procedure in the form of administrative guidelines to ensure the standardised administration of adapted language versions of the CORE-OM. As a result this ITC guideline is recommended to supplement the CORE System Trust translating and normalising guidelines (Evans, 2008).

A2: “[Psychometric tool] developers and administrators should try to anticipate the types of problems that can be expected, and take appropriate actions to remedy these problems through the preparation of appropriate materials and instructions” (Hambleton, 2005, p.31).

A3: “[Psychometric tool] administrators should be sensitive to a number of factors related to the stimulus materials, administration procedures and response modes that can moderate the validity of the inferences drawn from the scores” (Hambleton, 2005, p.31)

Both the second and third guidelines relate to administration bias within instructions, stimulus material, administration procedures and response formats across the original and adapted psychometric tool versions. Van de Vijver and Hambleton (1996) explain that administrative problems are detectable during small pilot studies in which the adapted psychometric tool is applied in non-standardised ways in order to generate discussion and qualitative feedback, and participants are asked to explain reasons for their responses to individual items. Problems relating to psychometric tool administration procedures, stimulus material and response modes can be detected during these piloting processes and then corrected before administration in clinical settings (Hambleton et al., 1999; Van de Vijver & Hambleton, 1996).

Current CORE System Trust translating and normalising guidelines (Evans, 2008) require a small qualitative piloting process within the translation design in order to investigate administration bias. In addition the CORE-OM contains clear written instructions for self-administration. Hambleton (2005) advises that adapted instructions should promote the standardised administration of the psychometric tool and minimise the need for further verbal explanation. The current CORE System Trust guidelines include this recommendation and align well with current ITC guidelines so no further supplement is required.

A4: “[Psychometric tool] administration instructions should be in the source and target languages to minimise the influence of unwanted sources of variation across populations” (Hambleton, 2005, p.31).

A5: “The [Psychometric tool] manual should specify all aspects of the [psychometric tool] and its administration that require scrutiny in the application of the [psychometric tool] in a new cultural context” (Hambleton, 2005, p.32).

A6: “The administrator should be unobtrusive and the administrator-examinee interaction should be minimized. Explicit rules that are described in the [psychometric tool] administration manual should be followed” (Hambleton, 2005, p.32).

The fourth, fifth and sixth guidelines relate specifically to the consistency in instructions and administration of the psychometric tool across the original and adapted versions (Hambleton, 2005). Hambleton (2005) explains that administration bias can be reduced by providing clear and self-explanatory written instructions for administration of the psychometric tool that minimises the need for further verbal explanation by the administrator of the tool. Van de Vijver and Hambleton (1996) add that standardised administrative instructions and manuals in both the source and target language promote standardised psychometric tool administration. Furthermore they recommend that within the psychometric tool administrative manual details relating to specific cross-cultural issues that arose in the translation process should be noted because they may have bearing on the administration of the adapted psychometric tool version.

Current CORE System Trust translating and normalising guidelines (Evans, 2008) do not prescribe the production of a translated administration and scoring manual to accompany the adapted language version of the CORE-OM. However in order to ensure standardised administration and scoring of the tool across language versions, as well as to account for specific cross-cultural issues that arise during adaptation into other language versions, it is recommended that some documentation accompany the adapted CORE-OM language version, stipulating administrative, scoring and culture-specific issues. As a result these ITC considerations are recommended to supplement current CORE System Trust translating and normalising guidelines.

#### **d) Documentation and score interpretation**

The 'documentation of changes and score interpretation' area of the ITC guidelines relates to the importance of documenting changes made to the original psychometric tool during adaption, that may be pertinent to score interpretation of the newly adapted psychometric tool version (Bartram, 2001), and includes four ITC guidelines. Guidelines within this area are labelled I1-I4 where I refers to 'Interpretation'.

I1: "When a [psychometric tool] is adapted for use in another population, documentation of the changes should be provided, along with evidence to

support the equivalence of the adapted version of the [psychometric tool]" (Hambleton, 2005, p.32).

The first guideline emphasises the impact of changes made to the original psychometric tool version during adaptation that comprise the equivalence of that adaptation and the comparison of scores across psychometric tool versions cross-culturally (Hambleton et al., 1999; Van de Vijver & Hambleton, 1996). Van Ommeren et al. (1999) emphasise the importance of this process of documentation in the conceptualisation of a translation monitoring form that documents all translation choices, reasons for these choices and subsequent changes to the original psychometric tool made during translation. The purpose of the monitoring form was primarily to document the translation process in order to demonstrate reasons for the decisions made by the translation team.

However as Hambleton (2005) highlights, these changes have implications for the interpretation of score meanings within the adapted psychometric tool version. As a result Harkness (2003) suggests that the translation process be recorded in the form of process notes which document changes made to the original tool during translation, as well as necessary compromises that were made in order to assist translation. She explains that this information is also of benefit when reviewing and evaluating the finalised translation and for the updating of translations in the future.

Current CORE System Trust translating and normalising guidelines (Evans, 2008) do not prescribe this documenting process. However as Hambleton (2005) and Harkness (2003) highlight, the documenting of changes made to the original tool during adaptation is a necessary process required in establishing the equivalence of the original and adapted psychometric tool versions, as well as for score interpretation and future development of the adapted tool. As a result this ITC guideline is recommended to supplement current CORE System Trust translating and normalising guidelines.

I2: "Score differences among samples of populations administered the [psychometric tool] should not be taken at face value. The researcher has the

responsibility to substantiate the meaningfulness of the differences with other empirical evidence” (Hambleton, 2005, p.33).

I3: “Comparisons across populations can be made only at the level of equivalence that has been established for the scale on which scores are reported” (Hambleton, 2005, p.33).

The second and third guidelines emphasise that differences in population scores cross-culturally cannot be taken at face value and assumed to represent true cultural differences (Hambleton et al., 1999). As a result interpretations of score differences must be substantiated by other empirical evidence (Van de Vijver & Hambleton, 1996). In addition comparisons made across different cultural populations, using different language versions of a psychometric tool must be restricted to the level of equivalence demonstrated between the versions of the psychometric tool (Hambleton et al., 1999; Van de Vijver & Hambleton, 1996).

Current CORE System Trust translating and normalising guidelines (Evans, 2008) require the demonstration of psychometric properties of the adapted language version of the CORE-OM but due to the lack of psychometric structure, an investigation of equivalence across language versions has not been possible (Bedford et al., 2010; Evans et al., 2002; Lyne et al., 2006). However the recent reduction of the scale to the CORE-10 with a single factor structure would allow for the investigation of equivalence and therefore valid score comparisons. Byrne and Van de Vijver (2010) highlight that without this information it is not possible to determine whether the adapted psychometric tool is investigating the desired construct, as defined and measured by the original tool, within the target population. As a result the investigation of both measurement and structural equivalence are necessary additions needed to supplement current CORE System Trust translation and normalising guidelines in order to allow for meaningful score interpretation.

I4: “The [psychometric tool] developer should provide specific information on the ways in which the socio-cultural and ecological contexts of the population might affect performance on the [psychometric tool], and should suggest

procedures to account for these effects in the interpretation of results” (Hambleton, 2005, p.34).

The fourth guideline relates to the acknowledgement of the influence of socio-cultural factors such as socio-economic status, political context and education, in addition to demographic factors such as age and sex, on psychometric tool performance (Hambleton et al., 1999; Van de Vijver & Hambleton, 1996). Current CORE System Trust translating and normalising guidelines (Evans, 2008) do not stipulate the generating of scoring guidelines that contextualise score interpretation of the measure. However this information would improve the meaningful interpretation of CORE-OM mean scores within adapted language versions and is recommended as a supplement to the CORE System Trust translating and normalising guidelines.

## **CONCLUSION**

The initial chapters of this thesis have presented South Africa as a country in transformation, attempting to recover from the considerable negative impact of Apartheid governance. The South African population continues to contend with the legacy of Apartheid’s policies which have disadvantaged black, African language speaking South Africans while advantaging white, English and Afrikaans speaking South Africans. This imbalance is clearly illustrated within the provision of current mental healthcare services where access is considerably reduced for African language speakers. In addition to language barriers that prevent full access to these services Drennan et al. (1991) highlight that mental healthcare services within South Africa draw from a western psychiatric model in conceptualising psychological distress using affective terminology.

Swartz (1998) explains that this professional explanatory model may not necessarily be congruent with many African language speaking clients’ interpretations of their signs and symptoms within their personal, culturally specific explanatory models of distress. In addition Drennan et al. (1999) note that the English language supports a discourse of distress that focuses on emotional terminology, however other African languages like Xhosa draw from a different discourse of distress that focuses more on somatic and concrete descriptions of distress. In addition Markus and Kitayama

(1991) highlight the influence of an individual's cultural context on how they conceptualise the self and how this conceptualisation has implications for how distress is understood, described and supported by the language of that culture. As a result negotiation is often needed between the mental health care professional's conceptualisation of signs and symptoms and the individual's conceptualisation of their distress in order for the client to benefit from psychotherapeutic intervention embedded in a western psychiatric model.

Within university student counselling centres, this thesis has presented the argument that historically white English medium student counselling centres are possibly underutilised by black, African language speaking students due to lack of staff diversity, unfamiliarity with psychological resources, scepticism about psychological services, and the lack of African language speaking psychologists and psychological resource materials available in African languages. The availability of self report inventories that assist in evaluating psychological distress, drawing from a western psychiatric model's conceptualisation of distress using affective terminology, but adapted into African languages like Xhosa, using culture-sensitive procedures that go beyond literal translation, would allow for improved access for Xhosa speaking South African students to these services if they choose to utilise them. The CORE-OM has been suggested as a particularly relevant tool in this regard because of its clinical utility in evaluating gross psychological distress. In addition the CORE-OM's utility as an outcome measure would allow for the evaluation of the effectiveness of psychotherapy interventions conducted in Xhosa, at these centres.

While translation is a common method for preparing tools for use across languages, this thesis has argued that it draws from a universalist conceptualisation of psychological constructs that often imposes western psychiatric conceptualisations and evaluations of distress in affective terms, across contexts without acknowledging its own cultural bias, other cultural conceptualisations of distress, and the influence of language on how that distress is conceptualised and communicated culturally. While current CORE System Trust translating and normalising guidelines (Evans, 2008) present a methodologically strong translation design, they negate a) the consideration of construct equivalence and bias of the CORE-OM within the target population, b) the need to investigate both measurement and structural equivalence

of the original and adapted language versions following translation, in order to provide meaningful score interpretations, and c) lack administrative and scoring guidelines that would promote the standardised application of the tool cross-culturally.

Instead ITC guidelines for tool adaptation (Hambleton, 2005) have been recommended as a culturally sensitive supplement to current CORE System Trust guidelines (Evans, 2008) in order to promote the adaptation of the CORE-OM into a valid Xhosa measure of distress. ITC guidelines recommend qualitative procedures initially in order to establish the degree of construct equivalence and bias in the original tool and then plan the necessary adaptation to establish a valid adapted language version of the tool. Subsequent guidelines assist the researcher in achieving the highest quality and validity of the adaptation possible, while providing guidelines for quantitative analysis of the resultant adaptation in order to demonstrate equivalence and validity. While the current CORE System Trust normalising and translating guidelines are aligned with some of these ITC guidelines, some guidelines are not currently included and are suggested as supplements to improve the valid adaptation of future CORE-OM language versions.

In particular ITC guidelines C1 and C2 have been recommended for inclusion as the initial step in the adaption process, allowing for an investigation of the construct equivalence and bias of the CORE-OM within the target population. Next a standardised set of translation guidelines are suggested to assist in accounting for linguistic and cultural bias during selection and preparation of the translation team. ITC guidelines D2, D3 and D4 are recommended for inclusion in the current CORE System Trust translation and normalising guidelines in order to assist in accounting for method bias during the adaptation process.

While D6-7 and D9-D10 are recommended in order to guide an appropriate data collection and data analysis process that would allow for an investigation of equivalence of the CORE-10 across language versions, allowing for a meaningful comparison of psychometric data across the two versions. Finally ITC guidelines A1, A4-6 are recommended to guide the development of administrative guidelines in order to standardise the administration of adapted CORE-OM language versions,

while I1-4 are recommended to assist in developing score interpretation guidelines for individual language adaptations of the CORE-OM. These suggested supplements are illustrated in bold italics in table 4.2.1 on the following page, while ITC guidelines that are currently included within the CORE System Trust translating and normalising guidelines are indicated in grey in brackets next to the CORE guideline.

Table 4.2.1 Combining CORE System Trust and ITC translation guidelines

Insert ITC Guideline	Purpose	Method
(D5)	<b><u>Current CORE System Trust translating and normalising guidelines (Evans, 2008)</u></b>	
(D1)	Step 1: Select team of bilingual translators – forward-translation of CORE-OM into target language	
D1 Translation guidelines	<b><i>Include translation guidelines to standardise the translation process</i></b>	Qualitative
C1 Construct bias	Step 2: Committee approach	
C2 Construct equivalence	<b><i>Investigate construct bias of original CORE-OM in the target population.</i></b>	Qualitative
	<b><i>Investigate construct equivalence of CORE-OM English version across UK and SA samples.</i></b>	Quantitative
D2-4 Investigate method bias	Step 3: Back translation with independent translators Step 4: Qualitative pilot	
(D6, D8)	<b><i>Include investigation of method bias within the CORE-OM questionnaire format and item content</i></b>	Qualitative
D7, D9-10 Investigate equivalence	Step 5: Investigation of psychometric properties of the adapted language version	
A1-6 Generate admin guidelines	<b><i>Include an investigation of equivalence of the CORE-10 across language versions</i></b>	Quantitative
I1-3 Generate scoring guidelines	<b><i>Include administrative guidelines for the adapted CORE-OM language version</i></b>	Qualitative
I4 Account for cultural context	<b><i>Include score interpretation guidelines for the adapted CORE-OM language version</i></b>	Qualitative
	<b><i>Include context specific cultural issues that influence score interpretation</i></b>	Qualitative

The proposed method for adapting the CORE-OM into a valid Xhosa measure of distress for use within South African university student populations is presented in the following chapter.

## CHAPTER 5: METHODOLOGY

This thesis aims to adapt the CORE-OM into a valid Xhosa measure of gross distress, using current CORE System Trust translation and normalising guidelines (Evans, 2008) supplemented by ITC guidelines for psychometric tool adaptation (Hambleton, 2005), in order to assist in improving access of Xhosa speaking students to psychological services in Xhosa at university student counselling centres.

This research aim is operationalised into four objectives: First, drawing from the 'context' area within the ITC guidelines (Hambleton, 2005) this thesis investigates the construct bias of the CORE-OM English version, and its construct equivalence across a UK population sample and South African first language English and Xhosa speaking student population samples in order to establish the degree of adaptation necessary in order to develop a valid Xhosa measure of distress.

Second, drawing from the CORE System Trust translating and normalising guidelines (Evans, 2008) and the 'test development and adaptation' area within the ITC guidelines (Hambleton, 2005) this thesis applies a culturally sensitive translation design in translating the CORE-OM into Xhosa. Third, the psychometric properties of the CORE-OM Xhosa version are investigated in addition to the level of equivalence of a reduced CORE-10 item scale across English and Xhosa language versions. Finally, drawing from the 'administration' and 'documentation of changes and score interpretation' areas of the ITC guidelines (Hambleton, 2005) this thesis develops administrative and scoring guidelines to standardise the use of the CORE-OM and South African CORE-10 Xhosa versions.

This thesis is an exploratory cross-cultural study that examines the transportability of the CORE-OM as a measure of distress across two language versions. It draws from a mixed methods approach defined by Teddlie and Tshakkori (2003) as either the sequential or parallel use of both qualitative and quantitative methods of data collection and analyses, within a single research design. Malda et al. (2008) refer to qualitative judgemental methods as a priori procedures which are performed before the adapted psychometric tool is administered in the target population, in order to ensure validity of the adaptation and highlight issues of bias that can be corrected

before the adaptation is finalised. While they explain that quantitative statistical methods, or a posteriori procedures, are performed after the administration of the adapted tool in the target population, in order to demonstrate the psychometric properties of the adapted tool.

### **5.1 The selection of the translation team**

The CORE System Trust's translating and normalising guidelines (Evans, 2008) recommend the use of multiple bilingual translators during adaptation of the CORE-OM into other language versions, one of whom is a mental healthcare professional, one a professional translator and one a lay person. The use of multiple translators is also recommended within ITC guidelines (Hambleton, 2005) and is considered to promote interaction, discussion and debate which facilitates more appropriate translation choices than would be achieved by a single translator (Hambleton & Patsula, 2000). As noted in the previous chapter, bilingual translators, with the target language as their stronger language (Harkness, 2003) and demonstrated knowledge of both the source and target languages and related cultures of these population groups (Hambleton et al., 1999; Sireci et al., 2006) are considered to be better equipped to address the linguistic and cultural differences that arise when translating a tool from the source into the target language, than monolingual translators. And translators with developed skills in areas of linguistic translation or mental health care, or are members of the target population, are considered advantageous choices because of the skills and knowledge they bring to the translation process (Hambleton, 2005).

As a result translators for the initial forward translation of the CORE-OM into Xhosa were selected based on the following three criteria:

1. First-language Xhosa speakers, bilingual in English.
2. Professionals in the field of mental health care or Xhosa linguistics, or students representative of the target population the CORE-OM was being adapted for use in.
3. Living in Grahamstown where the researcher was based.

The researcher approached the Rhodes University Department of Psychology and Department of African Languages requesting recommendations for proficient professional translators and potential students who could fulfil the translation task. An advert was placed at the provincial psychiatric hospital requesting the translation services of psychiatric nurses with proficient translation skills (Appendix A).

In addition Steele and Edwards (2008a) suggest that the selection of translators take into account:

- Written and spoken proficiency in both the source and the target languages.
- Previous experience with the process of translation.
- The amount of time the translator has available for the project
- The amount of money the translator requires for his or her services.

Six bilingual, first language Xhosa, second language English speaking translators were selected through a process of interviewing based on the required criteria outlined above. The resultant translating team included two psychiatric nurses, two professional translators with training and applied experience in Xhosa translation, and two students registered for fulltime study at Rhodes University. The team consisted of 5 men and 1 woman. One of the students was completing her third year majoring in psychology, while the other student was completing his third year majoring in Xhosa language. All translators were black South Africans. Each translator had completed high school and some form of tertiary education. Translators were aged between 19-40 years and paid a fee of R200 for their participation in the project.

A Xhosa III class of students from the Rhodes University African Languages Department, who were studying the Xhosa language, along with their two lecturers, were asked to qualitatively review the Xhosa translation as a qualitative pilot study, and were selected due to their specialist linguistic knowledge of the Xhosa language as well as their membership within the target population of first language Xhosa speaking students. The class included seven students, 2 men and 5 women, aged between 20-23 years and two lecturers, 1 man and 1 woman, both with post-graduate qualifications in Xhosa language (one at PhD level) and aged between 24-50 years. Three bilingual first language Xhosa, second language English speaking

psychologists who worked fulltime at the University of Fort Hare student counselling centre (a previously disadvantaged, English medium university where majority of students were first language Xhosa speakers) were also asked to review the translation. The psychologists, 1 man and 2 women, were aged between 35-65 years and held master's qualifications in applied psychology. Finally, a group of bilingual, first language Xhosa, second language English speaking professionals including a female psychiatric nurse based in the UK, a female counselling psychologist and a male Xhosa language high school teacher both based in Grahamstown, provided a quality assurance review of the Xhosa translation. Each of the translators had completed postgraduate studies in their respective disciplines and were aged between 25-45 years.

## **5.2 The translation design**

As explained in the previous chapter the CORE System Trust's translating and normalising guidelines (Evans, 2008) recommend a five step translation design for adapting the CORE-OM into other language versions. However this design was supplemented by ITC guidelines (Hambleton, 2005) in order to improve the validity of the resultant Xhosa language version of the CORE-OM. The original CORE System Trust translating and normalising guidelines are presented as main headings within this section, while the suggested ITC guideline supplements are included as minor headings within each of these main sections.

### **a) Step 1: Forward-translation**

In accordance with the CORE System Trust's translating and normalising guidelines (Evans, 2008) during step 1 the CORE-OM is forward-translated (Brislin, 1970) into the target language by multiple bilingual translators, one of whom is a mental healthcare professional, one a professional translator and one a lay person. Three translators (one psychiatric nurse, one professional translator and one student majoring in Xhosa) received a copy of the original CORE-OM English version (Appendix B), and were given one month to complete the forward-translations of the CORE-OM into Xhosa and return them to the researcher.

## 1. Inclusion of translation guidelines

However as noted by Harkness (2003) the use of translation guidelines assists in standardising the translation process, allowing for consistency in translation choices made during forward-translation process. As a result a set of guidelines generated by the researcher to assist in and standardise the translation process was provided to each forward-translator. These guidelines included Brislin's (1986) translation recommendations regarding:

- The use of short, simple sentences when translating.
- Choosing specific terms as opposed to vague descriptions.
- Applying the active as opposed to the passive voice.
- Avoiding pronouns, metaphors and colloquialisms.

The guidelines were further supplemented by South African research in the area of psychometric tool translation into Xhosa. For example Steele and Edwards (2008a) highlight that in spite of a long-established oral tradition the first comprehensive Xhosa dictionary has only recently been published, with volume three released in 1989, volume two released in 2003 and volume one released in 2006. As a result the Xhosa language in its written form is still a young and developing language and therefore lacks the degree of standardisation that European languages with more established written histories have.

In addition Steele and Edwards (2008a) explain that significant differences exist between the written and spoken forms of the Xhosa language, for example in the use of intonation, inflection and gesturing in the spoken form to influence word meanings. As a result Steele and Edwards (2008a) suggest balancing spoken and written forms in terms of vocabulary choices during the translation process in order to assist in the readability of the translation. Furthermore Steele and Edwards (2008a) highlight the considerable grammatical and syntactical differences between African languages like Xhosa, and English and other European languages, making it necessary on occasions to restructure phrases before translating them from English into Xhosa.

During an earlier adaptation of the Beck Depression Inventory, Drennan et al. (1991) highlighted significant differences between Xhosa dialects across urban and rural contexts, whereby urban Xhosa speakers tended to be exposed to a variety of other languages and incorporated vocabulary from these languages into their dialects, while rural Xhosa speakers drew exclusively from traditional Xhosa vocabulary. As a result they emphasise the need for careful vocabulary selection during translation in order to improve the transportability of the translation across urban and rural contexts. Both Smit et al. (2006) and Steele and Edwards (2008a) agree. Steele and Edwards (2008a) add that further differences in Xhosa dialects are apparent across geographical areas like the Eastern and Western Cape. As a result Steele and Edwards (2008a) suggest that instead of relying upon the spoken dialect of the region, translators should attempt to draw on standardised written Xhosa forms for vocabulary choices and avoid colloquialism in order to increase the geographic transportability of the translation.

In summary this South African research recommended:

- The need for linguistic equivalence during forward translations.
- The selection of vocabulary that is widely applicable across Xhosa dialects
- The use of written as opposed to more colloquial, spoken versions of the language

These recommendations were incorporated into Brislin's (1986) guidelines, and presented to the translators for use during forward translation (Appendix C).

### **b) Step 2: Back-translation**

In step 2 the CORE System Trust's translating and normalising guidelines (Evans, 2008) recommend that the forward translations be reviewed during a combined meeting involving all bilingual translators and facilitated by a member of the CORE System Trust from the UK in order to generate one forward translation version. Unfortunately due to logistical restraints it was not possible for a member of the CORE development team to be present in South Africa during this process. As a result the researcher fulfilled this facilitative role. However because the researcher was not able to speak the Xhosa language proficiently she first requested a back-translation process before conducting these committee meetings. As a result during

step 2, the Xhosa forward-translations were distributed amongst the three remaining translators (one psychiatric nurse, one professional translator, and one student majoring in psychology) to translate back into English (Brislin, 1970). The back-translators also received a copy of the translation guidelines (Appendix C) but did not receive a copy of the original CORE-OM English version. They were given one month to complete the back-translations and return them to the researcher.

### **c) Step 3: Committee approach**

The researcher then convened a committee meeting (Brislin, 1970) in accordance with the CORE System Trust's translating and normalising guidelines (Evans, 2008). The original CORE-OM English version questionnaire items along with each Xhosa forward-translation and accompanying English back-translation were tabulated for comparison. The researcher then met with the translating team as a committee to 1) consider the construct bias and equivalence of the CORE-OM English version in accordance with ITC guidelines C1 and C2 (Hambleton, 2005); and then to 2) compare the different forward- and back-translations in order to develop a single Xhosa translation of the CORE-OM.

It was not possible to arrange a single meeting time that was convenient for all translators, and as a result three 2-hour meetings were arranged. The first meeting included the professional translator and student majoring in Xhosa, who had completed the forward-translations, and the student majoring in psychology, who had completed the back-translation. The second meeting included the nurse who had completed the forward-translation, and the professional translator who had completed the back-translation. The sixth translator, the professional nurse who had completed the back-translation was unable to attend either of the two committee meetings but arranged to meet with the researcher individually. The discussions were audio-recorded and later transcribed.

#### **1. Qualitatively investigating construct bias and equivalence of the CORE-OM**

In accordance with Van de Vijver and Tanzer's (2004) recommendations construct bias of the CORE-OM English version was investigated by asking the translation

team to evaluate the CORE-OM for words and phrases that contained descriptions and conceptualisations of distress that were not relevant or meaningful within a first language Xhosa speaking student population sample, in order to replace this vocabulary with more generic equivalents. Each translator was familiar with the questionnaire due to the forward- and back-translation process, so was able to comment informatively. In addition the team was asked to comment on the extent to which they felt that the current CORE-OM questionnaire items evaluated distress in meaningful ways within the Xhosa language.

## 2. Developing a single Xhosa translation of the CORE-OM

During the first committee meeting the translators evaluated each forward-translation statement relating to the CORE-OM English version instructions, likert scale descriptions and questionnaire items 1-17, taking into consideration linguistic, idiomatic, grammatical and syntactical, experiential and conceptual equivalence between the original English and the Xhosa versions. During the second committee meeting the translators reviewed the amendments made in the first committee meeting and suggested changes. Next they evaluated each forward-translation statement relating to the CORE-OM English version questionnaire items 18-34, again taking into consideration linguistic, idiomatic, grammatical and syntactical, experiential and conceptual equivalence between the original English and the translated Xhosa versions. During the third committee meeting the translator reviewed the amended translation, paying particular attention to issues relating to grammatical and conceptual equivalence.

The researcher was able to draw from the back-translations to guide each evaluation. All changes made to the CORE-OM Xhosa translation were documented. Concurrent to this process the CORE-OM English version was quantitatively investigated for construct equivalence.

## 3. Quantitatively investigating construct equivalence of the CORE-OM

A university student population was selected as the target population for this investigation because the aim of the adaptation of the CORE-OM into Xhosa was to

produce a valid Xhosa version that could primarily be used in university student counselling centres. Rhodes University, a historically white university in Grahamstown in the Eastern Cape where the researcher was based, that provides educational instruction in English, was selected as the target university. Permission from the Rhodes University Humanities Faculty Higher Degrees Committee, the Rhodes University Registrar and the Rhodes University Psychology Department's Research Projects and Ethics Review Committee was obtained in order to allow participation of Rhodes University students in the project (Appendix D).

### Sampling and data collection

Hambleton et al. (1999) recommend a sample of at least 200 participants in order to allow for meaningful statistical analyses of the data collected. Because the CORE-OM evaluates differences in the degree of gross psychological distress experienced between a clinical and non-clinical population sample both clinical and non-clinical population samples were required (Evans et al., 2002). Data collection for both the clinical and non-clinical samples was planned concurrently in order to reduce the effect of environmental bias.

#### 1. Clinical sample

Sampling from the clinical population took place at the Rhodes University Student Counselling Centre. Permission was obtained from the counselling centre director to use the centre as a data collection site. Each student making use of the psychological services offered at this centre during the second semester (July – December 2010) of the academic year was asked to complete the original CORE-OM English version (Appendix B) before the initial intake interview. This consecutive sampling method was employed to reduce sampling bias and improve response rates as each individual making use of the counselling centre during this period was given the opportunity to complete the CORE-OM questionnaire.

Each questionnaire was accompanied by a brief letter of informed consent (Appendix E) which emphasised that this research project was being conducted independently from the student counselling centre and that completion of the questionnaire was

voluntary and anonymous, highlighting that choosing not to complete the questionnaire would have no influence on the quality of care students would receive at the centre. Data collection continued up until the point where 200 first-language English speaking students had completed the CORE-OM questionnaires. Data collection occurred over a 7 month period from June 2010 to January 2011.

## 2. Non-clinical sample

Sampling from the non-clinical population required representative sampling in order to generalise the results to first language English and first language Xhosa speaking students registered at Rhodes University during 2010, but the sampling method also needed to produce effective response rates. As a result cluster sampling was selected. Cluster sampling is a process whereby a target population is divided up into more manageable groups or clusters based on factors of homogeneity, and then selected for sampling within these clusters (Durrheim & Painter, 2006).

However Raudenbush (1997) notes that cluster sampling has been criticised for not producing as representative a sample as other probability sampling methods because of the non-random selection of membership that constitute clusters initially, and the similarity between individuals that results from shared experiences as members of those clusters. This similarity causes a degree of bias referred to as the design effect (DEFF) indicating the size of sampling variance between a cluster sample and a random sample (Bennett, Woods, Liyanage & Smith, 1991).

Raudenbush (1997) explains that the inclusion of many small clusters within a sample decreases the design effect, while Adams et al. (2004) note that the use of proportionate stratified cluster sampling which improves the representativeness of the sample, further reduces design effect. Proportionate stratified sampling selects individuals from the target population across homogeneous strata, to produce a sample proportionately representative of the target population with regards to these strata (Durrheim & Painter, 2006). The participants are randomly selected through a process whereby each member of the strata has an equal and independent chance of being selected for participation in the sample (Durrheim & Painter, 2006).

Random, proportionate stratified cluster sampling allowed the researcher to access a wide variety of smaller student groups within the target university, improving the representativeness of the sample, while allowing for face-to-face interaction during the data collection process that improved the response rate. The researcher used level of study (i.e.: undergraduate or postgraduate) and choice of faculty as strata, referring to the descriptive statistics relating to the total number of students registered for study at Rhodes University during 2010 as well as a breakdown of the number of both undergraduate and postgraduate students registered for study across each faculty. Descriptive statistics produced by the Data Management Unit from Rhodes University are summarised in Table 5.2.1.

Table 5.2.1 Descriptive statistics for Rhodes University students registered for 2010

Faculty:	Total number of students registered:	Undergraduate study:	Postgraduate study:
Commerce	1843 (26%)	1458 (79%)	385 (21%)
Education	665 (9%)	325 (49%)	340 (51%)
Humanities	2862 (40%)	2322 (81%)	540 (19%)
Law	162 (2%)	145 (90%)	17 (10%)
Pharmacy	424 (6%)	382 (90%)	42 (10%)
Science	1257 (17%)	753 (60%)	504 (40%)
Total students:	7213 (100%)	5410 (75%)	1828 (25%)

Of the total number of students, 4038 (56%) identified themselves as first language English speakers. In order to obtain a sample of 200 first language English speaking students, and considering that 56% of the total Rhodes University student population described themselves as first-language English speakers, a target sample of 357 students was needed assuming that the sample would achieve a high degree of representation across first language use. The following ratio was used to establish the sample size:

$$\frac{56}{100} = \frac{200}{x} \quad \text{where } x = 357 \text{ (the target sample size)}$$

In order to apply proportionate stratified cluster sampling, the required sample of 357 students needed to consist of the same proportions as the total Rhodes University student population indicated in Table 5.2.1. These proportions in percentages were used to generate the required number of participants per faculty and year of study in the target sample and are presented in Table 5.2.2 using the following calculation:

$$\frac{357}{1} \times \frac{x}{100} = y \quad \text{where } x = \text{proportion of the faculty or study level}$$

$$y = \text{the number of participants in the sample}$$

Table 5.2.2 Proportion of participants at Rhodes University per faculty and year of study required for the target sample

Faculty:	Total number of students:	Undergraduate study:	Postgraduate study:
Commerce	93 (26%)	73 (79%)	20 (21%)
Education	32 (9%)	16 (49%)	16 (51%)
Humanities	143 (40%)	116 (81%)	27 (19%)
Law	7 (2%)	6 (90%)	1 (10%)
Pharmacy	21 (6%)	19 (90%)	2 (10%)
Science	61(17%)	37 (60%)	24 (40%)
Total target sample:	357 (100%)	267 (75%)	90 (25%)

Rhodes University consists of a total of 42 academic departments. Each academic department was grouped in accordance with faculty and each department within each faculty assigned a sequential number. A random table was then downloaded from [www.stattrek.com](http://www.stattrek.com) comprising these numbers, the first row of which was used to randomly select academic departments from each faculty, for inclusion in the sample. A total of 14 academic departments were randomly selected, representative of all six faculties, through proportionate cluster sampling in accordance with the percentage of students registered within each faculty. Permission to sample these departments was requested and obtained from the heads of each of these academic departments. All years of study within these academic departments were then assigned a sequential number.

A random table was then downloaded from [www.stattrek.com](http://www.stattrek.com) comprising these numbers, the first row of which was used to randomly select the year of study within each academic department to sample the small groups from. Each tutorial or seminar group within the selected year was assigned a sequential number. A random table was then downloaded from [www.stattrek.com](http://www.stattrek.com) comprising these numbers, the first row of which was used to randomly select the tutorial or seminar groups.

The researcher then visited the tutorial and seminar groups during the second semester (July-December 2010), explaining the research project and asking students participating in the selected small group tutorials and seminar groups to complete the CORE-OM questionnaire. Each questionnaire was accompanied by a brief letter of informed consent (Appendix E) which emphasised that completion of the questionnaire was voluntary and anonymous. The informed consent form also required students to divulge their age, sex, race, first-language and faculty of study, as well as whether they were presently receiving any form of psychological treatment or intervention. Sampling stopped when the required number of 200 first language English speaking students was reached. The randomly selected faculty departments and related tutorial and seminar groups are presented in Table 5.2.3.

Table 5.2.3 Departments and tutorial or seminar groups randomly selected for inclusion in the target sample

Faculty:	Proportion of sample:	Departments:	Tutorial Groups:
Commerce	26%	Economics	1* postgrad honours seminar
		Information Systems	3 undergrad 2 <sup>nd</sup> year tutorials
		Management	3 undergrad 2 <sup>nd</sup> year tutorials
* Postgraduate tutors facilitating undergraduate tutorials were used as additional commerce postgraduate sample participants			
Education	9%	English	1 undergrad 3 <sup>rd</sup> year tutorial
		Psychology	2 undergrad 2 <sup>nd</sup> year tutorials
		Postgraduate Certificate in Education	1* postgrad honours seminar

\* Postgraduate tutors facilitating undergraduate tutorials were used as additional education postgraduate sample participants

Humanities	40%	English	1 undergrad 3 <sup>rd</sup> year tutorial 1* postgrad honours seminar
		Political and International Studies	4 undergrad 1 <sup>st</sup> year tutorials
		Psychology	3 undergrad 2 <sup>nd</sup> year tutorials 1* postgrad masters seminar
		Sociology	6 undergrad 1 <sup>st</sup> year tutorials
* Postgraduate tutors facilitating undergraduate tutorials were used as additional humanities postgraduate sample participants			
Law	2%	Commercial Law	1 undergrad 1 <sup>st</sup> year tutorial (including postgrad tutor)
Pharmacy	6%	Pharmacy	2 undergrad 1 <sup>st</sup> year tutorials 1 postgrad honours seminar
Science	17%	Computer Science	2 undergrad 3 <sup>rd</sup> year tutorials
		Ichthyology and Fisheries Science	1 post grad honours seminar
		Physics and Electronics	2 undergrad 2 <sup>nd</sup> year tutorials
		Zoology	1 post grad masters seminar

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## Data analysis

Completed CORE-OM clinical and non-clinical sample questionnaires including total and domain mean scores for each participant were entered into Microsoft Excel. Each participant entry was checked, and cleaned for export into Statistical Package for the Social Sciences (SPSS) version 16. Sample demographics with regard to age, sex and race were compared to the population demographics for all students registered at Rhodes University during 2010 using chi-square ( $\chi^2$ ) as a test of proportions (Howell, 2002) in order to establish the demographic of the clinical student population sample utilising the Rhodes University student counselling centre services, as well as the representativeness of the non-clinical sample. The individual sample demographics of sex, race and first language use were represented by the observed score (O) while the population demographics were represented by the expected scores (E) in the formula below.

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

The total sample was then reduced to first language English and Xhosa speaking students. The usability of the original CORE-OM English version within a South African university first language English speaking student population was investigated by evaluating the percentage of returned questionnaires that were a) completed in full, b) suitable for pro-rating, limited to only 3 omissions and c) unusable, in comparison to the usability demonstrated in the original UK referential data documented by Evans et al., (2002). Chi-square ( $\chi^2$ ) was used as a test of proportions in order to indicate significant differences in completion rates between the samples (Howell, 2002). Rhodes University sample completion rates were represented by the observed score (O) while the original UK referential data completion rates were represented by the expected scores (E). First language Xhosa speaking students were used as an additional group for comparison to investigate the usability of the CORE-OM English version within this language and cultural group.

Reliability within the first language English and Xhosa speaking student samples was investigated using internal consistency which was calculated across all items as well as the four CORE-OM domains using coefficient alpha (Cronbach, 1951). Confidence intervals were used to more accurately demonstrate the range within which differences in alpha estimates fell, based on a confidence level of 95% (Iacobucci & Duhachek, 2003). These confidence intervals were calculated in SPSS. Correlations across domains were also calculated using Spearman's Rho (Howell, 2002). The results were then compared with the Cronbach alpha estimates obtained in the original UK referential data documented by Evans et al., (2002). The data was then converted into descriptive statistics in the form of means and standard deviations.

The psychometric structure of the CORE-OM English version within South African first language English and Xhosa speaking student population samples was investigated using principal components analysis (Kline, 1994). Clinical and non-clinical samples within each language group were combined in order to produce the necessary sample sizes needed to conduct a valid analysis. These results were then compared with those documented by Evans et al. (2002). Direct factor loading comparisons across groups are not possible with exploratory factor analysis, without factor rotations and the calculation of an index of factorial comparability, because the

spatial orientation of factors is arbitrary, resulting in underestimations (Van de Vijver and Leung, 1997).

However an investigation of the psychometric properties of the CORE-10 was conducted. The Rhodes University samples (including both first and second language English speaking students as well as the clinical and non-clinical student samples) were combined into one large sample. A small group of participants from this sample was randomly selected through number allocation. Each data entry within the Rhodes University student sample was sorted first by sex, then clinical or non-clinical population membership, then by first or second language English use. Each entry was assigned a number from 1-7. All entries numbered 7 were included in group A and used to investigate the psychometric structure, internal consistency as well as the measurement and structural model of the CORE-10 using confirmatory factor analysis.

Brown (2006) defines confirmatory factor analysis (CFA) as a form of structural equation modelling that examines the relationship between observed measures, for example, psychometric tool items, and the latent variables or factors of a tool. Brown (2006) explains that confirmatory factor analysis “verifies the number of underlying dimensions of the instrument and the pattern of item-factor relationships” (p.2). Therefore the method investigates a hypothesis regarding the relationship between a number of factors and related questionnaire items pertaining to each factor, within a set of data (Brown, 2006). The number of factors indicates the number of scales while the pattern pertaining to how items load on individual scales determines how subscales should be scored. This model was then cross-validated and investigated for group equivalence across the remaining Rhodes University sample comprising group B, comparing first and second language English speakers within this sample (Byrne, 2001). This analysis was conducted in AMOS version 19. Missing data was replaced using the hotdeck macro for SPSS (Myers, 2011).

The discriminant validity of the original CORE-OM English version within the South African student sample was evaluated through the CORE-OM's ability to differentiate between a clinical and non-clinical population (Evans et al., 2002). The total Rhodes University sample was reduced into first language English and Xhosa speaking

clinical and non-clinical students, and sample means were compared using t-tests to determine statistically significant difference between the groups (Howell, 2002), using a probability of 0.05. Ghaemi (2009, pp.36) highlights that “the p-value may be defined as the probability of observing the observed data, assuming that the null hypothesis is true”, and therefore represents the probability of chance as opposed to an actual number. Cohen (1994) highlights that as a result p-values provide limited information about the actual differences between samples other than whether these differences are the result of chance or not. McLean and Ernest (1998) agree. As a result Cohen (1994) and Wilkinson and the Task Force on Statistical Inferences (1999) recommend that when reporting comparisons of mean scores, effect sizes and confidence intervals are used in order to quantify these differences between sample means.

Cohen’s d calculates effect size as the difference between standardised means or means divided by their common standard deviation (Cohen, 1962) and was used to indicate the size of difference between sample means. Effect sizes were generated using G\*Power 3 (Faul, Erdfelder, Lang, & Buchner, 2007). In addition, confidence intervals (Gardner & Altman, 1986) were used to more accurately demonstrate the range within which differences between mean scores fell, based on a confidence level of 95%. These results were then compared with those obtained within the original UK referential data documented by Evans et al. (2002).

Clinical and non-clinical means and standard deviations were used to calculate criteria for clinically significant change (Jacobson & Truax, 1991).

$$\frac{(mean_{clin} \times SD_{norm}) + (mean_{norm} \times SD_{clin})}{SD_{norm} + SD_{clin}}$$

This quantitative investigation of the degree of construct equivalence of the CORE-OM English across a UK population and a South African first language English and Xhosa speaking student population sample, in combination with the feedback received during the qualitative investigation of construct bias and equivalence of the CORE-OM English version allowed the researcher and the translators to determine the degree of adaptation necessary to develop a valid Xhosa measure of distress.

#### **d) Step 4: Qualitative pilot**

Following the committee meeting the CORE System Trust's translating and normalising guidelines (Evans, 2008) recommend that the resultant translation be qualitatively piloted on a small, diverse convenient sample of individuals representative of the target population. Three qualitative pilots took place during the adaptation of the CORE-OM into Xhosa.

##### **1. The first qualitative review: Xhosa III class**

First, the initial Xhosa translation developed during the committee meetings was qualitatively reviewed by a third year Xhosa class in the Department of African Languages at Rhodes University, made up of seven third year students and two experienced academic lecturers, all of whom had developed theoretical and applied skills in Xhosa translation.

The Xhosa III class was asked to review and complete the CORE-OM Xhosa translation as a questionnaire. Next the group was asked to compare the translation with the original CORE-OM English version, commenting on the quality of the Xhosa translation. Because of the detailed nature of the discussion that resulted, two 2-hour discussion sessions were conducted and participants were provided with lunch to compensate them for their time and feedback. The discussions were audio-recorded and later transcribed. All suggested changes to the CORE-OM Xhosa translation were documented. In addition the researcher recorded her own process notes detailing the discussion that took place during these meetings. An amended Xhosa translation was then generated from these discussions.

##### **Qualitatively investigating method bias**

During qualitative piloting ITC guidelines D2 –D4 recommend the investigation of method bias inherent in the tool being adapted, in order to address and minimise this bias during the translation process (Hambleton, 2005). In particular Smit et al. (2006) note that translators involved in the translation of the Centre for Epidemiology Depression Scale (CES-D), Alcohol Use Disorders Identification Test (AUDIT) and

the Harvard Trauma Questionnaire (HTQ) into Xhosa expressed difficulty finding a linguistically equivalent Xhosa phrase for the instruction 'over a 7 day period'. They explain the reason for this difficulty was due to the lack of an immediate past tense in the Xhosa language. In addition they noted difficulties finding appropriate Xhosa words to distinguish the subtleties between likert scale categories.

As a result the initial Xhosa version of the CORE-OM was qualitatively reviewed by the Xhosa III class during the fourth step of the translation design to identify and address issues pertaining to method bias relating to both instructions and response format. The Xhosa III class were asked for their opinions relating to the clarity of the CORE-OM instructions and the appropriateness of the use of likert scales as an answer format for use within a first language Xhosa speaking student population.

## 2. The second qualitative review: Bilingual psychologists

Next the amended Xhosa version was reviewed by a group of three bilingual psychologists who conducted psychotherapy in Xhosa daily within a student counselling centre context. The amended Xhosa translation was presented to the psychologists in combination with the original CORE-OM English version for comparison. Their feedback was used to generate a second amended Xhosa translation. Again the researcher recorded her own process notes during this discussion to supplement the documented changes made to the translation.

## 3. The third qualitative review: Bilingual professionals

Finally, an additional quality assurance check was included to provide a member of the UK CORE System Trust the opportunity to evaluate and approve the Xhosa translation that had been generated. The researcher convened a final meeting which included Professor Chris Evans from the UK, a psychiatrist, CORE-OM developer, and the individual responsible for the international cross-cultural adaptation of the CORE-OM; and three bilingual, first language Xhosa speaking, second language English speaking translators made up of one psychiatric nurse based in the UK, one counselling psychologist and one Xhosa teacher both based in Grahamstown, South Africa.

Unfortunately Professor Chris Evans was not able to be present in South Africa for the meeting so a 4-hour discussion took place in the form of an on-line meeting conducted in both South African and London over Skype. During this meeting the psychiatric nurse, psychologist and teacher reviewed the Xhosa version of the CORE-OM in comparison with the original English version, evaluating and discussing linguistic, idiomatic, grammatical and syntactical as well as conceptual equivalence between the two versions. Their discussion was predominantly in Xhosa. Following a review of the entire questionnaire, including instructions, likert scale descriptions and individual questionnaire items, the group then gave feedback in English to Professor Chris Evans and the researcher, commenting on the quality of the translation and highlighting potential changes they suggested to the questionnaire. It was not possible to obtain a high-quality audio-recording of this meeting however the researcher, as well as each translator made process notes during the meeting which were used to finalise the Xhosa version.

All suggested changes to the CORE-OM Xhosa translation were documented and the CORE-OM Xhosa version was approved by Professor Chris Evans for quantitatively piloting within a first language Xhosa speaking student population sample. The South African Xhosa teacher and counselling psychologist provided Xhosa translations for the demographic items and score instructions, and a finalised PDF document of the CORE-OM Xhosa version was generated by Professor Evans. This version was reviewed for comprehension and spelling errors by an independent first language Xhosa speaking psychologist, corrected and then approved for online publication on the CORE Systems Trust website. The CORE-OM Xhosa version was then quantitatively piloted in order to demonstrate its psychometric properties.

#### **e) Step 5: Quantitative piloting**

A student population was selected as the target population for the piloting of the CORE-OM Xhosa version because the aim of the adaptation of the CORE-OM into Xhosa was to produce a valid adaptation that could primarily be used in university student counselling centres to improve access to psychological services for first language Xhosa speaking students, and to evaluate the effectiveness of these

interventions. The first language Xhosa speaking sample was drawn predominantly from the University of Fort Hare, an English medium, historically black and disadvantaged university in Alice in the Eastern Cape where the majority of the students are first language Xhosa speakers (Nicholas, 1994). Permission was obtained from the University of Fort Hare Vice Chancellor and Registrar to conduct the data collection (Appendix F and G).

### Sampling and data collection

In accordance with the CORE System Trust's translating and normalising guidelines (Evans, 2008), the psychometric properties of the translation must be investigated using both a clinical and non-clinical sample comprising of at least 200 individuals, from the target language population. Data collection for both these samples was planned concurrently in order to reduce the effect of environmental bias.

#### 1. Clinical sample

Sampling from the clinical population took place predominantly at the University of Fort Hare Student Counselling Centre. However during discussions with staff it was noted that the probability of collecting 200 completed CORE-OM Xhosa version questionnaires from this site over a six month period was unlikely in accordance with current statistical figures relating to student usage at the centre. As a result it was suggested that the Rhodes University Student Counselling Centre and the Nelson Mandela Metropolitan University Student Counselling Centre also be included in the sample and data collection be extended to include the entire academic year (February – December). Rhodes University had already consented to the data collection process (Appendix D), however permission was then obtained from the Nelson Mandela Metropolitan University Research Ethics Committee (Appendix H). The Nelson Mandela Metropolitan University is a historically white, bilingual university (Nicholas, 1994).

Permission was then obtained from the counselling centre directors to use the centres as data collection sites. Each student making use of the psychological services offered at these centres during the 2012 academic year (February –

November 2012) was asked to complete the CORE-OM Xhosa version (Appendix I) before the initial intake interview. Those students who were not first language Xhosa speakers returned the questionnaire unanswered. Each questionnaire was accompanied by a brief letter of informed consent (Appendix J) which emphasised a) that this research project was being conducted independently from the student counselling centre and b) that completion of the questionnaire was voluntary and anonymous, highlighting that choosing not to complete the questionnaire would have no influence on the quality of care students would receive at the centre.

In addition students were also asked to complete the Xhosa version of the Beck Depression Inventory II (Appendix K) as a measure of convergent validity with the CORE-OM Xhosa version. The recent adaptation of the BDI II into Xhosa demonstrated acceptable psychometric properties based on a sample of 122 first language Xhosa speakers within the Eastern Cape (Steele & Edwards, 2008b). This sample comprised 67 women with a mean age of 36 years and 55 men with a mean age of 35 years.

The BDI II Xhosa version demonstrated high internal consistency (Cronbach  $\alpha = 0.93$  for the overall scale with item-total correlations ranging between 0.48 and 0.70), as well as a similar psychometric structure to the original BDI II English version with two dominant factor loadings of cognitive-affective and somatic items (Steele & Edwards, 2008b). In addition the BDI II Xhosa version demonstrated concurrent validity with assessment interviews conducted by clinicians prior to individuals completing the BDI II Xhosa version (Steele & Edwards, 2008b).

Drawing from these results Steele and Edwards (2008b) have concluded that the adapted BDI II Xhosa version demonstrates a high degree of generalisability with regards to the psychological construct of depression across the US population the BDI II was originally developed for use within, and the South Africa Xhosa-speaking population the inventory has been adapted for use within. Steele and Edwards (2008a) comment further that while on occasions they experienced difficulty finding linguistically equivalent phrases for the English terminology used to describe psychological states such as sadness, overall conceptual equivalence was achieved

with little difficulty, demonstrating the fundamental and possibly universal aspects of psychological states being assessed by the BDI II.

Considering the high correlation demonstrated between the BDI-II and the CORE-OM documented by Lyne et al. (2006), this successful adaptation of the BDI II into Xhosa, and the evident construct equivalence between the BDI-II English and Xhosa versions, suggests that the construct of psychological distress measured by the CORE-OM would also achieve acceptable construct equivalence within an Xhosa speaking population sample. The BDI II Xhosa version was disseminated in combination with the CORE-OM Xhosa version during piloting in order to provide a measure of convergent validity of the adapted CORE-OM Xhosa version.

## 2. Non-clinical sample

Sampling from the non-clinical population required representative sampling in order to generalise the results to all students registered at the University of Fort Hare during 2012, but the sampling method also needed to produce effective response rates. Again random stratified cluster sampling was selected (Durrheim & Painter, 2006). The researcher selected level of study (undergraduate or postgraduate) and choice of faculty as strata, referring to the descriptive statistics relating to the total number of students registered for study at Fort Hare University during 2012 as well as a breakdown of the number of both undergraduate and postgraduate students registered for study across each faculty. Descriptive statistics produced by the Data Management Unit from Fort Hare University are summarised in Table 5.2.4.

Table 5.2.4 Descriptive stats for University of Fort Hare students registered 2012

Faculty:	Total students registered:	Undergraduate study:	Postgraduate study:
Management and Commerce	1483 (23%)	1361 (92%)	122 (8%)
Education	730 (12%)	583 (80%)	147 (20%)
Social Science and Humanities	2105 (33%)	1970 (94%)	135 (6%)
Law	7 (0.001%)	0 (0%)	7 (100%)
Science and Agriculture	2032 (32%)	1838 (90%)	194 (10%)
Total students:	6359 (100%)	5752 (90%)	605 (10%)

In accordance with Hambleton's (2005) recommendations a total sample of 200 first language Xhosa speaking students was required in order to run meaningful statistical analyses. In order to apply proportionate stratified cluster sampling, the required 200 students needed to consist of the same proportions as the total University of Fort Hare student population as indicated in Table 5.2.4. These proportions in percentages were used to generate the required number of participants per faculty and year of study in the target sample and are presented in Table 5.2.5 using the following calculation:

$$\frac{200}{1} \times \frac{x}{100} = y \quad \text{where } x = \text{proportion of the faculty or study level}$$

$$y = \text{the number of participants in the sample}$$

Table 5.2.5 Proportion of participants at University of Fort Hare per faculty and year of study required for the target sample

Faculty:	Total students required:	Undergraduate study:	Postgraduate study:
Management and Commerce	46 (23%)	42 (92%)	4 (8%)
Education	24 (12%)	19 (80%)	5 (20%)
Social Science and Humanities	66 (33%)	62 (94%)	4 (6%)
Law	0 (0.001%)	0 (0%)	0 (100%)
Science and Agriculture	64 (32%)	58 (90%)	6 (10%)
Total target sample:	200 (100%)	181 (90%)	19 (10%)

The University of Fort Hare consists of a total of 30 academic departments. Each academic department was grouped in accordance with faculty and each department within each faculty assigned a sequential number. A random table was then downloaded by [www.stattrek.com](http://www.stattrek.com) comprising these numbers, the first row of which was used to randomly select academic departments from each faculty, for inclusion in the sample. A total of 12 academic departments, representative of each faculty, were randomly selected through proportionate cluster sampling in accordance with the percentage of students registered within each faculty. Permission to sample these departments was requested and obtained from the heads of each of these academic departments.

All years of study within these academic departments were then assigned a sequential number. A random table was then downloaded from [www.stattrek.com](http://www.stattrek.com) comprising of these numbers, the first row of which was used to randomly select the year of study within each academic department to sample the lecture from. The randomly selected departments and lecture year are presented in Table 5.2.6.

Table 5.2.6 Departments and tutorial or seminar groups randomly selected for inclusion in the target sample

Faculty:	Proportion of sample:	Departments:	Tutorial Groups:
Management & Commerce	23%	Accountancy	1 undergrad 2 <sup>nd</sup> year lecture
		Business Management	1 undergrad 3 <sup>rd</sup> year lecture
		Economics postgrad lab	Masters and PhD students
Education	12%	Linguistics and English language	1 undergrad 2 <sup>nd</sup> year lecture
		Education	1 postgrad honours seminar
Soc Sciences & Humanities	33%	Communication	1 undergrad 2 <sup>nd</sup> year lecture
		Social Work	1 undergrad 1 <sup>st</sup> year lecture
		Psychology	1 postgrad honours seminar
Science & Agriculture	32%	Maths	1 undergrad 2 <sup>nd</sup> year lecture
			1 postgrad honours seminar
		Geography	1 undergrad 3 <sup>rd</sup> year lecture
		Geography postgrad lab	Masters and PhD students
		Computer Science	1 undergrad 2 <sup>nd</sup> year lecture
		1 postgrad honours seminar	
		Physics	1 undergrad 1 <sup>st</sup> year lecture

The researcher then visited the randomly selected lectures during the first semester (February – June 2012), explaining the research project and asking students to complete the CORE-OM Xhosa version. Each questionnaire was accompanied by a brief letter of informed consent which emphasised that completion of the questionnaire was voluntary and anonymous (Appendix J). The informed consent form also required students to divulge their age, sex, race, first-language and faculty of study, as well as whether they were presently receiving any form of psychological treatment or intervention. Sampling stopped when the required number of students was reached in accordance with the proportion required per faculty and undergraduate or postgraduate study.

## Data analysis

Completed CORE-OM Xhosa version clinical and non-clinical sample questionnaires including total and domain mean scores for each participant were entered into Microsoft Excel. Each participant entry was checked, and cleaned for export into Statistical Package for the Social Sciences (SPSS) version 16.

The usability of the CORE-OM Xhosa version within a first language Xhosa speaking university student population was investigated by evaluating the percentage of returned questionnaires that were a) completed in full, b) suitable for pro-rating, limited to only 3 omissions and c) unusable, in comparison to the usability of the original CORE-OM English version demonstrated in the Rhodes University first language English and Xhosa speaking student population samples. Chi-square ( $\chi^2$ ) was used as a test of proportions to indicate significant differences in completion rates between the samples (Howell, 2002). University of Fort Hare sample completion rates were represented by the observed score (O) while the Rhodes University sample completion rates were represented by the expected scores (E) in the formula below.

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

Reliability was investigated using internal consistency which was estimated across all four domains using coefficient alpha (Cronbach, 1951). Confidence intervals were used to more accurately demonstrate the range within which differences in alpha estimates fell, based on a confidence level of 95% (Iacobucci & Duhachek, 2003). These confidence intervals were calculated in SPSS. Correlations across domains were also calculated within the first language Xhosa speaking student samples using Spearman's Rho (Howell, 2002). The results were then compared to those obtained by the original CORE-OM English version in the Rhodes University first language English and Xhosa speaking student population samples. The psychometric structure of the CORE-OM Xhosa version was investigated using principal components analysis (Kline, 1994) within the combined first language Xhosa speaking student clinical and non-clinical samples. The results were then compared with those

obtained by the original CORE-OM English version in the Rhodes University first language English and Xhosa speaking student population samples. The data was then converted into descriptive data in the form of means and standard deviations

Discriminant validity of the CORE-OM Xhosa version within a first language Xhosa speaking university student population was evaluated through the CORE-OM Xhosa version's ability to differentiate between a clinical and non-clinical population (Evans et al., 2002). The clinical and non-clinical sample means were compared using t-tests to determine statistically significant difference between the two groups (Howell, 2002) and probability was set at 0.05. Effect sizes (Cohen, 1962) were used to indicate the size of difference between the samples and calculated with G\*Power 3 (Faul, Erdfelder, Lang, & Buchner, 2007). These results were then compared with those obtained by the original CORE-OM English version in the Rhodes University first language English and Xhosa speaking student population sample. Convergent validity was calculated in comparison with the total score from the BDI-II Xhosa version using Spearman's Rho (Howell, 2002). Both the total CORE-OM mean score and the problems or symptoms domain mean score were used for comparison.

While clinical and non-clinical means and standard deviations were used to calculate criteria for clinically significant change (Jacobson & Truax, 1991).

$$\frac{(mean_{clin} \times SD_{norm}) + (mean_{norm} \times SD_{clin})}{SD_{norm} + SD_{clin}}$$

The results were then compared with those obtained by the original CORE-OM English version in the Rhodes University student population sample.

#### 1. Investigating equivalence

In addition ITC guidelines D7, D9 - 10 (Hambleton, 2005) emphasise the need to establish the degree of equivalence between the original and adapted language versions of a psychometric tool in order to allow for the valid comparison of scores across these language versions. While it was not possible to investigate the equivalence of the CORE-OM considering the lack of demonstrated psychometric

structure of the measure, it was possible to investigate equivalence of the CORE-10 English and Xhosa versions.

Structural equation modelling (Byrne, 2001) was then used to investigate the fit of the measurement and structural model established for the South African CORE-10 English version, using the first language Xhosa speaking student sample data generated by the CORE-OM Xhosa version. This analysis was conducted in AMOS version 19. Missing data was replaced using the hotdeck macro for SPSS (Myers, 2011). Psychometric properties of the South African CORE-10 Xhosa version as an embedded measure within the CORE-OM Xhosa version were presented in comparison with those of the South African CORE-10 English version as an embedded measure within the CORE-OM English version. Internal consistency, as well as discriminant and convergent validity were calculated in accordance with the methods outlined above.

## 2. Developing administration and scoring guidelines

ITC guidelines A1-6 and I1-4 recommend that administrative and scoring guidelines be developed in order to assist clinicians and researchers in utilising the adapted tool appropriately (Hambleton, 2005). Process notes used to document the adaptation of the CORE-OM into Xhosa were used to generate administrative and scoring guidelines in line with ITC recommendations (Hambleton, 2005). These process notes documented how the tool was administered in the target populations when generating the referential data, as well as how the tool was scored. In addition the process notes highlighted all changes made to the original CORE-OM English version during adaptation into Xhosa, emphasising difficulties in the translation process that may impact on score interpretation.

### **5.3 Ethical Considerations**

Ethical principles relating to the adaptation of the CORE-OM into Xhosa included the protection of research participants' rights, dignity and wellbeing with regards to their participation in the research project (Barker et al., 2002) and can be summarised into

four main categories namely a) approval from relevant ethics review committees, b) informed consent, c) privacy and confidentiality, and d) avoidance of harm.

**a) Approval from relevant ethics review committees**

Proposed research projects require the approval of research and ethics review committees to ensure the protection of both the participants and the institute the researcher is affiliated with in the research process (Barker et al., 2002). This research project was approved by Rhodes University Higher Degrees Research Committee and the Department of Psychology's Research Proposal and Ethics Review Committee (RPERC) (Appendix D) before any additional stakeholders were contacted regarding the research project. However because the research then extended to counselling centres at the University of Fort Hare and Nelson Mandela Metropolitan University ethical clearance was also obtained from the Deputy Vice Chancellor (Appendix F) and Registrar (Appendix G) at the University of Fort Hare, and the Nelson Mandela Metropolitan University Research Ethics Committee for Humanities (Appendix H).

**b) Informed consent**

Informed consent allows stakeholders and participants to voluntarily make informed decisions about participating in a research project (Barker et al., 2002). Oakland (2005) identifies numerous stakeholders that need to be informed of the aims and intentions to adapt a psychometric tool, including the psychometric tool developer responsible for the psychometric tool's publication and distribution, the team of translators who participate in the adaptation process, the government agencies that govern ethical psychometric practice, and the participants involved in validating the adapted psychometric tool version.

The CORE-OM developers in the UK received a copy of the research proposal and were informed of the intention to adapt the CORE-OM into a Xhosa version using a South African student population sample. Professor Chris Evans, a CORE-OM developer and director responsible for the international translation of the CORE-OM agreed to be part of the adaptation process and presented the researcher with the

translation and normalising guidelines prescribed by the developers when translating the CORE-OM into other languages. All translators involved in the translation design (including the forward/back-translators, members of the qualitative reviews and quality assurance review) were compensated for their involvement but did not retain any copyrights to the finalised Xhosa version. They received acknowledgement on the CORE-OM website as authors of the CORE-OM Xhosa version and members of the translation team.

The Health Professions Council of South Africa (HPCSA), who governs psychometric tool development and registration, was informed of the intention to use the CORE-OM for research purposes. Because the questionnaire was being used for research purposes, was freely available to clinicians from the CORE-OM website and as a result was not being used for profit, the HPCSA agreed via email correspondence to its adaptation without any additional requirements. The directors of all three student counselling centres involved in the piloting of the CORE-OM Xhosa version received a copy of the research proposal and were informed of the nature of the research project. All lecturers who provided access to students for the data collection processes received a brief summary about the research, a copy of the CORE-OM questionnaire (Appendix B) and the student informed consent form (Appendix E or J).

In addition all students who participated in the completion of the CORE-OM English and Xhosa versions were presented with the informed consent form (Appendix E or J) which included a short summary of the aims of the project, highlighting that the completed CORE-OM questionnaires would be used for research and not clinical purposes, and emphasising that completion of the questionnaire was voluntary. Students were informed that this research project was being conducted independently and that the university student counselling centres had no involvement in the study. As a result student participation or a decision not to participate would have no impact on the level of psychological care received at either counselling centre site. In addition all students were informed that anonymity would be guaranteed as participants would only be required to include basic demographics such as sex, age, ethnicity and first language on the CORE-OM questionnaire, excluding their names or identifying data. The form explained that informed consent was implied in completion of the CORE-OM questionnaire.

### **c) Privacy and confidentiality**

Privacy relates specifically to the right to withhold personal information (Barker et al., 2002) and confidentiality relates to the right to have personal information stored in a secure manner to prevent unauthorised individuals from having access to that information (Barker et al., 2002). All completed questionnaires were stored in a secure filing cabinet at the counselling centres until collection by the researcher, who after coding and recording the necessary data electronically filed the questionnaires in a secure filing cabinet in her office where they will be stored for a duration of 5 years and then destroyed.

### **d) Avoidance of harm**

The harm caused as a result of participation in a research project includes direct harm, for example as the result of stress or embarrassment, or the prevention of access to certain benefits such as clinical treatments (Barker et al., 2002). With regards to this research project students were potentially exposed to harm through the completion of the CORE-OM questionnaire in that the reading and answering of question items could invoke emotional reactions in the students. It was decided that individuals would not have access to their scores because the completion of the CORE-OM questionnaire was done with the aim of using the information for research and not clinical use. However students were able to manually calculate their scores which held the potential of misinterpretation and possible distress. Therefore students were informed of the psychological support services available at the student counselling centres within their respective universities and asked to make use of them if they were feeling distressed as a result of answering the questionnaire (Appendix E or J).

## **CONCLUSION**

Drawing from a mixed methods research design this thesis aimed to first establish the degree of adaptation necessary in order to translate the CORE-OM into a valid Xhosa measure of distress. This aim required a qualitative investigation of the

construct bias and equivalence of the original CORE-OM English version, and a quantitative investigation of the construct equivalence of the CORE-OM English version across a UK population and South African first language English, and first language Xhosa speaking student population sample.

Using this preliminary information to guide further adaptation, the CORE-OM was translated into Xhosa drawing from the CORE System Trust translating and normalising guidelines supplemented by ITC guidelines. This translation design included a forward and back-translation process, a committee approach and a three-stage qualitative piloting process. Following translation the CORE-OM Xhosa version was quantitatively piloted on a first language Xhosa speaking student population sample in order to establish its psychometric properties.

The reduced South African CORE-10 was then investigated for equivalence across English and Xhosa language versions in order to generate a tool that allowed for comparison of scores of distress across language versions within South African student populations. Process notes collated during the translation process were used to develop administrative and scoring guidelines in order to standardise the use of the CORE-OM Xhosa version. The results of this research design are presented in the following chapters 6 to 8 of this thesis.

## **CHAPTER 6: RESULTS – INVESTIGATING THE CONSTRUCT BIAS AND EQUIVALENCE OF THE CORE-OM ENGLISH VERSION**

Drawing from the 'context' area within the ITC guidelines (Hambleton, 2005) this study first investigated the construct bias and equivalence of the CORE-OM English version across a UK population sample and a South African English speaking student population sample. Construct bias and equivalence were investigated qualitatively during the committee meetings held with the translation team who developed the initial CORE-OM Xhosa translation. Construct equivalence was concurrently investigated quantitatively through comparison of CORE-OM reliability and validity indicators across a UK student sample and South African first language English, and first language Xhosa speaking student population sample.

In addition the psychometric structure, internal consistency as well as measurement and structural model of the CORE-10 were investigated and cross-validated using the Rhodes University student samples, and group equivalence was investigated across first and second language English use. These results were used to guide the degree of adaptation required in producing a valid Xhosa measure of distress.

### **6.1 Construct bias and equivalence (qualitative investigation)**

The initial team of forward and back-translators was used to conduct the qualitative investigation of construct bias and equivalence inherent in the original CORE-OM English version. This team included two psychiatric nurses from Fort England psychiatric Hospital familiar with psychological assessment procedures, two professional translators from the Grahamstown community, and two Rhodes University students representative of the target population. As a result the team was able to comment on both psychological and linguistic requirements of the tool, as well as the relevance of the content with respect to the target population and language. Not all members of the team were able to attend the first committee meeting, and as a result the two Rhodes University students and one professional translator attended the first meeting, while one psychiatric nurse and the other professional translator attended the second meeting. The second psychiatric nurse attended an individual

meeting with the researcher as he was unable to make either of the other meeting times.

Each translator had performed either a forward or back translation of the CORE-OM, and was familiar with the contents of the questionnaire. During each committee meeting the translators were asked to comment on the relevance and meaningfulness of the individual CORE-OM English version instructions, response format and questionnaire items as indicators of general distress within a first language Xhosa speaking population. They were asked to identify difficult English words or phrases that may prove problematic during translation, and make suggestions about changes to the English version before further translation, in order to improve the validity of the Xhosa version.

Three main concerns were raised during these meetings. Firstly, it was noted by one of the Rhodes University students that the original CORE-OM English version made use of English words that differed in degrees of intensity, in order to evaluate degrees of psychological distress. For example the likert scale descriptions used to differentiate frequency of experiences of symptoms ranged from “not at all” to “most or all of the time”. The student explained that it was not possible to find direct linguistic Xhosa translation equivalents for these terms and that the selection of conceptually equivalent phrases for these descriptions would be a challenge during the translation process. When asked if it was necessary to change the original CORE-OM English version the translation team members suggested improvising Xhosa concepts that would be understood correctly when read in combination with the likert scale numbers and tick boxes instead. They felt that the forward translations generated for each likert scale description would assist them in finding the appropriate combination to achieve conceptual equivalence.

Secondly, one of the Rhodes University students highlighted that university students would likely be familiar with the CORE-OM questionnaire format, instructions and response format, but, he explained that when it came to translating the individual CORE-OM questionnaire items, translators needed to be specific about vocabulary choice. He emphasized that the Xhosa language is fluid, comprising of numerous dialects that differ in degrees of colloquialism and idiom use. He described simple

Xhosa as more accessible across African languages, drawing from English, Afrikaans and other African languages to supplement vocabulary use, making it popular in urban, multi-cultural contexts. While deep Xhosa he described as making more frequent use of colloquialisms and idioms, resulting in it being less accessible to those who are not first-language Xhosa speakers, and more popular in traditional Xhosa contexts. For example, when translating the English word “form”, a simple Xhosa translation may use the word “le fomu” while a deep Xhosa translation would use the Xhosa word ‘oluxwebhu’ referring to an official document requiring completion. Because the CORE-OM translation was aimed at first-language Xhosa speaking students within university contexts the student suggested the translation focus on drawing specifically from more traditional Xhosa vocabulary that would be comprehensible to first-language Xhosa speakers, while at the same time avoiding colloquialisms and idioms that may cause confusion across Xhosa dialects.

The second Rhodes University student added that Xhosa is a language that differs significantly between its written and spoken form. He explained that pronunciation and intonation of Xhosa words, as well as the mannerisms and body language used during spoken communication impact significantly on the meaning being conveyed. However during written communication when readers are solely reliant on text to establish meaning, linguistic equivalence needs to be carefully balanced with conceptual equivalence during translation, using short, concise sentences and appropriate syntax to ensure that the correct meaning is clearly being communicated. Reviewing the individual CORE-OM questionnaire items the translators believed that the current sentence structure was appropriate and would allow for a high level of linguistic and conceptual equivalence in Xhosa.

Thirdly, one of the psychiatric nurses noted that within state mental healthcare hospital settings Xhosa speaking patients were entering into a healing context that was very different from more traditional, indigenous healing interactions, and these patients reported finding it challenging to access the appropriate vocabulary and terminology to communicate with doctors and mental healthcare workers within these settings. He explained that Xhosa speaking patients often found it difficult to use appropriate terminology in both English and Xhosa to communicate their psychological distress to mental healthcare practitioners, particularly when English

was not their first language, and instead would describe psychological symptoms through physical manifestations in areas of their bodies, for example, in the form of headaches and stomach aches, but did not connect these physical symptoms with emotional experiences of anxiety and depression which in certain cases proved to be the underlying cause. He also noted that on occasions there were no equivalent Xhosa words available for affective English terminology, and in these instances Xhosa descriptions of these concepts was necessary in order to achieve conceptual equivalence. The translator highlighted that these limitations may impact on the translation process. This same point was raised by translators during the first committee meeting, however the translators suggested that instead of replacing the original CORE-OM English vocabulary, the translators draw from conceptually equivalent Xhosa phrases used during the forward translation process to assist in communicating the English terminology accurately.

At the conclusion of the committee meetings it was evident that the translators considered the CORE-OM to be a relevant and meaningful tool for evaluating psychological distress within the Xhosa language. While some challenges were identified, the translators did not feel it necessary to alter the original CORE-OM English version in order to generate a valid Xhosa translation. Concurrent to these discussions with the translation team, the CORE-OM English versions was quantitatively investigated for construct equivalence.

## **6.2 Construct equivalence (quantitative investigation)**

The quantitative investigation of the CORE-OM English version took place in two stages. First, the CORE-OM English version was completed by Rhodes University students representative of both a clinical and non-clinical population as described in Chapter 4. First language English and Xhosa students were then extracted from this sample and used to investigate the reliability and validity of the CORE-OM English version within these South African student population language demographics in comparison to psychometric data from the original UK referential population samples. Next, the whole Rhodes University sample was randomly split into two groups. Group A was used to investigate the psychometric structure, internal consistency as well as the measurement and structural model of the CORE-10. Group B was then used to

cross validate this model and investigate group equivalence across clinical and non-clinical population membership and first and second language English use.

**a) Comparison of the reliability and validity of the CORE-OM across UK and South African student population samples**

First language English speaking student sample

The South African first language English speaking student sample comprised a total of 416 students who completed CORE-OM questionnaires. This sample included students from both a clinical and non-clinical population.

1. Clinical sample

A total of 202 questionnaires were completed by first language English speaking students from the Rhodes University student counselling centre during the second semester (July – December) of 2010. Of these questionnaires 185 (92%) were completed in full, 13 (6%) contained one item omitted, 2 (1%) contained two items omitted, and 2 (1%) were unusable due to omissions of 3 items or more, or omission of more than 1 item within the same domain. These figures are summarised in table 6.2.1. Thus, a total of 200 usable CORE-OM questionnaires were collected from this demographic of first language English speaking clinical sample students.

Table 6.2.1 Total Rhodes University first language English speaking student clinical sample

Total completed questionnaires:	All CORE-OM items completed:	1 item omitted:	2 items omitted:	3 items omitted:	Unusable: excess of three omitted
202	185 (92%)	13 (6%)	2 (1%)	0 (0%)	2 (1%)

This clinical sample included 53 (26%) male and 147 (74%) female students ranging in age between 18-34 years with a mean age of 20.6 years. Of the total sample 127 (64%) were white, 41 (21%) were black, 16 (8%) coloured and 15 (8%) Indian. These demographics are presented in Table 6.2.3 in comparison with the non-clinical sample and the total Rhodes University student population registered for 2010.

## 2. Non-clinical sample

A total of 214 questionnaires were completed by first language English speaking students sampled across 34 small group tutorials from 14 academic departments within 6 faculties at Rhodes University using random stratified cluster sampling during the second semester of 2010. Of these questionnaires 198 (93%) were completed in full, 11 (5%) contained one item omitted, 1 (0.5%) contained two items omitted, and 4 (2%) were unusable due to omissions of 3 items or more, or omission of more than 1 item within the same domain. These figures are summarised in table 6.2.2. A total of 210 usable CORE-OM questionnaires were collected from this demographic of first language English speaking non-clinical sample students.

Table 6.2.2 Total Rhodes University first language English speaking student non-clinical sample

Total completed questionnaires:	All CORE-OM items completed:	1 item omitted:	2 items omitted:	3 items omitted:	Unusable: excess of three omitted:
214	198 (93%)	11 (5%)	1 (0.5%)	0 (0%)	4 (2%)

This non-clinical sample included 102 (49%) male and 108 (51%) female students ranging in age between 18-47 years with a mean age of 21.6 years. Of the total sample 161 (77%) were white, 29 (14%) were black, 12 (6%) coloured and 8 (4%) Indian. A total of 26 (12%) students were currently receiving psychotherapeutic treatment. These demographics are presented in Table 6.2.3 in comparison with the clinical sample and the total Rhodes University student population registered for 2010.

Table 6.2.3 Rhodes University samples and the total Rhodes University student population for 2010.

	Rhodes University first language English speaking		Total Rhodes University population for 2010
	Clinical sample	Non-clinical sample	
n:	200	210	7213
Age:	Range: 18-34 Mean: 20.6 years	Range: 18-47 Mean: 21.6 years	Range: 16-72 Mean: 23.8 years
Sex:	Male: 56 (26%) Female: 147 (74%)	Male: 102 (49%) Female: 108 (51%)	Male: 2964 (41%) Female: 4249 (59%)
Race:	White: 127 (64%) *Black: 73 (36%)	White: 161 (77%) *Black: 49 (23%)	White: 3066 (43%) *Black: 4147 (57%)
First Language:	200 (100%) 1 <sup>st</sup> Language English	210 (100%) 1 <sup>st</sup> Language English	4038 (56%) 1 <sup>st</sup> Language English

\* Including all students previously disadvantaged by Apartheid (Black African, Indian, and Coloured)

A comparison of the Rhodes University first language English speaking student clinical and non-clinical samples with the total Rhodes University student population registered for 2010 revealed the following: Firstly a younger range of students were represented in the clinical sample in comparison with the student population. This finding is commensurate with university student counselling centre utilisation profiles generated at the University of Cape Town by Flisher, De Beer and Bokhorst (2002) during 1991-1993 and at the University of the Witwatersrand in Johannesburg, generated by Bowman and Payne (2011) in 2008. These profiles indicated that 20-25 year old students were most likely to utilise university counselling centre services, particularly undergraduate students and first year students, as older students were considered to be better adjusted to university life and more likely to have long term romantic partners and friends who they drew emotional support from.

Within the clinical sample a chi-square test of proportions revealed that female students were significantly over-represented in comparison with male students proportionately, in relation to the student population ( $\chi^2(1) = 15.4, p < 0.05$ ). This finding is again commensurate with Flisher et al.'s (2002) and Bowman and Payne's (2011) university student counselling centre utilisation profiles where significantly more female students utilised university student counselling centre services in comparison with their male counterparts illustrating an international trend of

increased utilisation of psychotherapy services by female clients. White students were also significantly overrepresented proportionately in comparison with black students ( $\chi^2(1) = 46.8, p < 0.05$ ). This finding is contrary to the utilisation profiles documented by Flisher et al. (2002) and Bowman and Payne (2011), who report increased utilisation of student counselling centres by black, second language English speaking students. Although their samples were not stratified by language use, which in the case of the Rhodes University first language English speaking student sample may account for the proportion of white to black students represented in this sample.

Within the non-clinical sample a younger range of students were represented in comparison with the student population. A chi-square test of proportions revealed that male students were significantly over-represented in comparison with female students proportionately, in relation to the student population ( $\chi^2(1) = 5.0, p < 0.05$ ), while white students were also significantly overrepresented proportionately in comparison to black students ( $\chi^2(1) = 98.0, p < 0.05$ ). Again the disproportionate representation of white to black students within this sample may be due to the inclusion of first language English speakers exclusively within this sample. In addition discrepancies in sample representativeness may also be compounded by sampling error and the design effect occurring during the cluster sampling process. Even though numerous steps were taken to compensate for the design effect including stratification of the sample and drawing from numerous small group tutorials during the sampling process (Raudenbush, 1997), the tutorial groups randomly selected for sampling constituted a disproportionate number of students that were not representative of the total Rhodes University population.

However, while the Rhodes University first language English speaking student non-clinical sample was not proportionately representative of the Rhodes University student population for 2010 with respect to age, sex and race, the sample was able to provide an indication of the construct equivalence of the CORE-OM English version within a first language English speaking student sample from a historically white, English medium South African university within the Eastern Cape.

### First language Xhosa speaking student sample

The South African first language Xhosa speaking student sample comprised a total of 90 students who completed CORE-OM questionnaires. This sample again included students from both a clinical and non-clinical population.

#### 1. Clinical sample

A total of 46 CORE-OM English version questionnaires were completed by first language Xhosa speaking students sampled from the Rhodes University student counselling centre during the second semester of 2010. Of these 40 (87%) were completed in full, 1 (2%) contained one item omitted, and 5 (11%) were unusable due to omissions of 3 items or more, or omission of more than 1 item within the same domain. These figures are summarised in table 6.2.4. A total of 41 usable CORE-OM questionnaires were collected from this demographic of first language Xhosa speaking clinical sample students.

Table 6.2.4 Total Rhodes University first language Xhosa speaking student clinical sample

Total completed questionnaires:	All CORE-OM items completed:	1 item omitted:	2 items omitted:	3 items omitted:	Unusable: excess of three omitted
46	40 (87%)	1 (2%)	0 (0%)	0 (0%)	5 (11%)

This clinical sample included 8 (20%) male and 33 (80%) female students ranging in age between 18-46 years with a mean age of 20.1 years. Of the total sample 41 (100%) were black. These demographics are presented in Table 6.2.6 in comparison with the first language Xhosa speaking non-clinical student sample and the demographics of the total Rhodes University student population for 2010.

#### 2. Non-clinical sample

A total of 44 questionnaires were completed by first language Xhosa speaking students sampled across 34 small group tutorials from 14 academic departments within 6 faculties at Rhodes University using random stratified cluster sampling during

the second semester of 2010. Of these questionnaires 40 (91%) were completed in full, 3 (7%) contained one item omitted, and 1 (2%) was unusable due to omissions of 3 items or more, or omission of more than 1 item within the same domain. These figures are summarised in table 6.2.5. A total of 43 usable CORE-OM questionnaires were collected from this demographic of first language Xhosa speaking non-clinical sample students.

Table 6.2.5 Total Rhodes University first language Xhosa speaking student non-clinical sample

Total completed questionnaires:	All CORE-OM items completed:	1 item omitted:	2 items omitted:	3 items omitted:	Unusable: excess of three omitted
44	40 (91%)	3 (7%)	0 (0%)	0 (0%)	1 (2%)

This non-clinical sample included 12 (28%) male and 31 (72%) female students ranging in age between 18-44 years with a mean age of 20.6 years. Of the total sample 43 (100%) were black. A total of 3 (7%) students were currently receiving psychotherapeutic treatment. These demographics are presented in Table 6.2.6 in comparison with the first language Xhosa speaking clinical student sample and demographics of the total Rhodes University student population for 2010.

Table 6.2.6 Rhodes University samples and the total Rhodes University student population for 2010.

	Rhodes University first language Xhosa speaking		Total Rhodes University population of 2010
	Clinical sample	Non-clinical sample	
n:	41	43	7213
Age:	Range: 18-46 Mean: 20.1 years	Range: 18-44 Mean: 20.6 years	Range: 16-72 Mean: 23.8 years
Sex:	Male: 8 (20%) Female: 33 (80%)	Male: 12 (28%) Female: 31 (72%)	Male: 2964 (41%) Female: 4249 (59%)
Race:	White: 0 (0%) *Black: 41 (100%)	White: 0 (0%) *Black: 43 (100%)	White: 3066 (43%) *Black: 4147 (57%)
First Language:	41 (100%) 1st Language Xhosa	43 (100%) 1 <sup>st</sup> Language Xhosa	1385 (19%) 1 <sup>st</sup> Language Xhosa

\* Including all students previously disadvantaged by Apartheid (Black African, Indian, and Coloured)

Commensurate with the findings within the Rhodes University first language English speaking student clinical sample a younger range of students was represented in the first language Xhosa speaking student clinical sample, and an overrepresentation of female students ( $\chi^2(1) = 8.2, p < 0.05$ ) in comparison with the student population. A younger range of students was also represented in the non-clinical sample, while a chi-square test of proportions revealed that male and female students were proportionately represented in comparison with the total Rhodes University student population ( $\chi^2(1) = 3.44, p > 0.05$ ). All students within the first language Xhosa speaking clinical and non-clinical population samples were black.

### Psychometric properties

The psychometric properties of the CORE-OM English version within a South African first language English, and first language Xhosa speaking student population sample, were investigated in comparison with the original UK referential data documented by Evans et al. (2002) and a UK student population sample documented by Connell et al. (2007a). These samples are compared in tables 6.2.7 and 6.2.8 below.

Table 6.2.7 Rhodes University clinical student samples and UK referential data documented by Evans et al. (2002) and Connell et al. (2007a)

	Evans et al. (2002) UK clinical sample	Connell et al. (2007) UK student clinical sample	Rhodes University 1 <sup>st</sup> Lang English clinical sample	Rhodes University 1st Lang Xhosa clinical sample
n:	890	1109	200	41
Age:	Range: 16-78 Mean: 36 years	Range: 16-64	Range: 18-34 Mean: 20.6 years	Range: 18-46 Mean: 20.1 years
Sex:	Male: 344 (39%) Female: 530 (60%)	Male: 321 (29%) Female: 788 (71%)	Male: 56 (26%) Female: 147 (74%)	Male: 8 (20%) Female: 33 (80%)
Race:		White: 859 (77%) *Black: 250 (23%)	White: 127 (64%) *Black: 73 (36%)	White: 0 (0%) *Black: 41 (100%)

\* Including all students previously disadvantaged by Apartheid (Black African, Indian, and Coloured)

Table 6.2.8 Rhodes University non-clinical student samples and original UK referential data provided by Evans et al. (2002)

	Evans et al. (2002) non-clinical sample	Rhodes University 1 <sup>st</sup> Lang English non-clinical sample	Rhodes University 1 <sup>st</sup> Lang Xhosa non-clinical sample
n:	1106	210	43
Age:	Range: 14-45 Mean: 20.5	Range: 18-47 Mean: 21.6 years	Range: 18-44 Mean: 20.6 years
Sex:	Male: 498 (45%) Female: 601 (54%)	Male: 102 (49%) Female: 108 (51%)	Male: 12 (28%) Female: 31 (72%)
Race:		White: 161 (77%) *Black: 49 (23%)	White: 0 (0%) *Black: 43 (100%)

### 1. Usability

Of the total number of CORE-OM questionnaires distributed in the Rhodes University first language English speaking student clinical population sample 92% (185) were completed in full, while 93% (198) of the CORE-OM questionnaires distributed in the non-clinical sample were completed in full. In comparison, the original UK referential data documented by Evans et al (2002) reports that 80% of CORE-OM questionnaires distributed to the UK clinical population sample were completed in full while 91% of the UK non-clinical population sample questionnaires were completed in full. These results indicate no significant difference in completion rate within the Rhodes University first language English speaking student samples in comparison with the UK samples ( $\chi^2(1) = 3.32, p > 0.05$ ).

With prorating applied 99% (200) of the questionnaires distributed in the Rhodes University first language English speaking student clinical sample and 98% (210) distributed in the non-clinical sample were usable. These figures correspond with the original UK referential data within which 97% of the UK clinical population sample questionnaires and 98% of the UK non-clinical population sample questionnaires were usable (Evans et al., 2002). The results are summarised in table 6.2.9.

Within the Rhodes University first language Xhosa speaking student clinical sample 87% (40) of CORE-OM English version questionnaires were completed in full, while

91% (40) of the CORE-OM questionnaires distributed in the non-clinical sample were completed in full. These results indicate no significant difference in completion rate within the Rhodes University first language Xhosa speaking student samples in comparison with the Rhodes University first language English speaking student samples ( $\chi^2(1) = 0.13, p > 0.05$ ) and the UK samples ( $\chi^2(1) = 1.08, p > 0.05$ ). With prorating applied 89% (41) of the questionnaires distributed in the Rhodes University first language Xhosa speaking student clinical sample and 98% (43) distributed in the non-clinical sample were usable. The results are also summarised in table 6.2.9.

Table 6.2.9 Summary of usability of CORE-OM English version within the Rhodes University student samples and the original UK referential data

CORE-OM	Rhodes University student samples				UK referential data Evans et al. (2002)	
	Clinical		Non-clinical		Clinical	Non-clinical
	1st Lang English	1st Lang Xhosa	1st Lang English	1st Lang Xhosa		
Completed	202	46	214	44	890	1106
Usable	200 (99%)	41 (89%)	210 (98%)	43 (98%)	863 (97%)	1084 (98%)
Unusable	2 (1%)	5 (11%)	4 (2%)	1 (2%)	27 (3%)	22 (2%)

These findings suggest that the CORE-OM English version was well received and showed good usability in terms of readability and ease of use within both the South African first language English and Xhosa speaking student population samples. The low error omission rate, demonstrated by the high usability reported, suggests that CORE-OM questionnaire items were understandable and meaningful to both the first language English and Xhosa speaking students, indicating that the discourse used to describe and conceptualise distress within the CORE-OM is transportable to both these South African population demographics.

## 2. Characteristics of the data

Within the Rhodes University samples the data was investigated for independence, normality and homogeneity of variance in accordance with the assumptions underlying the use of parametric tests for analysis.

### *Independence:*

The Rhodes University clinical sample was collected at the Rhodes University Student Counselling Centre using a consecutive sampling method while the non-clinical sample was collected within small group tutorials across Rhodes University campus using random, stratified cluster sampling. As a result the data sets were independently collected and the data collection processes did not bias the inclusion of any one case over another. Scores assigned to the individual cases were generated independently by the participants in a self-reporting manner. These data collection methods allowed the Rhodes University samples to adhere to the first parametric assumption described by Keselman, Algina, Lix, Wilcox and Deering (2008) as the assumption that data used to generate means for one group are statistically independent from the data used to generate means for the other group, and within the groups data collected from individual participants are statistically independent from one another.

### *Normality*

Tabachnick and Fidell (2007) explain that the second parametric assumption of normality is assessed in terms of skewness or the symmetry of the distribution of data determined by the mean, and kurtosis or the peakedness of the distribution of data. When populations are normally distributed skewness and kurtosis should equal zero. The skewness and kurtosis for the Rhodes University first language English and Xhosa speaking clinical and non-clinical samples across total and all domain mean scores are presented in table 6.2.10.

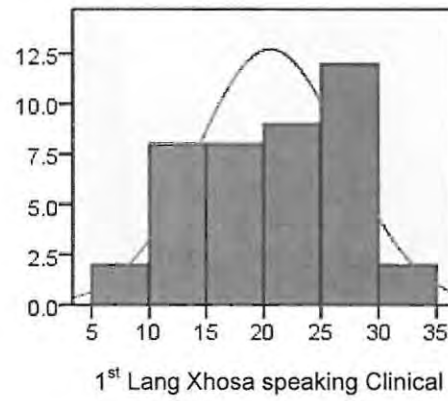
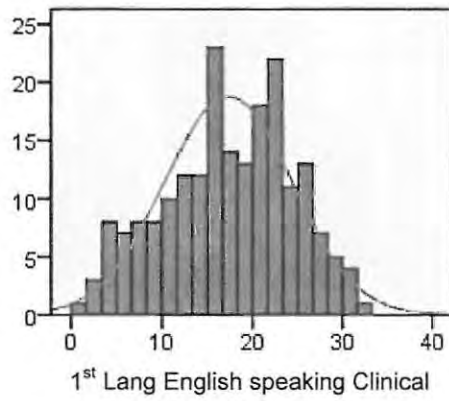
Table 6.2.10 Skewness coefficients and Kurtosis for the Rhodes clinical and non-clinical samples across total and all domain mean scores

	Rhodes University Clinical Samples				Rhodes University Non-Clinical Samples			
	1 <sup>st</sup> Lang English		1 <sup>st</sup> Lang Xhosa		1 <sup>st</sup> Lang English		1 <sup>st</sup> Lang Xhosa	
	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis
Subjective Wellbeing:	-0.45	-0.47	-0.46	-0.33	0.63	-0.18	0.29	-0.70
Problems/ Symptoms:	-0.42	-0.40	-0.49	-0.55	0.71	-0.26	0.85	0.34
Life Functioning:	-0.05	-0.50	0.16	0.09	1.00	0.66	0.47	-0.39
<b>Risk:</b>	<b>1.68</b>	<b>2.91</b>	<b>0.90</b>	<b>-0.32</b>	<b>3.09</b>	<b>12.86</b>	<b>2.25</b>	<b>4.20</b>
Non-risk item (28 item)	-0.38	-0.53	-0.32	-0.44	0.77	-0.10	0.74	0.05
All items (34 items):	-0.26	-0.64	-0.16	-0.32	0.88	0.21	0.97	0.57

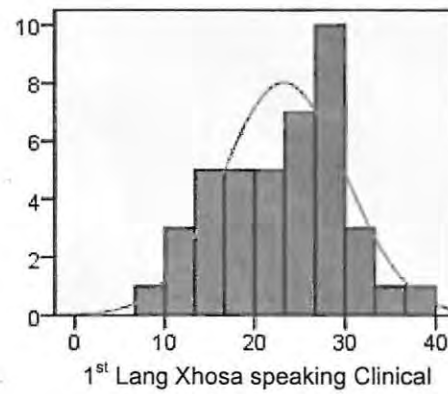
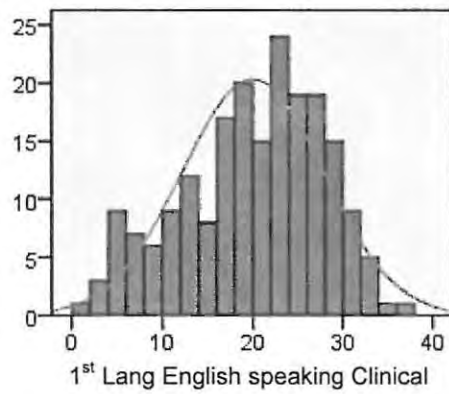
Skewness statistics for the Rhodes University clinical samples across the total, non-risk and domain means (except the risk domain) ranged between – 0.49 and 0.16 and kurtosis statistics ranged between - 0.64 and 0.09, indicating minor deviations from normality in the form of slightly negatively skewed and peaked distributions. However the risk domain demonstrated a strongly positively skewed and flat distribution across both the first language English and Xhosa speaking clinical samples. In comparison skewness statistics for the Rhodes University non-clinical sample across total, non-risk and domain means (except the risk domain) ranged between 0.29 and 1.0, and kurtosis statistics ranged between -0.70 and 0.66, indicating positively skewed and peaked distributions. The risk domain again demonstrated a strongly positively skewed and flat distribution.

However Wilkinson et al. (1999, pp. 598) caution against the use of “distributional tests and statistical indexes of shape” alone when investigating normality. Tabachnick and Fidell (2007) agree and recommend graphic investigations of distributions. The distributions of the Rhodes University first language English and Xhosa speaking student clinical samples across total, non-risk and all domain means are presented in histograms 1-6.

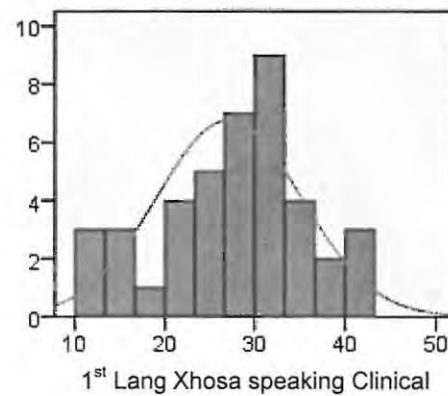
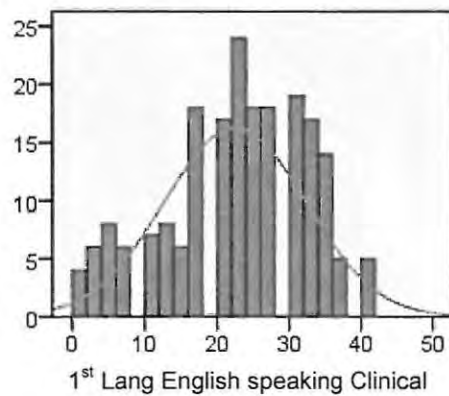
Histogram 1 Total Mean



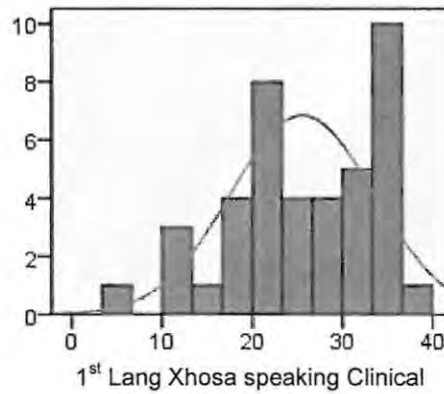
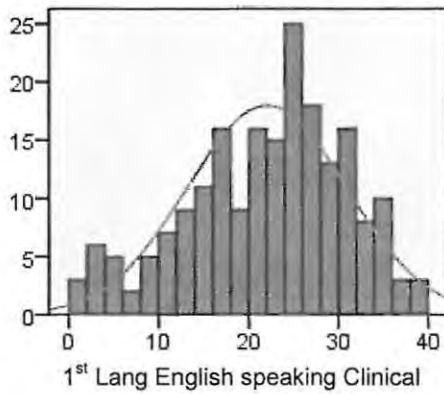
Histogram 2 Non-risk Mean



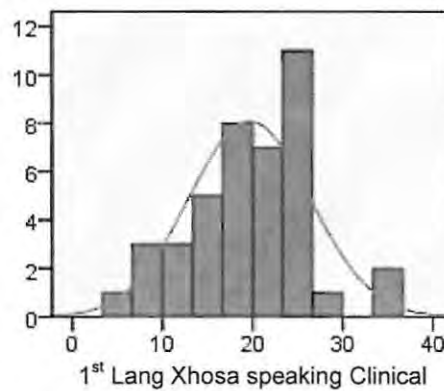
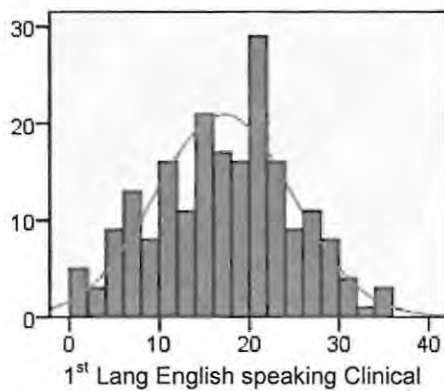
Histogram 3 Subjective Wellbeing Mean



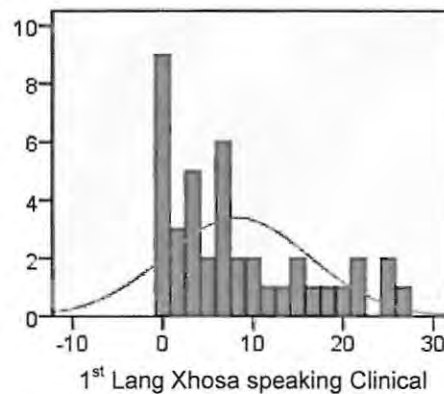
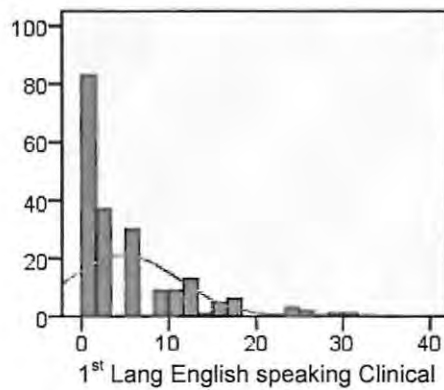
Histogram 4 Problems or Symptoms Mean



Histogram 5 Life Functioning Mean



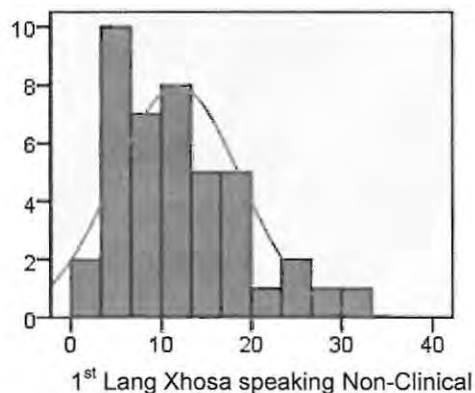
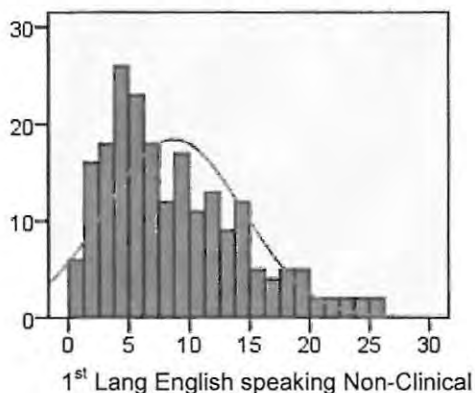
Histogram 6 Risk Mean



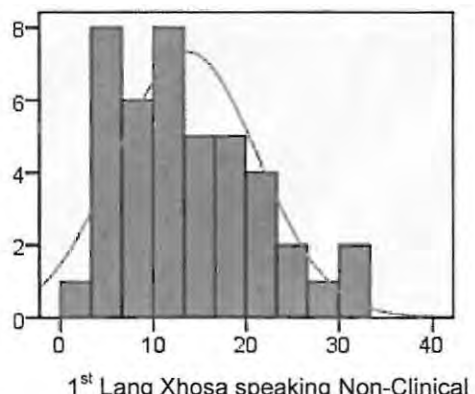
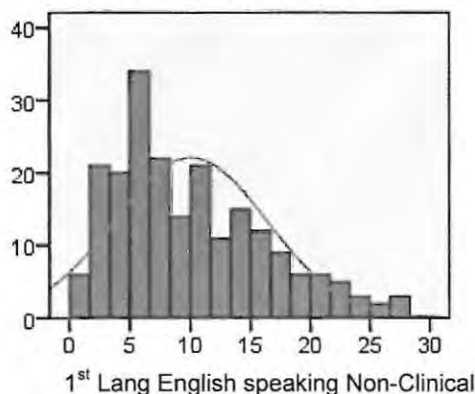
These histograms demonstrate minor deviations from normality for the total, non-risk, subjective wellbeing, problems or symptoms and life functioning domain means with slightly negatively skewed and peaked distributions, while the risk domain demonstrated a severe deviation from normality with positively skewed and flat distributions in both the first language English and Xhosa speaking student clinical samples. These findings are commensurate with the statistical indexes in table

6.2.10. The distributions of the Rhodes University first language English and Xhosa speaking student non-clinical samples across total, non-risk and domain means are presented in histograms 7-12 below.

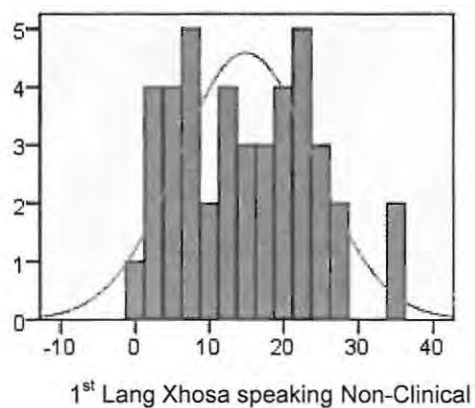
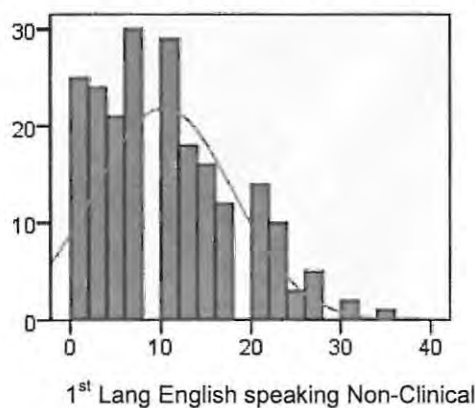
Histogram 7 Total CORE-OM Mean



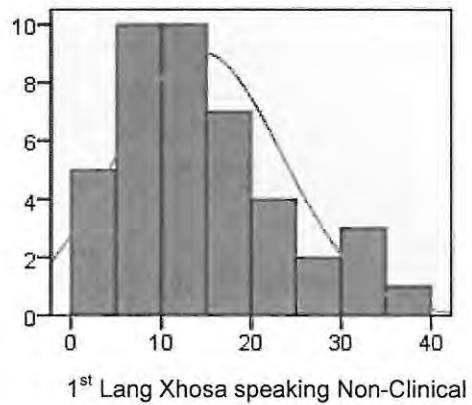
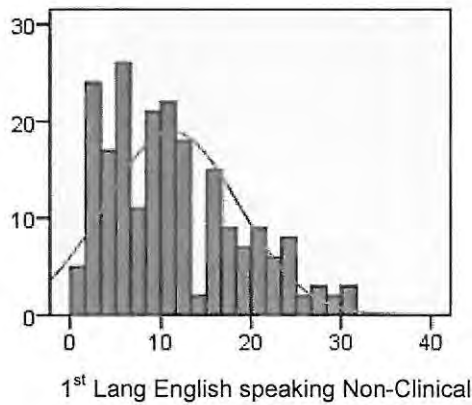
Histogram 8 Non-risk CORE-OM Mean



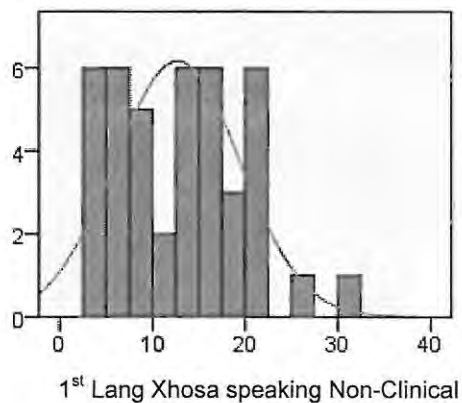
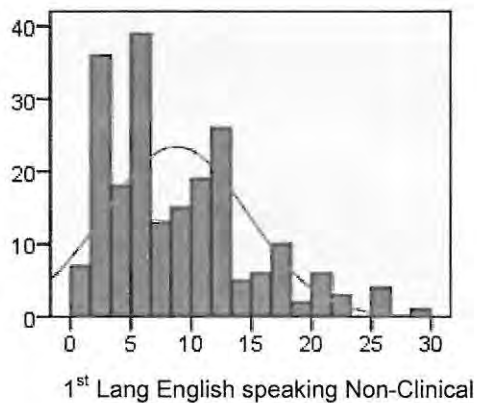
Histogram 9 Subjective Wellbeing Mean



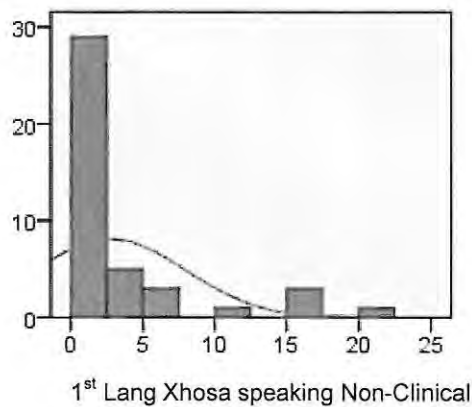
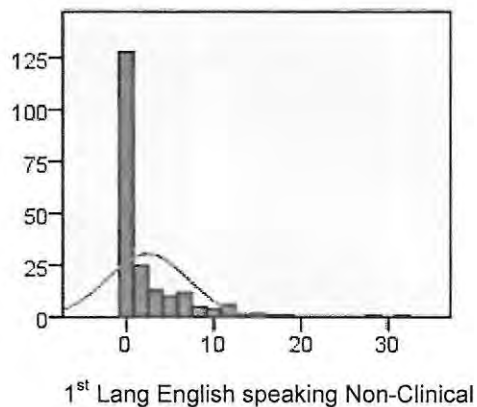
Histogram 10 Problems or Symptoms Mean



Histogram 11 Life Functioning Mean



Histogram 12 Risk Mean



These histograms demonstrate more considerable deviations from normality for the total, non-risk, subjective wellbeing, problems or symptoms and life functioning domain means with multi-modal, lumpy, positively skewed and peaked distributions within the first language English and Xhosa speaking student non-clinical samples, while the risk domain demonstrated a severe deviation from normality with a positively skewed and flat distribution. These findings are again commensurate with

the statistical indexes in table 6.2.10. Histograms 1-12 in combination with the statistical indexes presented in table 6.2.10 demonstrate that the assumption of normality was violated by both the Rhodes University samples.

### *Homogeneity of variance*

Tabachnick and Fidell (2007) explain that normally distributed populations have similar variance, and a failure of homogeneity can easily result from non-normality of one or both population samples. The results of an investigation of the homogeneity of variance between the Rhodes University first language English and Xhosa speaking student clinical and non-clinical samples using Levene's Test for Equality of Variance (Howell, 2002) are presented in tables 6.2.11 and 6.2.12.

Table 6.2.11 Levene's Test of Homogeneity of variance between the Rhodes University first language English speaking samples

	Rhodes University	Rhodes University	Difference	
	1 <sup>st</sup> Lang Eng Clin n= 200	1 <sup>st</sup> Lang Eng Non-Clin n=210	Levene's F	ρ value
<b>Subjective Wellbeing:</b>	<b>96.4</b>	<b>58.9</b>	<b>10.2</b>	<b>0.00</b>
<b>Problems/ Symptoms:</b>	<b>78.8</b>	<b>54.4</b>	<b>6.2</b>	<b>0.01</b>
<b>Life Functioning:</b>	<b>58.1</b>	<b>35.5</b>	<b>13.1</b>	<b>0.00</b>
<b>Risk:</b>	<b>39.7</b>	<b>21.0</b>	<b>22.0</b>	<b>0.00</b>
<b>Non-risk items (28 items):</b>	<b>61.7</b>	<b>40.1</b>	<b>9.5</b>	<b>0.00</b>
<b>All items (34 items):</b>	<b>50.1</b>	<b>32.3</b>	<b>11.1</b>	<b>0.00</b>

Table 6.2.12 Levene's Test of Homogeneity of variance between the Rhodes University first language Xhosa speaking samples

	Rhodes University	Rhodes University	Difference	
	1 <sup>st</sup> Lang Xhosa Clin n= 41	1 <sup>st</sup> Lang Xhosa Non-Clin n=43	Levene's F	ρ value
<b>Subjective Wellbeing:</b>	<b>64.9</b>	<b>83.4</b>	<b>2.1</b>	<b>0.15</b>
<b>Problems/ Symptoms:</b>	<b>63.5</b>	<b>85.3</b>	<b>0.6</b>	<b>0.42</b>
<b>Life Functioning:</b>	<b>45.6</b>	<b>46.2</b>	<b>0.9</b>	<b>0.34</b>
<b>Risk:</b>	<b>65.1</b>	<b>26.9</b>	<b>11.4</b>	<b>0.00</b>
<b>Non-risk items (28 items):</b>	<b>46.3</b>	<b>58.1</b>	<b>0.9</b>	<b>0.34</b>
<b>All items (34 items):</b>	<b>41.3</b>	<b>49.4</b>	<b>0.3</b>	<b>0.60</b>

The research hypothesis stated that if the variance between the Rhodes University student clinical and non-clinical samples was homogeneous then no statistically significant differences would be evident between the samples. The null hypothesis was therefore that the variance between the Rhodes University student clinical and non-clinical samples was homogeneous. The alternative hypothesis stated that the variance between the Rhodes University student clinical and non-clinical samples was not homogeneous. A significance level of  $p \leq 0.05$  was applied and two-tailed statistical tests were selected because the researcher did not have prior information about the parameter of the two population samples. Significant differences were evident between the Rhodes University clinical and non-clinical samples within both the first language English and Xhosa speaking samples across totals and domains except for the variance of 'all items' within the first language Xhosa speaking samples, indicating the violation of the assumption of homogeneity of variance within the Rhodes University samples.

### 3. Reliability

Reliability of the CORE-OM English version within the South African student population samples was investigated using internal consistency applying Cronbach's alpha (Cronbach, 1951). The CORE-OM English version demonstrated high internal consistency across the Rhodes University first language English speaking student samples achieving a Cronbach alpha of 0.94 for the overall scale of global psychological distress and Cronbach alphas greater than or equal to 0.70 across all domains, except the subjective wellbeing domain within the non-clinical sample (0.69). Lower Cronbach alphas were demonstrated in comparison to the original UK referential data presented by Evans et al. (2002) particularly within the risk domain of the clinical sample (0.74) and the subjective wellbeing domain (0.69) within the non-clinical sample. Although, Cronbach alphas for the risk domain remained acceptable and overlapped with the confidence intervals of the UK samples, while the lowered Cronbach alpha (0.69) for the subjective wellbeing domain within the non-clinical population sample fell just short of the 0.70 cut-off recommended by Nunnally and Bernstein (1994). However the confidence interval of this domain did not overlap with that of the UK non-clinical sample. These results are presented in Table 6.2.13.

Table 6.2.13 Internal consistency within the Rhodes first language English speaking student samples and the UK referential data (Evans et al., 2002).

Domains	Rhodes University 1 <sup>st</sup> Lang English student samples		UK referential data (Evans et al., 2002)	
	Clinical n= 200	Non-clin n= 210	Clinical n= 713	Non-clin n= 1009
	Cronbach's $\alpha$ (CI : 95)	Cronbach's $\alpha$ (CI : 95)	Cronbach's $\alpha$ (CI : 95)	Cronbach's $\alpha$ (CI : 95)
<b>Subjective Wellbeing:</b>	0.77 (0.71-0.82)	<b>0.69 (0.61-0.75)</b>	0.75 (0.72-0.78)	<b>0.77 (0.75-0.79)</b>
Problems/ Symptoms:	0.89 (0.86-0.91)	0.89 (0.87-0.91)	0.88 (0.87-0.89)	0.90 (0.89-0.91)
Life Functioning:	0.85 (0.82-0.88)	0.84 (0.81-0.87)	0.87 (0.86-0.88)	0.86 (0.85-0.87)
Risk:	0.74 (0.68-0.80)	0.77 (0.72-0.82)	0.79 (0.77-0.81)	0.79 (0.77-0.81)
Non-risk items (28 items):	0.94 (0.93-0.95)	0.94 (0.93-0.95)	0.94 (0.93-0.95)	0.94 (0.93-0.95)
All items (34 items):	0.94 (0.93-0.95)	0.94 (0.93-0.95)	0.94 (0.93-0.95)	0.94 (0.93-0.95)

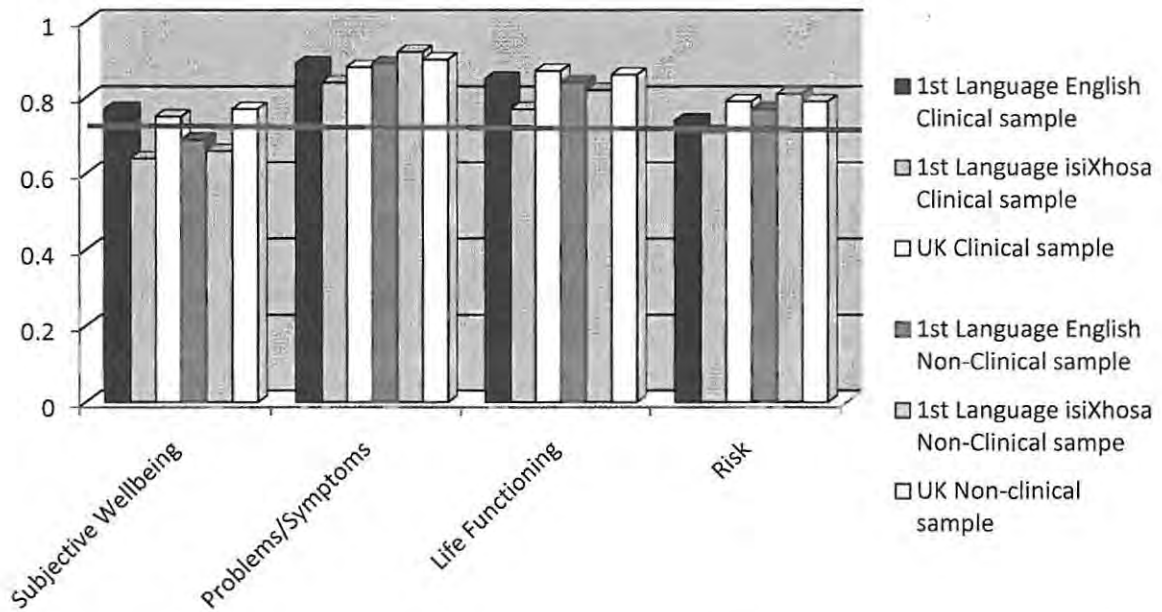
Within the Rhodes University first language Xhosa speaking student samples an investigation of internal consistency demonstrated Cronbach alphas greater than or equal to 0.70 across the total and all domain mean scores except the subjective wellbeing domain. These results are presented in table 6.2.14. Within the subjective wellbeing domain both clinical (0.64) and non-clinical (0.66) samples produced lower cronbach alphas and confidence intervals were considerably larger than those of the first language English speaking samples.

Table 6.2.14 Internal consistency within the Rhodes first language English and Xhosa speaking student samples

Domains	Rhodes University student samples			
	1 <sup>st</sup> Lang English sample		1 <sup>st</sup> Lang Xhosa sample	
	Clinical n= 200	Non-clin n= 210	Clinical n= 41	Non-clinical n= 43
	Cronbach's $\alpha$ (CI : 95)	Cronbach's $\alpha$ (CI : 95)	Cronbach's $\alpha$ (CI : 95)	Cronbach's $\alpha$ (CI : 95)
<b>Subjective Wellbeing:</b>	0.77 (0.71-0.82)	<b>0.69 (0.61-0.75)</b>	<b>0.64 (0.41-0.79)</b>	<b>0.66 (0.45-0.80)</b>
Problems/ Symptoms:	0.89 (0.86-0.91)	0.89 (0.87-0.91)	0.84 (0.76-0.90)	0.92 (0.88-0.95)
Life Functioning:	0.85 (0.82-0.88)	0.84 (0.81-0.87)	0.77 (0.64-0.86)	0.82 (0.72-0.89)
Risk:	0.74 (0.68-0.80)	0.77 (0.72-0.82)	0.71 (0.55-0.83)	0.81 (0.71-0.89)
Non-risk items (28 items):	0.94 (0.93-0.95)	0.94 (0.93-0.95)	0.91 (0.86-0.94)	0.94 (0.91-0.96)
All items (34 items):	0.94 (0.93-0.95)	0.94 (0.93-0.95)	0.91 (0.87-0.95)	0.95 (0.92-0.97)

A summary of the comparison of Cronbach alpha estimates obtained within the South African student population samples and the original UK referential data documented in Evans et al. (2002) are presented in graph 1.

Graph 1 Internal consistency of the CORE-OM English version



The total scale and non-risk scale across both the clinical and non-clinical samples within both the Rhodes University first language English and Xhosa speaking student samples demonstrated high Cronbach alphas. The Cronbach alphas for the problems or symptoms and life functioning domains were also high, while the risk domain obtained acceptable Cronbach alphas across the Rhodes University samples. These results suggest good internal consistency of the CORE-OM across both a clinical and non-clinical, first language English and Xhosa speaking student sample with respect to these three domains, indicative of good construct equivalence across the UK and South African samples. However the subjective wellbeing domain demonstrated lowered internal consistency across the Rhodes University samples suggesting that these items may contain construct bias that make them less meaningful within South African samples, particularly first language Xhosa speaking student samples, in comparison to UK samples.

Correlations across the CORE-OM domains within the first language English and Xhosa speaking student clinical and non-clinical samples were compared with those

documented within the original UK referential data (Evans et al., 2002) using Spearman's Rho (Howell, 2002) and are presented in table 6.2.15.

Table 6.2.15 Correlations across CORE-OM domains

Domain	Spearman's Rho							
	SWB		P/S		L/F		Risk	
	Clin	Non-Clin	Clin	Non-Clin	Clin	Non-Clin	Clin	Non-Clin
<b>RU First language English samples</b>								
Subjective wellbeing SWB	1.0	1.0						
Problems/Symptoms P/S	<b>0.80</b>	<b>0.77</b>	1.0	1.0				
Life Functioning L/F	<b>0.75</b>	<b>0.79</b>	<b>0.77</b>	<b>0.78</b>	1.0	1.0		
Risk	0.46	0.43	0.47	0.52	0.44	0.48	1.0	1.0
<b>RU First language Xhosa samples</b>								
Subjective wellbeing SWB	1.0	1.0						
Problems/Symptoms P/S	<b>0.68</b>	<b>0.80</b>	1.0	1.0				
Life Functioning L/F	0.57	<b>0.69</b>	<b>0.80</b>	<b>0.82</b>	1.0	1.0		
Risk	0.18	<b>0.64</b>	0.49	<b>0.77</b>	0.51	0.69	1.0	1.0
<b>UK referential samples (Evans et al., 2002)</b>								
Subjective wellbeing SWB	1.0	1.0						
Problems/Symptoms P/S	<b>0.77</b>	<b>0.78</b>	1.0	1.0				
Life Functioning L/F	<b>0.73</b>	<b>0.73</b>	<b>0.74</b>	<b>0.75</b>	1.0	1.0		
Risk	0.33	0.58	0.42	0.59	0.43	0.60	1.0	1.0

While correlations across the subjective wellbeing, problems or symptoms and life functioning domains within the Rhodes University first language English speaking student samples were high, and commensurate with the correlations across domains documented in the UK referential data by Evans et al. (2002), these findings, in combination with the high internal consistency of the full scale and non-risk domains suggest an over-inclusion of similar item content within the CORE-OM, as was noted by Lyne et al. (2006) and Bedford et al. (2010). The CORE-OM could likely be reduced to a shorter version, like the CORE-10 (Barkham et al., 2012) and maintain its reliability within the Rhodes University first language English speaking student population samples.

However while correlations across the problems or symptoms and life functioning domains within the Rhodes University first language Xhosa speaking student samples were high, lower correlations were evident across the subjective wellbeing

and the other non-risk domains. These results, in combination with the internal consistency of the subjective wellbeing domain within the Xhosa samples, again suggest that the subjective wellbeing items may contain construct bias that makes them less meaningful within South African first language Xhosa speaking student samples, specifically clinical samples. A shorter version of the CORE-OM, like the CORE-10 (Barkham et al., 2012) that negates the subjective wellbeing domain, would likely provide improved construct equivalence within the Rhodes University first language Xhosa speaking student samples.

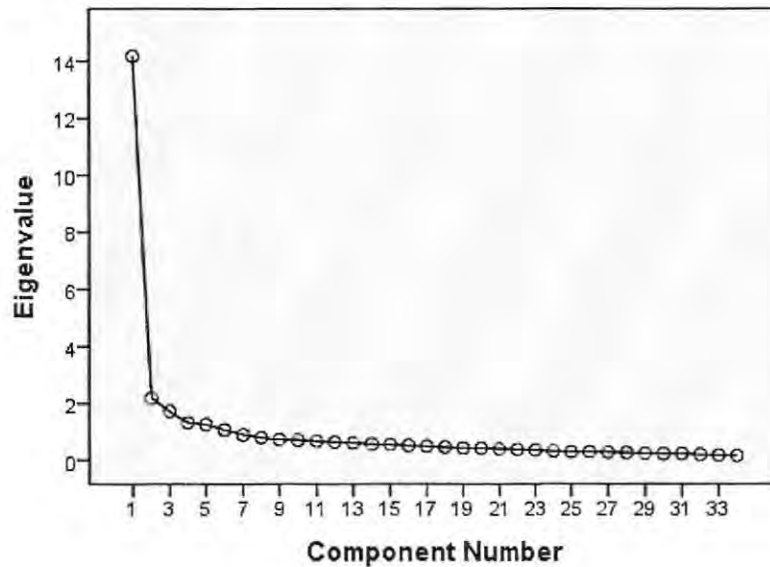
#### 4. Validity

The validity of the CORE-OM within a South African first language English and Xhosa speaking student population sample was investigated in terms of both psychometric structure of the tool and discriminant validity.

##### *Psychometric Structure*

The psychometric structure of the CORE-OM English version within the Rhodes University first language English and Xhosa speaking student samples was investigated using principal components analysis. Kline (1994) explains that principal components analysis extracts principal components from a correlation matrix in order to make sense of the correlations by accounting for all the variance within that sample matrix. Kline (1994) suggests a sample size of at least 100 where the ratio of participants to questionnaire items is at least 2:1. The first language English speaking student clinical and non-clinical samples were combined resulting in a total of 380 usable CORE-OM questionnaires, falling well within the recommended sample size. The scree plot indicated one dominant component that accounted for 41.7% of the total variance, with five additional smaller components with Eigenvalues greater than 1. These results are illustrated in scree plot 1.

Scree Plot 1: Principal components analysis of the Rhodes University first language English speaking student sample



Factors were rotated using oblique direct oblimin rotation which allowed the axes to take any position (Kline, 1994). Within a sample size greater than 100 factor loadings greater than or equal to 0.3 are considered significant (Kline, 1994; Brown, 2006). The dominant component, indicative of general distress, comprised 14 negatively worded questionnaire items with moderate to high factor loadings, drawn predominantly from the problems or symptoms domain. The second component comprised risk to self items, while the third included 8 positively worded items indicative of healthy functioning, with moderate to high factor loadings, drawn predominantly from the life functioning domain. High cross loadings across the gross distress and healthy functioning components for items 4 (“I have felt OK about myself”), 7 (“I have felt able to cope when things go wrong”), 10 (“Talking to people has felt too much for me”) and 11 (“Tension and anxiety have prevented me doing important things”) suggested poor differentiation of these items across these two factors (Brown, 2006). It is likely that the positive and negative wording of items impacted on correlations between these items, causing them to cluster together (Brown, 2006). These results are summarised in table 6.2.16.

Table 6.2.16 Principle components analysis: first language English speaking sample

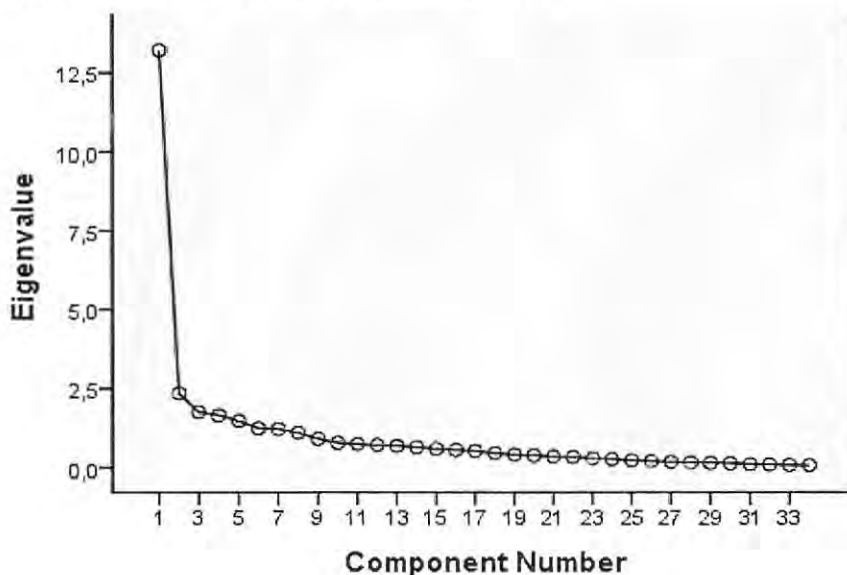
Item No	Item	Domain	+/-	Component					
				1 42%	2 6.4%	3 5.0%	4 3.9%	5 3.6%	6 3.1%
14.	I have felt like crying	Sub Wellbeing	-	0.83					
20.	My problems are impossible to put aside	Prob/Symptoms	-	0.75					
2.	I have felt tense, anxious or nervous	Prob/Symptoms	-	0.73					
17.	I have felt overwhelmed by my problems	Sub Wellbeing	-	0.71					
15.	I have felt panic or terror	Prob/Symptoms	-	0.71					
28.	Unwanted images/memories distressed me	Prob/Symptoms	-	0.67					
23.	I have felt despairing or helpless	Prob/Symptoms	-	0.66					
13.	I have been disturbed by unwanted thoughts	Prob/Symptoms	-	0.63					
27.	I have felt unhappy	Prob/Symptoms	-	0.58					
11.	<b>Tension/anxiety have prevented me</b>	<b>Prob/Symptoms</b>	-	<b>0.57</b>			<b>0.34</b>		
1.	I have felt terribly alone or isolated	Life Function	-	0.54					
5.	I have felt lacking in energy/enthusiasm	Prob/Symptoms	-	0.46					
18.	I have difficulty sleeping	Prob/Symptoms	-	0.46					
10.	<b>Talking to people has felt too much</b>	<b>Life Function</b>	-	<b>0.37</b>			<b>0.22</b>		
30.	<b>I have thought I am to blame for problems</b>	<b>Prob/Symptoms</b>	-	<b>0.29</b>	<b>0.27</b>				
16.	I have made plans to end my life	Risk to self	-		0.92				
9.	I have thought of hurting myself	Risk to self	-		0.84				
24.	I have thought it were better if I were dead	Risk to self	-		0.82				
34.	<b>I have hurt myself or taken risks</b>	<b>Risk to self</b>	-		<b>0.62</b>	<b>0.33</b>			
6.	<b>I have been physically violent with others</b>	<b>Risk to others</b>	-			<b>0.79</b>			
22.	<b>I have threatened/intimidated another</b>	<b>Risk to others</b>	-			<b>0.74</b>			
32.	I have achieved the things I wanted to	Life Function	+				0.81		
31.	I have felt optimistic about my future	Sub Wellbeing	+				0.75		
12.	I have been happy with things I have done	Life Function	+				0.70		
21.	I have been able to do things I've needed	Life Function	+				0.61		
7.	<b>I have felt able to cope if things go wrong</b>	<b>Life Function</b>	<b>+</b>	<b>0.44</b>			<b>0.50</b>		
3.	<b>I have felt I have support</b>	<b>Life Function</b>	<b>+</b>				<b>0.47</b>	<b>0.36</b>	
4.	<b>I have felt OK about myself</b>	<b>Sub Wellbeing</b>	<b>+</b>	<b>0.28</b>			<b>0.47</b>		
19.	<b>I have felt warmth/affection for someone</b>	<b>Life Function</b>	<b>+</b>				<b>0.44</b>		<b>0.24</b>
33.	I have felt humiliated by other people	Life Function	-					0.79	
25.	I have felt criticised by others	Life Function	-					0.72	
26.	I have thought I have no friends	Life Function	-					0.58	
8.	I have been troubled by aches/pains	Prob/Symptoms	-			0.27			0.87
29.	I have been irritable when with others	Life Function	-						0.45

Item 30 (“I have thought I am to blame for my problems”) did not load significantly on any component, suggesting that the item is not a meaningful indicator of distress within the South African first language English speaking student sample. This same item was removed from the CORE-OM during reduction to the CORE-10 due to low response rates in UK samples (Barkham et al., 2012). While items 6 (“I have been

physically violent with other people”) and 22 (“I have threatened or intimidated another person”) loaded as an independent component, as did items 25 (“I have felt criticised by others”), 26 (“I have thought I have no friends”) and 33 (“I have felt humiliated by other people”), and items 8 (“I have been troubled by aches and pains”) and 29 (“I have been irritable when with other people”). Brown (2006) highlights that at least 4 items should load on a particular factor in order for that factor to be meaningful. These loadings suggest that these questionnaire items do not load meaningfully in evaluating distress within the South African first language English speaking student sample. Interestingly these same items were removed from the CORE-10 as other items were considered more meaningful indicators of general distress (Barkham et al., 2012).

The psychometric structure of the CORE-OM English version within the Rhodes University first language Xhosa speaking student samples is presented next. The first language Xhosa speaking student clinical and non-clinical samples were combined resulting in a total of 80 usable CORE-OM questionnaires. While this sample size fell below Kline’s (1994) recommended size of 100, the sample exceeded the ration of 2 participants per questionnaire item. The results of the scree plot are illustrated in Scree plot 2.

Scree Plot 2: Principal components analysis of the Rhodes University first language Xhosa speaking student sample



The scree plot indicated one dominant component that accounted for 39% of the total variance, with seven additional smaller components with Eigenvalues greater than 1. Factors were again rotated using oblique direct oblimin rotation (Kline, 1994). These results are summarised in table 6.2.17.

Table 6.2.17 Principal components analysis: first language Xhosa speaking sample

Item No	Item	Domain	+ /-	Component								
				1 39%	2 6.9%	3 5.2%	4 4.9%	5 4.3%	6 3.7%	7 3.6%	8 3.2%	
14.	I have felt like crying	SWB	-	0.79								
1.	I have felt terribly alone or isolated	LF	-	0.78								
18.	I have difficulty sleeping	P/S	-	0.73								
27.	I have felt unhappy	P/S	-	0.70								
23.	I have felt despairing or helpless	P/S	-	0.69								
20.	My problems are impossible to put aside	P/S	-	0.63								
4.	I have felt OK about myself	SWB	+	0.62								
2.	I have felt tense, anxious or nervous	P/S	-	0.45								
17.	I have felt overwhelmed by my problems	SWB	-	0.44								
28.	Unwanted images/memories distressed	P/S	-	0.41	0.32							
10.	Talking to people has felt too much	LF	-	0.40	0.34							
29.	I have been irritable when with others	LF	-	0.40	0.36							
13.	I am disturbed by unwanted thoughts	P/S	-	0.38	0.20							
16.	I have made plans to end my life	RS	-		0.87							
9.	I have thought of hurting myself	RS	-		0.86							
24.	I have thought it were better if I were dead	RS	-		0.73							
34.	I have hurt myself physically or taken risks	RS	-		0.71							
3.	I have felt I have support	LF	+		0.44	0.22						
6.	I have been physically violent with others	RO	-			0.80						
22.	I have threatened/intimidated another	RO	-			0.73						
33.	I have felt humiliated by other people	LF	-				0.61					
25.	I have felt criticised by others	LF	-				0.56					
31.	I have felt optimistic about my future	SWB	+				0.54	0.37				
26.	I have thought I have no friends	LF	-				0.51					
32.	I have achieved the things I wanted to	LF	+					0.84				
21.	I have been able to do things I've needed	LF	+					0.80				
7.	I have felt able to cope if things go wrong	LF	+					0.52				
30.	I have thought I am to blame for problems	P/S	-					0.52				
12.	I have been happy with things I have done	LF	+					0.49				
11.	Tension/anxiety have prevented me	P/S	-				0.20	0.26	0.25			0.23
8.	I have been troubled by aches/pains	P/S	-						0.86			
19.	I have felt warmth and affection for someone	LF	+							0.82		
15.	I have felt panic or terror	P/S	-									0.60
5.	I have felt lacking in energy/enthusiasm	P/S	-									0.58

The dominant component, indicative of general distress, comprised 13 mostly negatively worded questionnaire items with moderate to high factor loadings, drawn across the subjective wellbeing, problems or symptoms and life functioning domains. The second component comprised risk to self items, while the third included 5 mostly positively worded items indicative of healthy functioning, with moderate to high factor loadings, drawn predominantly from the life functioning domain.

The high cross loadings for items 10 (“Talking to people has felt too much for me”), 13 (“I have been disturbed by unwanted thoughts and feelings”), 28 (“Unwanted images or memories have distressed me”) and 29 (“I have been irritable when with other people”) across components 1 and 2, item 3 (“I have felt I have support”) across components 2 and 3, item 31 (“I have felt optimistic about my future”) across components 4 and 5, and item 11 (“Tension and anxiety have prevented me doing important things”) across components 4, 5, 6 and 8 suggested poor differentiation of these items across factors (Brown, 2006). While the limited number of items that loaded on components 3, 4, 6, 7 and 8 were not sufficient enough to consider these as meaningful factors.

As a result 16 CORE-OM questionnaire items loaded in similar ways across similar factors within both the Rhodes University first language English and Xhosa speaking student samples. Items 1, 2, 14, 17, 18, 20, 23 and 27 loaded within the general distress component across both samples, while items 9, 16, 24 and 34 loaded on the same risk to self component, and items 7, 12, 21 and 32 loaded on the same healthy functioning component. These findings suggest some overlap of the construct of gross distress as measured by the CORE-OM across these two population demographics, but also some differences that would need to be further investigated. A tool like the CORE-10 (Barkham et al., 2012) with a more clearly defined psychometric structure would allow for direct comparison across these two samples.

### *Discriminant Validity*

The discriminant validity of the CORE-OM English version within a South African student population sample was established by investigating the CORE-OM’s ability to differentiate between the Rhodes University first language English and Xhosa

speaking student clinical and non-clinical samples (Evans et al., 2002). This process required the comparison of CORE-OM mean scores across the clinical and non-clinical samples. The research hypothesis stated that if discriminant validity of the CORE-OM English version within a South African first language English and Xhosa speaking student population sample was high then the CORE-OM would demonstrate statistically significant differences in total and domain mean scores between the clinical and non-clinical samples.

The null hypothesis was therefore that the CORE-OM total and domain mean scores did not differ across the clinical and non-clinical samples, or that the mean of the clinical sample was equal to the mean of the non-clinical sample:  $H_0: \mu_{\text{clin}} = \mu_{\text{non-clin}}$ . The alternative hypothesis was therefore that the CORE-OM total and domain mean scores demonstrated statistically significant differences across the clinical and non-clinical samples:  $H_1: \mu_{\text{clin}} \neq \mu_{\text{non-clin}}$ . A significance level of  $p \leq 0.5$  was applied. Two-tailed tests were selected because the researcher did not have prior information about the parameter of the two population samples.

Howell (2002) highlights that while the Student's t or the independent samples t test is typically used to determine whether mean scores are significantly different from each other, the validity of this test is determined by whether data meet the underlying parametric assumptions. From the investigation of the data characteristics of the Rhodes University first language English and Xhosa speaking student samples it is evident that the data meet the first parametric assumption of independence, but violate the assumptions of normality and homogeneity of variance.

In addition Kaplan and Saccuzzo (2009) note that the use of ordinal data generated from likert scales to produce meaningful descriptive statistics in the form of means and standard deviations that are then analysed using parametric tests has traditionally been criticised. Stevens (1946) initially introduced the concept of measurement scales and proposed a relationship between measurement scales and the statistical procedures used to analyse the resultant data. In particular Stevens (1946) highlighted that nominal and ordinal measurement scales generate data in rank order, and that no meaning can be assigned to the intervals between the ranked points resulting in no meaningful shape of frequency distribution of the data.

For this reason Stevens (1946) explained that data generated from nominal and ordinal measurement scales can only be analysed using non-parametric statistical procedures, while interval and ratio measurement scales produce meaningful intervals between data points that can be converted into meaningful frequency distributions. Therefore data generated from interval and ratio measurement scales can be analysed using parametric statistical procedures.

However Gaito (1980) notes that Stevens' (1946) reasoning is the result of a misunderstanding between measurement theory and statistical theory, and that psychological measurement scales are not related to statistical techniques in that measurement scale properties "do not enter into any mathematical requirements for the various statistical procedures" (pp. 564). As Jaccard and Wan (1996) explain, and Tabachnick and Fidell (2007) reiterate, if the data produced from a measurement scale demonstrates interval level properties then the data should be treated at interval level.

The CORE-OM questionnaire is structured in the form of a likert scale which is a rating scale that generates data using an ordinal scale of measurement. The individual item responses generated from the likert scale are then converted into total and domain mean scores. These mean scores are then combined across a population sample and converted into descriptive statistics in the form of means and standard deviations in order to allow for further comparisons using inferential statistics. These scores are characteristic of interval scale data in that meaningful intervals exist between mean score increments. As a result analysis of the CORE-OM mean scores across the Xhosa and English versions using parametric tests is appropriate.

However Wilcox and Keselman (2003) and Erceg-Hurn and Mirosevich (2008) caution that the use of parametric tests in spite of the violation of assumptions of normality and homogeneity of variance can result in increased type I error, or the erroneous rejection of the null hypothesis through the generating of inaccurate p-values. Tabachnick and Fidell (2007) define robustness as the correct rejection of the null hypothesis at the determined alpha level the correct number of times, irrespective of the violation of the assumption of normal distribution.

The t test has been shown to be robust to violations of normality when sample sizes are equal and distributions are similarly shaped (Boneau, 1960), although Micceri (1989) highlights that the distributions used within studies to investigate the robustness of the t test excluded distributions typically encountered in psychological research such as multi-modality and lumpiness. In response to Micceri's (1989) comment Sawilowsky and Blair (1992) investigated the robustness of the t test using distributions of multi-modality and lumpiness and demonstrated that the t-test is robust to the violation of the assumption of normality of these distributions when two-tailed t-tests are used with sample sizes that are equal or nearly equal and fairly large (30 participants upwards). Both the Rhodes University first language English and Xhosa speaking student samples fulfil these stipulations. In addition Sawilowsky and Blair (1992) note that under these conditions violation of the assumption of normality does not lead to reduced statistical power.

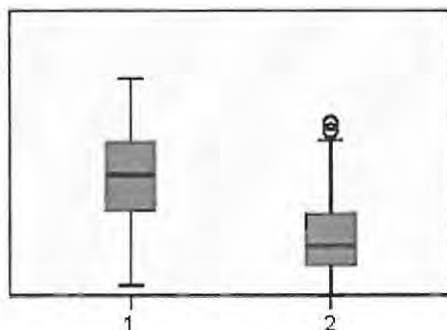
In instances where both the assumptions of normality and homogeneity of variance are violated Zimmerman (1998) demonstrates that the Welch separate variances version of the t test is most robust in controlling type I error. Stonehouse and Forrester (1998) agree. As a result the independent samples t test assuming unequal variance was used to investigate the discriminant validity of the CORE-OM within the Rhodes University first language English and Xhosa speaking student samples. Wilcox and Keseman (2003) add that increased sample sizes also increase the power of the analysis, controlling for type II error. The results of these analyses are presented in tables 6.2.18 and 6.2.19. Effect sizes (Cohen 1962) with corresponding confidence intervals (Gardner & Altman, 1986) were used to demonstrate the size of difference between the two population samples in each language group. In accordance with Cohen (1988) 0.2 was regarded as a small effect size, 0.5 as medium and 0.8 as large.

Table 6.2.18 Comparison of CORE-OM mean scores and standard deviations within the Rhodes first language English speaking student clinical and non-clinical samples

Domains	Rhodes 1 <sup>st</sup> Lang		ρ value	Differences	
	English Clinical n= 200 Mean (SD)	English Non-clin n=210 Mean (SD)		Effect size Cohen's <i>d</i>	Confidence Interval CI: 95
<b>Subjective Wellbeing:</b>	<b>22.5 (9.8)</b>	<b>10.3 (7.7)</b>	<b>0.00</b>	<b>1.4</b>	<b>10.5 – 13.9</b>
<b>Problems/ Symptoms:</b>	<b>22.0 (8.9)</b>	<b>11.2 (7.4)</b>	<b>0.00</b>	<b>1.3</b>	<b>9.2 – 12.4</b>
<b>Life Functioning:</b>	<b>17.2 (7.6)</b>	<b>8.7 (6.0)</b>	<b>0.00</b>	<b>1.2</b>	<b>7.1 – 9.7</b>
<b>Risk:</b>	<b>4.8 (6.3)</b>	<b>2.4 ( 4.6)</b>	<b>0.00</b>	<b>0.4</b>	<b>1.4 – 3.5</b>
<b>Non-risk items:</b>	<b>20.0 (7.9)</b>	<b>10.0 (6.3)</b>	<b>0.00</b>	<b>1.4</b>	<b>8.6 – 11.4</b>
<b>All items (34 items):</b>	<b>17.3 (7.1)</b>	<b>8.7 (5.7)</b>	<b>0.00</b>	<b>1.3</b>	<b>7.4 – 9.9</b>

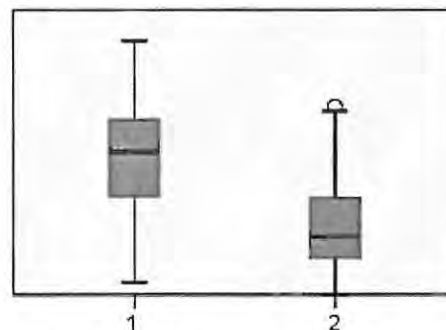
Statistically significant ( $p < 0.05$ ) differences were demonstrated between the Rhodes University first language English speaking clinical and non-clinical samples. Large effect sizes were indicated across the total and non-risk mean scores and the subjective wellbeing, problems or symptoms and life functioning domains, while a small to medium effect size was demonstrated between the risk domains across the two samples. The differences in clinical and non-clinical sample mean scores are further illustrated in box plots 1-6 below.

Boxplot 1 Total



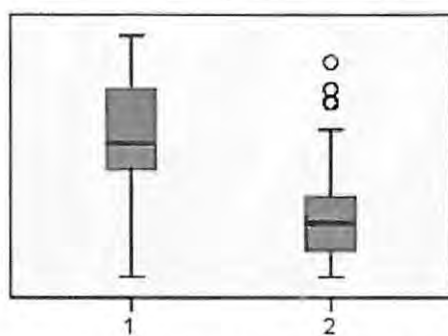
Total: Clinical (1) and Non-Clinical (2) Samples

Boxplot 2 Non-Risk



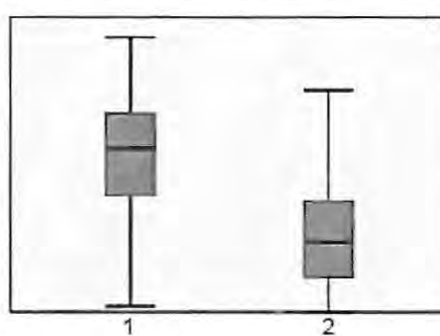
Non-Risk: Clinical (1) and Non-Clinical Samples

Boxplot 3 Subjective Wellbeing



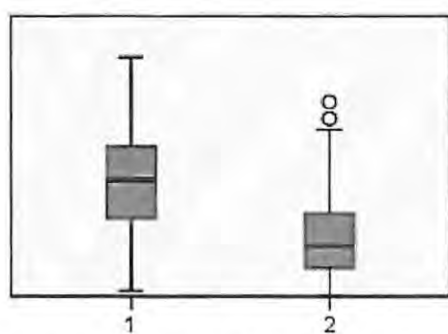
Subjective Wellbeing: Clinical (1) and Non-Clinical (2) Samples

Boxplot 4 Problems or Symptoms



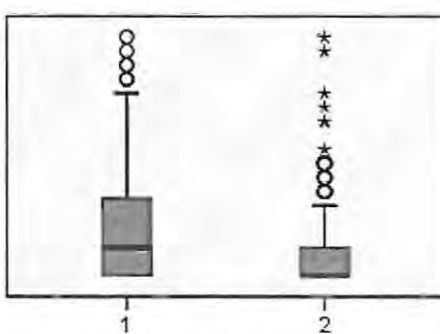
Problems or Symptoms: Clinical (1) and Non-Clinical (2) Samples

Boxplot 5 Life Functioning



Life Functioning: Clinical (1) and Non-Clinical (2) Samples

Boxplot 6 Risk



Risk: Clinical (1) and Non-Clinical (2) Samples

These results indicate that the CORE-OM English version was able to clearly differentiate between a clinical and non-clinical population within the Rhodes University first language English speaking student samples across total, non-risk, and all domains, demonstrating high discriminant validity of the tool within this South African demographic.

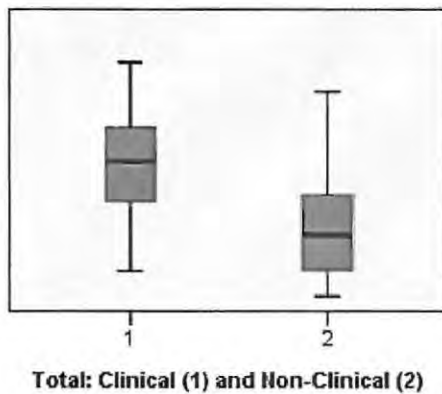
Statistically significant ( $p < 0.05$ ) differences were also demonstrated between the Rhodes University first language Xhosa speaking clinical and non-clinical samples. Large effect sizes were indicated across the total and non-risk mean scores and all domains. These results are presented in table 6.2.19 and again indicate that the CORE-OM English version was able to clearly differentiate between a clinical and non-clinical population within the Rhodes University first language Xhosa speaking student samples across total, non-risk, and all domains, demonstrating high discriminant validity of the tool within this South African demographic too.

Table 6.2.19 Comparison of CORE-OM mean scores within Rhodes first language Xhosa speaking student clinical and non-clinical samples

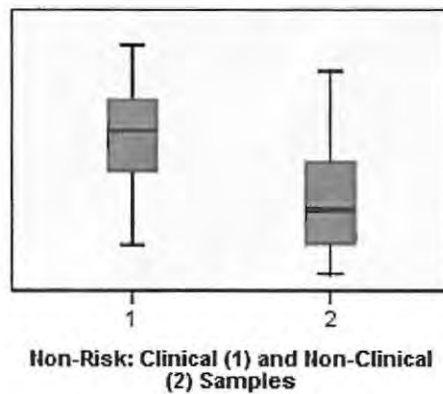
Domains	Rhodes 1 <sup>st</sup> Lang		p value	Differences	
	Xhosa Clinical	Xhosa Non-clin		Effect size Cohen's <i>d</i>	Mean difference CI: 95
	n= 41 Mean (SD)	n=43 Mean (SD)			
Subjective Wellbeing:	27.1 (8.0)	15.2 (9.2)	0.00	1.4	8.2 – 15.7
Problems/ Symptoms:	25.5 (8.0)	14.6 (9.5)	0.00	1.2	7.1 – 14.7
Life Functioning:	20.0 (6.6)	13.1 (7.4)	0.00	1.0	3.4 – 9.6
Risk:	8.3 (2.7)	2.7 ( 5.1)	0.00	1.4	2.6 – 8.5
Non-risk items (28 items):	23.2 (6.8)	13.9 (8.0)	0.00	1.3	6.1 – 12.5
All items (34 items):	20.6 (6.4)	12.1 (7.2)	0.00	1.2	5.6 – 11.5

Differences in clinical and non-clinical sample mean scores are further illustrated in box plots 7-12 below.

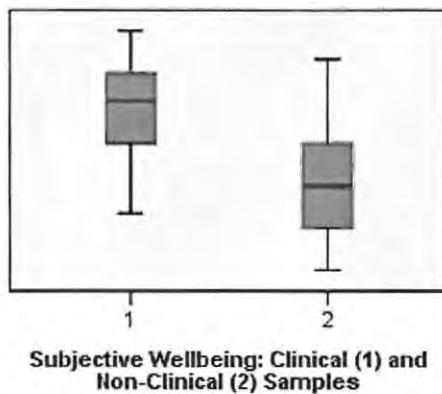
Boxplot 7 Total



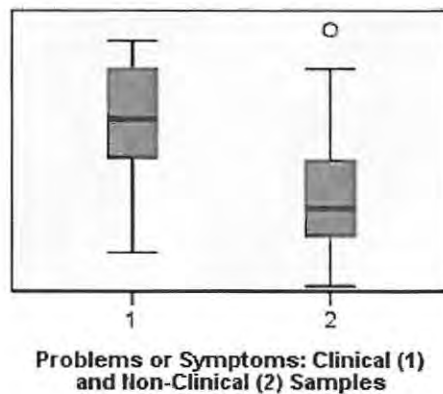
Boxplot 8 Non-Risk



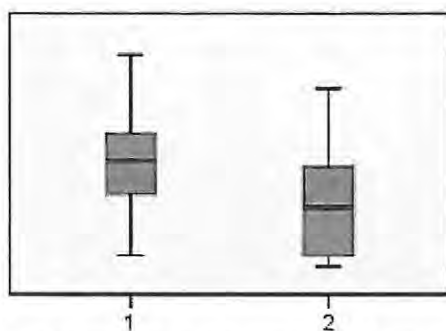
Boxplot 9 Subjective Wellbeing



Boxplot 10 Problems or Symptoms

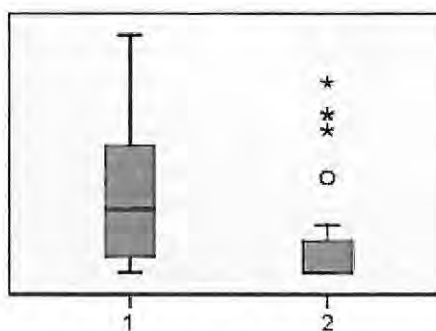


Boxplot 11 Life Functioning



Life Functioning: Clinical (1) and Non-Clinical (2) Sample

Boxplot 12 Risk



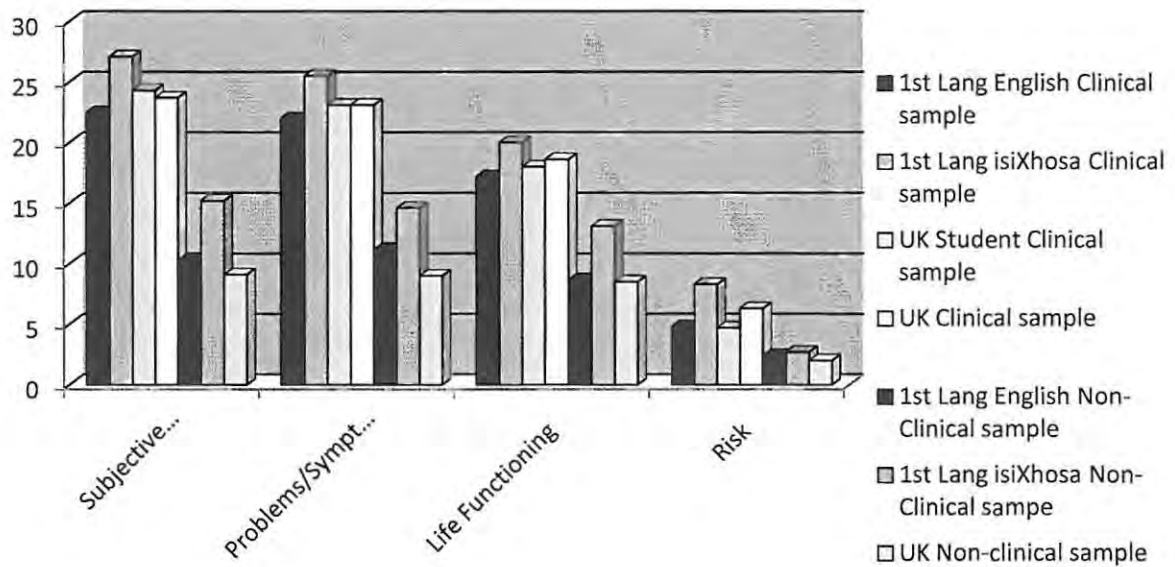
Risk: Clinical (1) and Non-Clinical (2) Samples

A summary of the comparison of means across the subjective wellbeing, problems or symptoms, life functioning and risk domains within the Rhodes University first language English and Xhosa speaking student samples and the original UK referential data documented in Evans et al. (2002) are presented in table 6.2.20 and graph 2 on the following page.

Table 6.2.20 Comparison of CORE-OM mean scores across domains within the Rhodes English and Xhosa speaking samples, and the UK student (Connell et al., 2007a) and referential data (Evans et al., 2002)

Domains	Rhodes University				UK sample	UK sample	
	1st Lang English sample		1st Lang Xhosa sample		(Connell et al., 2007a)	(Evans et al., 2002)	
	Clinical n= 200	Non-clin n=210	Clinical n= 41	Non-clin n=43	Clinical	Clinical n = 863	Non-Clin n = 1084
Subjective Wellbeing:	22.5	10.3	<b>27.1</b>	<b>15.2</b>	24.3	23.7	9.1
Problems/ Symptoms:	22.0	11.2	<b>25.5</b>	<b>14.6</b>	23.1	23.1	9.0
Life Functioning:	17.2	8.7	<b>20.0</b>	<b>13.1</b>	18.0	18.6	8.5
Risk:	4.8	2.4	<b>8.3</b>	<b>2.7</b>	4.7	6.3	2.0
Non-risk items (28 items):	20.0	10.0	<b>23.2</b>	<b>13.9</b>	21.0	21.2	8.8
All items (34 items):	17.3	8.7	<b>20.6</b>	<b>12.1</b>	18.2	18.6	7.6

Graph 2 Comparisons of CORE-OM domain means



These comparisons indicate that while similar CORE-OM mean scores were reported within the Rhodes University first language English speaking student clinical and non-clinical samples in comparison with the original UK referential data documented by Evans et al. (2002) and the UK student clinical data documented by Connell et al. (2007a) consistently higher CORE-OM mean scores were generated by the Rhodes University first language Xhosa speaking student samples across total, non-risk and all domain means.

#### *Clinical cut-off points*

The Rhodes University first language English and Xhosa speaking student clinical and non-clinical sample means and standard deviations were used to calculate criteria for clinically significant change in accordance with the method outlined by Jacobson and Truax (1991).

$$\frac{(mean_{clin} \times SD_{norm}) + (mean_{norm} \times SD_{clin})}{SD_{norm} + SD_{clin}}$$

Clinical cut-off points were calculated across the total and domain mean scores within the samples. The results are presented in table 6.2.21.

Table 6.2.21 Comparison of clinical cut-off points between the Rhodes University first language English and Xhosa speaking student samples

Domains	Rhodes University 1 <sup>st</sup> Lang English Clinical cut-off	Rhodes University 1 <sup>st</sup> Lang Xhosa Clinical cut-off
Subjective Wellbeing:	15.7	21.6
Problems/ Symptoms:	16.1	20.5
Life Functioning:	12.5	19.7
Risk:	3.4	6.4
Non-risk items (28 items):	14.4	18.9
All items (34 items):	12.5	16.6

The clinical cut-off points across total and domain mean scores for the Rhodes University first language Xhosa speaking student sample were consistently higher than the cut-off points for the Rhodes University first language English speaking student samples. However both sets of clinical cut-off points were considerably higher than the standard cut-off point of 10 currently used within UK NHS contexts (Barkham et al., 2006).

A comparison of CORE-OM means and clinical cut-off points across the UK and South African samples suggest that first language Xhosa speaking students experience increased levels of psychological distress in comparison to their first language English speaking counterparts at Rhodes University, and UK student, and referential data samples. This finding is consistent with previous research documented by Young (2009) comparing the levels of psychological distress experienced between white and black students utilising services at the Rhodes University Student Counselling Centre during 2007.

Young (2009) highlights that many black students enter into the university context from impoverished backgrounds, experiencing increased financial pressures, poorer educational foundations and heightened expectations from their family members that a university degree will change the economic situation for the family. These added pressures increase psychological distress. Coupled with this, second language English speaking students contend with the difficulty of completing tertiary education in a second language. However Boughey (2003) and Gwele (2002) highlight that in addition to the increased socio-economic and academic challenges many black,

second language English speaking students experience, they also report finding the white, male, Eurocentric culture of historically white universities isolating and alienating. These additional challenges may account for the increased levels of psychological distress demonstrated within the Rhodes University first language Xhosa speaking student clinical and non-clinical samples.

However these raised mean scores within the first language Xhosa speaking student samples resulted in inflated clinical cut-off points that were considerably higher than both the set of clinical cut-off points calculated for the Rhodes University first language English speaking student samples and the proposed clinical cut-off point of 10 proposed by Barkham et al. (2006) based on UK referential data samples. The danger of these inflated cut-off points lies in the inappropriate categorising of students who fall below these clinical cut-off points as members typical of a non-clinical population sample who would not necessarily benefit from psychological support, when in fact they may be experiencing elevated levels of distress that would benefit from psychological intervention.

But Hambleton et al. (1999) highlight that differences in population scores cross-culturally cannot be taken at face value and assumed to represent true cultural differences. Interpretations must be substantiated by other empirical evidence (Van de Vijver & Hambleton, 1996). While the evidence presented thus far suggests a good overlap of the construct of distress as measured by the CORE-OM across UK and South African first language English and Xhosa speaking student samples, because of the lack of a definitive psychometric structure of the CORE-OM comparison of equivalence of the measure across these cultural contexts is not possible. As a result inflated CORE-OM mean scores within the South African samples may be the result of different mean intercepts, and therefore different scales of measurement of the tool (Cheung, 2007).

The psychometric structure, internal consistency as well as measurement and structural model of the CORE-10 were then investigated. This model was cross validated and investigated for group equivalence across first and second English language use.

**b) Investigating equivalence of the CORE-10 within the Rhodes University sample**

The Rhodes University sample

A total of 751 CORE-OM questionnaires were completed by South African students from Rhodes University during 2010. Of these questionnaires 683 (91%) were completed in full, 41 (5.5%) contained one item omitted, 5 (0.7%) contained two items omitted, and 22 (3%) were unusable due to omissions of 3 items or more, or omission of more than 1 item within the same domain. These figures are summarised in table 6.2.22. Thus, a total of 733 usable CORE-OM questionnaires were collected. Sample demographics are presented in table 6.2.23.

Table 6.2.22 Total Rhodes University student sample

Total completed questionnaires:	All CORE-OM items completed:	1 item omitted:	2 items omitted:	3 items omitted:	Unusable: excess of three omitted:
751	683 (91%)	41 (5.5%)	5 (0.7%)	0 (0%)	22 (3%)

Table 6.2.23 Sample demographics for the total Rhodes University student sample

	Total Rhodes University sample of 2010
n:	733
Age:	Range: 18-47 Mean: 21 years
Sex:	Male: 245 (33%) Female: 488 (67%)
Race:	White: 358 (49%) *Black: 375 (51%)
First Language:	English: 477 (65%) Other: 256 (35%)
Population:	Clinical: 312 (43%) Non-Clinical: 421 (57%)

This sample included 245 (33%) males and 488 (67%) females ranging in age between 18 and 47 years, with a mean age of 21. Of the total sample 358 (49%) were white, 375 (51%) black, 477 (65%) first language English speakers and 256 (35%) second language English speakers.

## 1. Internal consistency of the CORE-OM questionnaire items

When considering a tool for cross-cultural validation Van de Vijver and Leung (1997) suggest an initial investigation of item-total correlations across all domains of the tool in order to investigate possible indicators of item bias. An investigation of item-total correlations across the four domains of the CORE-OM within both the first language English and Xhosa speaking student groups within the Rhodes University sample is presented in table 6.2.24. The first language English speaking clinical sample (C) comprised 200 students, while the non-clinical sample (N) comprised 210. The first language Xhosa speaking clinical sample (C) comprised 41 students while the non-clinical sample (N) comprised 43.

An investigation of item-total correlations across CORE-OM domains, presented in table 6.2.24, indicated the likelihood of item bias in a number of questionnaire items including item 4 within the subjective wellbeing domain. Within the problems or symptoms domain items 23 and 30 were identified from the depressive cluster, items 8 and 18 from the physical cluster, and item 28 from the trauma cluster. Within the life functioning domain item 26 from the close relationships cluster, items 7 and 21 from the general relationships cluster and item 33 from the social relationships cluster were identified. While within the risk domain items 24 and 34 from the risk to self cluster and items 6 and 22 from the risk to others cluster were identified.

The CORE-10 includes items 2, 3, 7, 10, 15, 16, 18, 23, 27 and 28 which have been circled in table 6.2.24. However four of these items (7, 18, 23 and 28) have been identified as potentially problematic within a first language Xhosa speaking student sample in that they may be prone to item bias. During the original reduction of the CORE-OM into the CORE-10 items were paired for similarity of content, phrasing and intensity, and the item that best predicted the original cluster was selected for inclusion in the scale, for example: item 18 was selected from the pair of 8 and 18; item 23 was selected from the pair 5 and 23; and item 28 was selected from the pair 13 and 28 (Barkham et al., 2012). Item 7 was included because its pair 32 had demonstrated poor response rates in the UK samples (Barkham et al., 2012).

Table 6.2.24 Item-total correlations of the CORE-OM English version

Items:	Subjective Wellbeing				Problems/Symptoms				Life Functioning				Risk				
	Eng		Xhosa		Eng		Xhosa		Eng		Xhosa		Eng		Xhosa		
	C	N	C	N	C	N	C	N	C	N	C	N	C	N	C	N	
Internal consistency (domain)	0.8	0.7	0.6	0.7													
<b>4</b> felt OK about myself	0.6	0.4	0.3	0.4													
14 felt like crying	0.5	0.4	0.6	0.5													
17 felt overwhelmed	0.7	0.5	0.5	0.6													
31 felt optimistic	0.4	0.5	0.4	0.3													
Internal consistency (domain)					0.9	0.9	0.8	0.9									
2 felt tense, anxious, nervous					0.6	0.6	0.7	0.7									
11 tension, anxiety prevent me					0.6	0.7	0.8	0.7									
15 felt panic or terror					0.6	0.5	0.7	0.8									
20 problems impossible					0.7	0.7	0.7	0.8									
5 lacking in energy					0.6	0.6	0.5	0.7									
<b>23</b> felt despairing, hopeless					0.7	0.7	0.4	0.8									
27 felt unhappy					0.7	0.7	0.7	0.7									
<b>30</b> thought I am to blame					0.5	0.5	0.2	0.7									
<b>8</b> troubled by aches, pain					0.3	0.4	0.3	0.6									
<b>18</b> difficult getting to sleep					0.5	0.6	0.3	0.6									
13 unwanted thoughts feelings					0.6	0.6	0.6	0.7									
<b>28</b> images or memories					0.6	0.5	0.3	0.6									
Internal consistency (domain)									0.9	0.8	0.8	0.8					
1 alone and isolated									0.6	0.6	0.5	0.7					
3 I have someone to turn to									0.5	0.4	0.4	0.5					
19 felt warmth and affection									0.3	0.3	0.2	0.3					
<b>26</b> I have no friends									0.6	0.6	0.5	0.1					
<b>7</b> able to cope									0.6	0.5	0.2	0.6					
12 happy with things I've done									0.6	0.6	0.6	0.6					
<b>21</b> able to do most things									0.6	0.6	0.3	0.4					
32 achieved things I wanted									0.6	0.7	0.4	0.6					
<b>33</b> humiliated or shamed									0.4	0.3	0.5	0.7					
10 talking to people									0.6	0.5	0.4	0.5					
25 felt criticized by others									0.5	0.5	0.5	0.6					
29 irritable when with others									0.5	0.4	0.4	0.5					
Internal consistency (domain)													0.7	0.8	0.7	0.8	
9 thought of hurting myself													0.6	0.6	0.8	0.7	
16 plans to end my life													0.6	0.6	0.7	0.5	
<b>24</b> better if I were dead													0.6	0.7	0.5	0.9	
<b>34</b> hurt myself physically													0.5	0.5	0.6	0.9	
<b>6</b> violent to others													0.2	0.3	0.2	0.0	
<b>22</b> threatened another													0.3	0.4	0.0	0.5	

However within the Rhodes University samples item 5 demonstrates more consistency in item-total correlations across the first language English and Xhosa samples than item 23, as does item 13 in comparison to item 28 and item 32 in comparison to item 7. These three items are therefore suggested to replace items 7, 23 and 28 in the CORE-10 for further investigation within the Rhodes University sample. The CORE-10 South African version then included items 2, 3, 5, 10, 13, 15, 16, 18, 27 and 32 from the original CORE-OM version.

### Rhodes University group A and B

The Rhodes University sample was then split into two groups. The sample demographics are summarised in table 6.2.25

Table 6.2.25 Sample demographics for the Rhodes University Group A and B

	Total Rhodes University sample of 2010	Group A	Group B
n:	733	104	629
Age:	Range: 18-47 Mean: 21 years	Range: 18-29 Mean: 20.8 years	Range: 18-47 Mean: 21.0 years
Sex:	Male: 245 (33%) Female: 488 (67%)	Male: 35 (34%) Female: 69 (66%)	Male: 210 (33%) Female: 419 (67%)
Race:	White: 358 (49%) *Black: 375 (51%)	White: 51 (49%) *Black: 53 (51%)	White: 307 (49%) Black: 322 (51%)
First Language:	English: 477 (65%) Other: 256 (35%)	English: 68 (65%) Other: 36 (35%)	English: 409 (65%) Other: 220 (35%)
Population:	Clinical: 312 (43%) Non-Clinical: 421 (57%)	Clinical: 44 (42%) Non-Clinical: 60 (58%)	Clinical: 268 (43%) Non-Clinical 361 (57%)

\* Including all students previously disadvantaged by Apartheid (Black African, Indian, and Coloured)

Each data entry within the total Rhodes University sample was sorted by sex, then clinical or non-clinical population membership, then by first or second language English use. Each entry was then given a sequential number between 1 and 7 and every 7th entry was allocated to group A. All remaining entries were allocated to group B. Group A was used to investigate the psychometric structure and internal consistency of the South African CORE-10 and establish a measurement and structural model of the measure. This model was then cross-validated within Group

B and group equivalence was investigated across clinical and non-clinical population membership as well as first and second language English use.

### 1. Psychometric structure and internal consistency of South African CORE-10

The psychometric structure of the South African CORE-10 version was investigated within group A using principal component analysis (Kline, 1994). The relevant items were extracted and the scree plot indicated one dominant component that accounted for 46.5% of the total variance, indicative of general distress, comprising 10 items, with moderate to high factor loadings. Internal consistency was high, with good item-total correlations except within item 16 ( $\alpha = 0.33$ ). These results are illustrated in scree plot 3 and summarised in tables 6.2.26 and 6.2.27.

Scree Plot 3: Principal components analysis: South African CORE-10 version

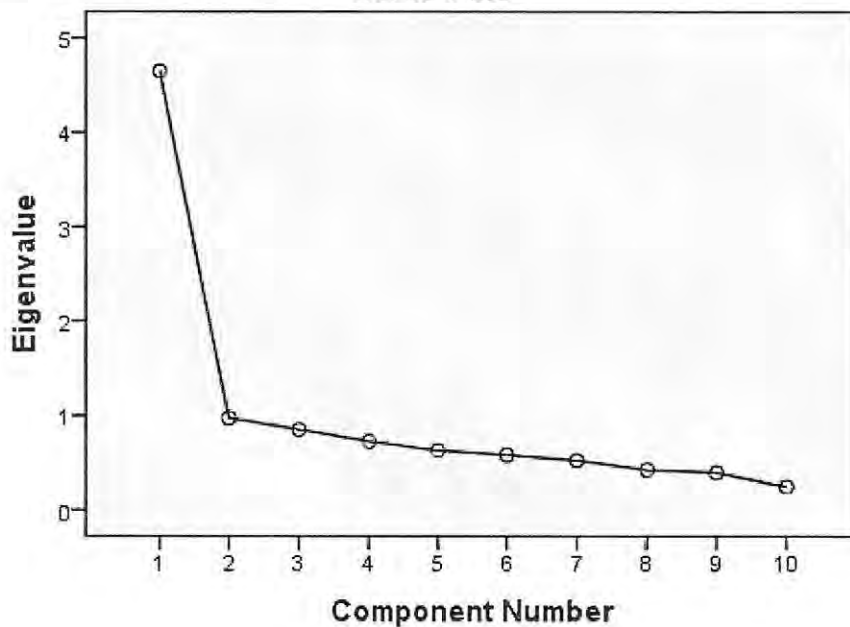


Table 6.2.26 Principal components analysis: South African CORE-10 version

Item No	Item	Domain	+/-	Component
				1 (46.5%)
27.	I have felt unhappy	Prob/Symptoms	-	0.86
5.	I have felt lacking in energy and enthusiasm	Prob/Symptoms	-	0.78
15.	I have felt panic or terror	Prob/Symptoms	-	0.70
2.	I have felt tense, anxious or nervous	Prob/Symptoms	-	0.70
13.	I have been disturbed by unwanted thoughts	Prob/Symptoms	-	0.70
18.	I have difficulty sleeping	Prob/Symptoms	-	0.69
10.	Talking to people has felt too much for me	Life Functioning	-	0.65
3.	I have felt I have support	Life Functioning	+	0.63
32.	I have achieved the things I've wanted to	Life Functioning	+	0.62
16.	I have made plans to end my life	Risk to self	-	0.40

Table 6.2.27 Internal consistency: South African CORE-10 version

Internal consistency:		CORE-10
Overall scale		0.87
Item/total Correlations		
Item 27	0.79	
Item 5	0.70	
Item 13	0.61	
Item 15	0.61	
Item 2	0.61	
Item 18	0.59	
Item 10	0.55	
Item 32	0.53	
Item 3	0.53	
<b>Item 16</b>	<b>0.33</b>	

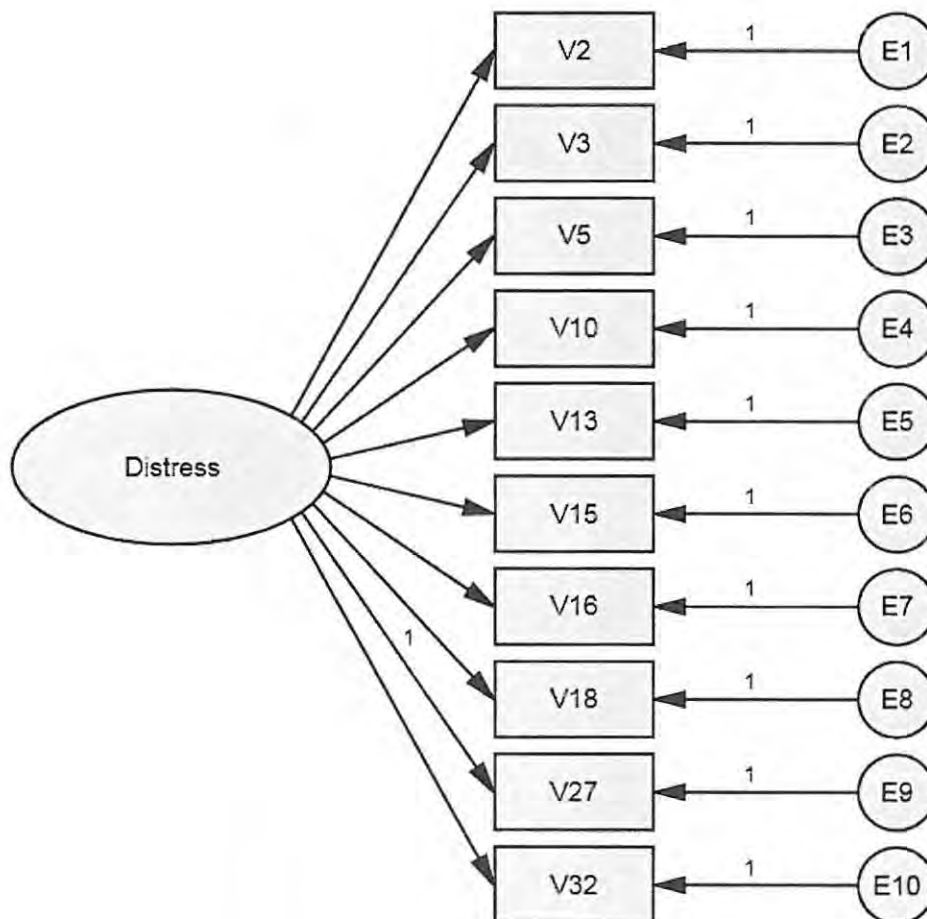
## 2. Measurement and structural model of the South African CORE-10

A measurement and structural model of the South African CORE-10 was then investigated using group A data. As explained earlier, Byrne (2001) defines structural equation modeling as a hypothesis-testing statistical methodology that uses structural regression equations to model a theory under investigation. This model is then statistically analysed in relation to the data to establish the extent to which the model is consistent with the data, in terms of goodness of fit. Both the measurement model (relationship between the latent and observed variables) and the structural

model (relationship between the latent variables) are investigated (Byrne, 2001). Byrne (2001) explains that the first step is to postulate the model.

The CORE-10 was developed to provide clinicians with a brief measure of distress that was sensitive to a variety of experiences of distress that included problems or symptoms and impact on life functioning (Barkham et al., 2012). During exploratory factor analysis of the South African CORE-10, general distress emerged as a first-order, single factor constituted by the 10 CORE questionnaire items. Therefore within the South African CORE-10, general distress is conceptualized as the latent or unobserved variable, constituted by the ten CORE questionnaire items as manifest or observed variables. This model is presented as path diagramme 1.

Path diagramme 1 The South African CORE-10



Each observed variable includes measurement error which is accounted for within the model. The error terms are not correlated. The latent variable metric scale is

determined by constraining the variable to the factor loading of questionnaire item 27, which has the highest item-total reliability, using a regression weight of 1.

The next step, as Byrne (2001) explains, is to test the plausibility of the model within the Rhodes University group A sample, evaluating the goodness of fit between the model and the data. This is a recursive model in that it only investigates the relationship of the 10 CORE questionnaire items on the construct of distress (Byrne, 2001). Maximum likelihood was used to estimate parameters. However, Byrne (2001) notes that maximum likelihood analysis includes four underlying assumptions. Firstly a sufficiently large sample size is required in order to conduct the analysis. As explained by Brown (2006) a ratio of 10 data entries for every 1 questionnaire item is required in order to obtain a valid result. The Rhodes University group A sample just meet this ratio requirement and therefore meet the first assumption.

Secondly, Byrne (2001) highlights that the hypothesized model must be valid and congruent with the theoretical underpinnings of the measure's development. A first-order, single factor constituted by the 10 CORE questionnaire items which are drawn from a combination of the original CORE-OM domains, aligns well with the theoretical underpinnings of the measure, drawing from the measurable outcomes indicated by the phase model of psychotherapy change (Howard et al., 1993). Thus the CORE-10 meets this assumption.

Thirdly, Byrne (2001) notes that maximum likelihood analysis assumes the use of a continuous measurement scale during data collection. However the South African CORE-10 includes a 5-point likert scale response format which is not technically a continuous measurement scale, but rather an ordinal scale. As a result the data collected from this measure violates this third assumption. The results of an investigation of the fourth and final assumption of multivariate normality of the observed variables within the South African CORE-10 (Byrne, 2001) are presented in table 6.2.28. Multivariate normality is calculated at 18.29 violating this assumption. Results indicate skewness and kurtosis in excess of one for item 16, and kurtosis in excess of one for items 13, 18 and 27. As a result data collected from the South African CORE-10 violate both the assumption of continuous data and the assumption of multivariate normality.

Table 6.2.28 Multivariate normality of the South African CORE-10 using group A

	Skewness	Kurtosis
Item 2	-0.01	-0.79
Item 3	0.47	-0.98
Item 5	0.21	-0.80
Item 10	0.68	-0.57
<b>Item 13</b>	0.21	<b>-1.25</b>
Item 15	0.86	-0.58
<b>Item 16</b>	<b>3.73</b>	<b>12.88</b>
<b>Item 18</b>	0.13	<b>-1.39</b>
<b>Item 27</b>	0.14	<b>-1.28</b>
Item 32	0.35	-0.31
<b>Multivariate:</b>		<b>18.29</b>

However Muthen and Kaplan (1985) investigated five increasing cases of violations of normality within a Monte Carlo study, using ordinal data drawn from a 5-point likert scale and a sample size of 1000 individuals. They note that although Maximum Likelihood analysis was designed for use specifically with interval data, their analyses demonstrate robustness within the ordinal data sets, on the condition that univariate skewness and kurtosis of most variables fall between 1 and -1, however in instances where most items exceed skewness and kurtosis of 2 and -2 Muthen and Kaplan (1985) strongly recommend that alternative analyses be employed. Most variables within the South African CORE-10 data fall within the skewness and kurtosis range of 1 and -1 indicating that maximum likelihood is a suitable method of analysis for this data.

Having examined the underlying assumptions needed to apply Maximum Likelihood analysis, Byrne (2001) explains that it is necessary to identify the goodness of fit indicators that will be used to interpret the results of the analysis. The chi-square goodness of fit statistic is typically used in this regard, however Byrne (2001) and Cheung and Rensvold (2009) note that the statistic is dependent on sample size and the large sample sizes necessary to conduct structural equation modeling proficiently, result in inflated chi-square statistics that detect very small and often inconsequential differences between models.

As a result Byrne (2001) suggests an investigation of the adequacy of the parameter estimates as well as the use of additional goodness of fit indicators. An evaluation of parameter estimates include the size ( $\leq 1.0$ ) and sign (+) of the estimate; consideration of whether the estimates support the underlying theory of the model; the appropriateness of standard errors; and the statistical significance of the parameter estimates, indicating that the estimates are statistically different from zero (Byrne, 2001).

Additional goodness of fit indicators include indices of absolute fit, comparative fit and model parsimony as well as measures based on population discrepancy. The  $\chi^2/\text{degrees of freedom}$  ratio (CMIN/DF) is an indicator of absolute fit whereby a very good fit is indicated by values below 2 (Byrne, 2001). Comparative fit refers to the fit of the model in comparison with a baseline model in which all correlations amongst variables is zero, and is most commonly evaluated using the comparative fit index (CFI), an index insensitive to sample size, whereby values greater than 0.95 demonstrate very good fit (Byrne, 2001).

Model parsimony which accounts for the complexity of the model is evaluated using PRATIO and PCFI (a product of PRATIO and the CFI), where high values indicate simplicity or high model parsimony (Byrne, 2001). The root mean square error of approximation (RMSEA) indicates how well the model would fit the population covariance matrix if optimal parameter values were used (Byrne, 2001). Values less than 0.05 indicate very good fit while values between 0.05-0.08 indicate reasonable fit. Confidence intervals indicate the precision of the value (Byrne, 2001).

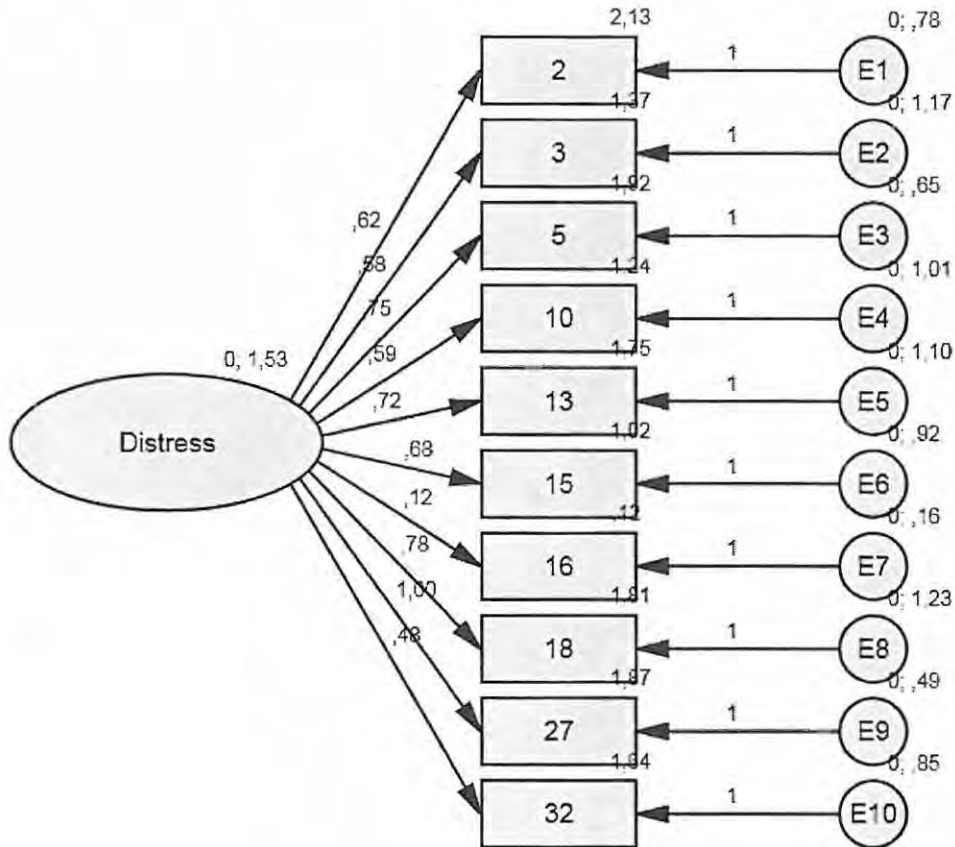
In instances where model misfit is evident, Byrne (2001) recommends an investigation of the modification indices. The modification index, consisting of  $\chi^2$  statistic with one degree of freedom which indicate the drop in overall  $\chi^2$  if the parameter were to be freely estimated in a subsequent run, evaluates the extent to which the hypothesized model is appropriately described (Byrne, 2001). Table 6.2.29 summarised the results of the structural equation modelling of the South African CORE-10 using the Rhodes University group A sample.

Table 6.2.29 Plausibility of the model within the Rhodes University group A sample

Observed variables:	Parameter estimates		S.E	p-value
	Regression weights	Standardised Regression weights		
V2	0.619	0.66	0.085	<0.00
V3	0.575	0.55	0.098	<0.00
V5	0.752	0.76	0.084	<0.00
V10	0.594	0.59	0.093	<0.00
V13	0.724	0.65	0.100	<0.00
V15	0.676	0.66	0.092	<0.00
V16	0.116	0.34	0.034	<0.00
V18	0.776	0.65	0.106	<0.00
V27	1.000	0.87		
V32	0.484	0.55	0.084	<0.00
Absolute fit:				
X <sup>2</sup>	x <sup>2</sup> (35) = 35.536, p = 0.443			
CMIN/DF	1.015			
Comparative fit:				
RMSEA	0.012 (CI 90: 0.00 – 0.072)			
CFI	0.998			
Parsimony:				
PRATIO	0.778			
PCFI	0.777			

The chi-square goodness of fit is not significant indicating a good fit of the model within the Rhodes University group A data. An investigation of the parameter estimates indicated adequate estimates, all significantly different from zero in conjunction with appropriate standard errors. Additional goodness of fit indices demonstrated very good absolute fit with a CMIN/DF of 1.015, a CFI of 0.99 indicative of very good comparative fit, a PCFI of 0.78 indicative of high model parsimony and a RMSEA of 0.012 with a concise confidence interval. The results are presented in path diagramme 2.

Path diagramme 2 The South African CORE-10



### 3. Cross validation of the South African CORE-10

Byrne (2001) explains that after evaluating the plausibility of the model the next step is to cross-validate that model in an independent sample. The Rhodes University group B sample was then used to validate the model. The results are presented in table 6.2.30. Van de Vijver and Leung (1997) explain that goodness of fit is evaluated across increasingly restrictive models that begin with an unconstrained model. This model does not specify any similarities across groups. Next measurement weights or factor loadings are constrained across the groups, while the third model constrains measurement intercepts in addition to measurement weights (Van de Vijver & Leung, 1997). The fourth constrains factor correlations or covariances in addition to intercept and measurement weights, while the final model

constrains factor variances in addition to factor covariances, intercepts and measurement weights (Van de Vijver & Leung, 1997).

Table 6.2.30 Cross validation of the South African CORE-10 with Rhodes University group B sample

	Model 1 Unconstrained	Model 2 Constrained Measurement weights	Model 3 Constrained Measurement intercepts	Model 4 Constrained Structural covariance	Model 5 Constrained Measurement residuals
		Est: S.E P-val			
V2		0.692 0.037 <0.00			
V3		0.531 0.041 <0.00			
V5		0.743 0.037 <0.00			
V10		0.751 0.039 <0.00			
V13		0.844 0.040 <0.00			
V15		0.702 0.036 <0.00			
V16		0.184 0.022 <0.00			
V18		0.782 0.043 <0.00			
V27		1.00			
V32		0.648 0.037 <0.00			
Absolute fit:					
X <sup>2</sup>	<b>x<sup>2</sup>(70) = 180.40, p &lt; 0.00</b>	<b>x<sup>2</sup>(79) = 193.09, p &lt; 0.00</b>	<b>x<sup>2</sup>(89) = 207.40, p &lt; 0.00</b>	<b>x<sup>2</sup>(90) = 207.43, p &lt; 0.00</b>	<b>x<sup>2</sup>(100) = 255.58, p &lt; 0.00</b>
CMIN/DF	2.577	2.444	2.330	2.305	2.556
Comparative					
RMSEA	0.046 (CI 90: 0.04-0.06)	0.044 (CI 90: 0.04-0.05)	0.043 (CI 90: 0.04-0.05)	0.042 (CI 90: 0.04-0.05)	0.046 (CI 90: 0.04-0.05)
CFI	0.958	0.956	0.955	0.955	0.940
Parsimony:					
PRATIO	0.778	0.878	0.989	1.00	1.11
PCFI	0.745	0.839	0.944	0.955	1.045

While chi-square goodness of fit tests were significant across all models, likely as a result of the large sample sizes (Van de Vijver & Leung, 1997), an investigation of the parameter estimates indicated adequate estimates of regression weights, all significantly different from zero in conjunction with appropriate standard errors. Additional goodness of fit indices demonstrated good absolute fit with CMIN/DF values between 2-3 across all models, high CFI values above 0.095 indicative of good comparative fit and RMSEA values below 0.05, with concise confidence intervals.

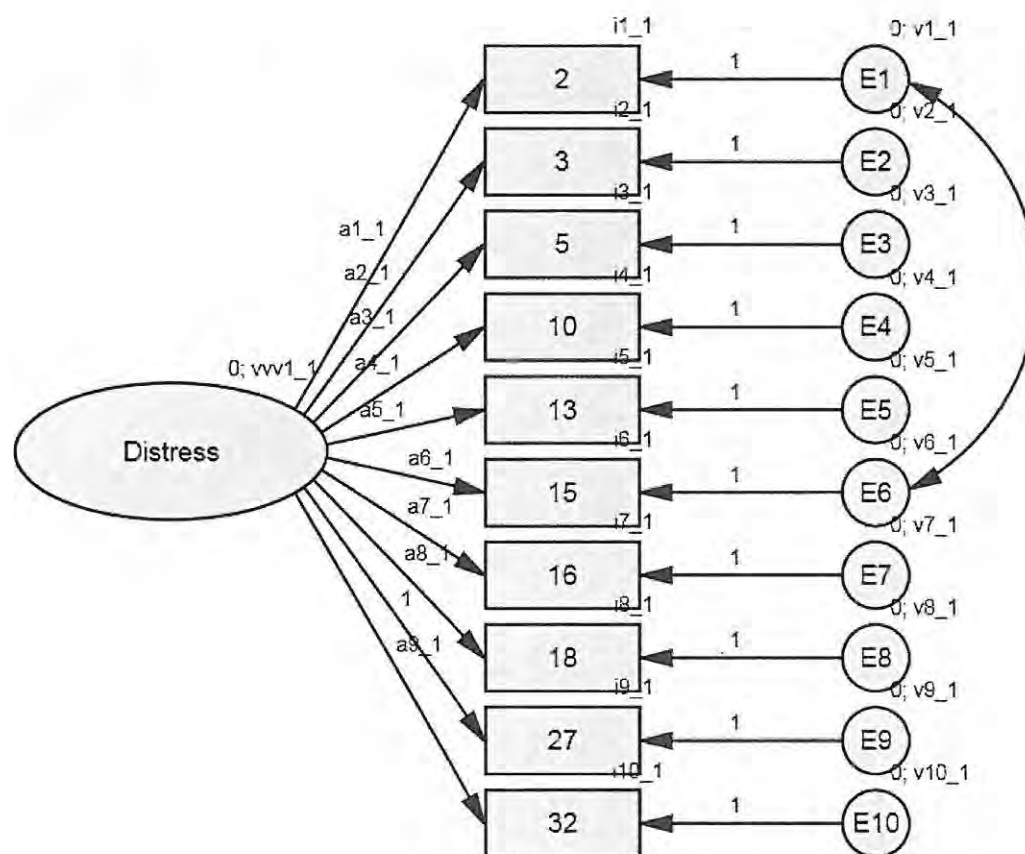
However a high modification index value (51.229) between covariance errors 1 and 6 (for observed variables 2 and 15) within the covariances for measurement intercepts in group B suggested that these error items should be equally correlated. This modification resulted in an improved model fit with reduced chi-square goodness of

fit statistics, CMIN/DF and RMSEA values as well as improved CFI values across all models. These results are presented in table 6.2.31, along with the modified model which is presented as path diagramme 3.

Table 6.2.31 Modified cross validation of the South African CORE-10

	Model 1 Unconstrained	Model 2 Constrained Measurement weights	Model 3 Constrained Measurement intercepts	Model 4 Constrained Structural covariance	Model 5 Constrained Measurement residuals
Absolute fit:					
X <sup>2</sup>	$\chi^2(68) = 124.49, p < 0.00$	$\chi^2(77) = 137.768, p < 0.00$	$\chi^2(87) = 151.914, p < 0.00$	$\chi^2(88) = 151.944, p < 0.00$	$\chi^2(98) = 199.705, p < 0.00$
CMIN/DF	1.831	1.789	1.746	1.727	2.038
Comparative					
RMSEA	0.034 (CI 90: 0.02-0.04)	0.033 (CI 90: 0.02-0.04)	0.032 (CI 90: 0.02-0.04)	0.032 (CI 90: 0.02-0.04)	0.038 (CI 90: 0.03-0.045)
CFI	0.978	0.977	0.975	0.975	0.961

Path diagramme 3 The modified model for the South African CORE-10



Models were then compared for significant differences in order to establish the level of equivalence obtained. Cheung and Rensvold (2009) explain that at measurement

level, configural equivalence relating to equivalent conceptualisations of the construct being investigated, across groups, is demonstrated within the unconstrained model through the same number of factors and configurations of parameters across groups. This model is then used as a baseline model for comparison of metric and scalar equivalence. Cheung and Rensvold (2009) note that metric equivalence is achieved when factor loadings are equivalent across groups indicating similarity in meaning and manifestation of the construct being investigated, across groups. Cheung (2007) highlights that factor loadings indicate the relationship between questionnaire items and the construct being evaluated. Equal factor loads across groups indicate equivalent relationships of items to the construct being investigated.

The Likelihood Ratio test ( $\Delta \chi^2$ ) is used to compare changes in the chi-square statistic across the unconstrained and measurement weight constrained models, and non-significant differences demonstrate metric equivalence (Cheung & Rensvold, 2009). In addition Cheung and Rensvold (2009) note that changes in CFI values ( $\Delta$  CFI) across the two models less than or equal to 0.01 are used as a further indicator of model equivalence.

Scalar equivalence includes both equivalence in factor loadings and item intercepts across groups, indicating that all items are measuring the same cross-cultural differences in scores, allowing for meaningful comparisons of mean scores across groups (Cheung & Rensvold, 2009). Cheung (2007) highlights that non-equivalence occurs when one group scores consistently higher or lower than another resulting in displacement of the measurement scale.

The Likelihood Ratio test ( $\Delta \chi^2$ ) is again used to compare changes in the chi-square statistic, however this time across the measurement weight and intercept constrained models, and non-significant differences demonstrate scalar equivalence, and therefore full scale measurement equivalence (Cheung & Rensvold, 2009). Changes in CFI values ( $\Delta$  CFI) can again be used as a further indicator of model equivalence (Cheung & Rensvold, 2009).

Once full measurement equivalence has been established, an investigation of structural equivalence is possible. Structural equivalence is established when construct covariance is equal across groups and indicates that the range of responses to each questionnaire item as well as the relationships amongst constructs within a model are the same across groups (Cheung & Rensvold, 2009). Again the Likelihood Ratio test ( $\Delta \chi^2$ ) is used, to compare changes in the chi-square statistic across the intercept and covariance constrained models, while changes in CFI values ( $\Delta$  CFI) can again be used as a further indicator of model equivalence (Cheung & Rensvold, 2009). The change indices across models for the Rhodes university group A and B are presented in table 6.2.32.

Table 6.2.32 Comparison of models across Rhodes University groups A and B

	$\chi^2$	df	CFI	$\Delta \chi^2$	$\Delta$ CFI
Measurement equivalence					
Configural equivalence	124.49	68	0.978		
Metric equivalence	137.77	77	0.977	1.47, df=9, p = 0.99	-0.001
Scalar equivalence	151.91	87	0.975	1.41, df=10, p = 0.99	-0.002
Structural equivalence	151.94	88	0.975	0.03, df=1, p= 0.86	0.00

Differences in chi-square goodness of fit statistics ( $\Delta \chi^2$ ) were non-significant across all models while changes in CFI values remained well below 0.010 indicating both measurement (similarity of item content and psychometric properties) and structural (similarity in meaning and dimensional structure) equivalence of the South African CORE-10 across Rhodes University group A and B.

#### 4. Across group equivalence of the South African CORE-10

Finally, the modified model with equal covariances across e1 and e6 was investigated for across group equivalence comparing first and second language English speakers. The results are presented in table 6.2.33.

Table 6.2.33 Across group comparison of first and second language English speaker

	Model 1 Unconstrained	Model 2 Constrained Measurement weights	Model 3 Constrained Measurement intercepts	Model 4 Constrained Structural covariance	Model 5 Constrained Measurement residuals
		Est. S.E. P-val			
V2		0.687 0.04 <0.00			
V3		0.509 0.04 <0.00			
V5		0.742 0.04 <0.00			
V10		0.776 0.04 <0.00			
V13		0.848 0.04 <0.00			
V15		0.665 0.04 <0.00			
V16		0.211 0.03 <0.00			
V18		0.784 0.05 <0.00			
V27		1.00			
V32		0.675 0.04 <0.00			
Absolute fit:					
X <sup>2</sup>	<b>x<sup>2</sup>(68) = 111.88, p &lt; 0.00</b>	<b>x<sup>2</sup>(77) = 122.45, p &lt; 0.00</b>	<b>x<sup>2</sup>(87) = 165.61, p &lt; 0.00</b>	<b>x<sup>2</sup>(90) = 165.62, p &lt; 0.00</b>	<b>x<sup>2</sup>(98) = 230.21, p &lt; 0.00</b>
CMIN/DF	1.645	1.590	1.904	1.882	<b>2.349</b>
Comparative					
RMSEA	0.032 (CI 90: 0.02-0.04)	0.031 (CI 90: 0.02-0.04)	0.038 (CI 90: 0.03-0.05)	0.038 (CI 90: 0.03-0.05)	0.046 (CI 90: 0.040-0.05)
CFI	0.981	0.980	0.965	0.966	<b>0.942</b>
Parsimony:					
PRATIO	0.756	0.856	0.967	0.978	1.089
PCFI	0.741	0.838	0.933	0.944	1.025

While chi-square goodness of fit tests were significant across all models, likely as a result of the large sample sizes (Van de Vijver & Leung, 1997), an investigation of the parameter estimates indicated adequate estimates of regression weights, all significantly different from zero in conjunction with appropriate standard errors. Additional goodness of fit indices demonstrated very good absolute fit with CMIN/DF values falling below 2 across the first four models. CFI values were high across all models indicative of good comparative fit and RMSEA values fell below 0.05 across all models, with concise confidence intervals. Models were then compared for significant differences in order to establish the level of equivalence obtained. The relevant indices value changes across models for the first and second language English speakers are presented in table 6.2.34.

Table 6.2.34 Comparison of models across first and second English language use

	$\chi^2$	df	CFI	$\Delta \chi^2$	$\Delta$ CFI
Measurement equivalence					
Configural equivalence	111.89	68	0.981		
Metric equivalence	122.45	77	0.980	1.17, df=9, p = 0.99	-0.001
<b>Scalar equivalence</b>	165.61	87	0.965	4.32, df=10, p = 0.93	<b>-0.015</b>
<b>Structural equivalence</b>	230.21	88	0.966	<b>64.6, df=1, p &lt; 0.00</b>	-0.001

Differences in chi-square goodness of fit statistics ( $\Delta\chi^2$ ) were non-significant across all models, and while changes in CFI values were above 0.010, actual CFI values remained above 0.095 indicating very good model fit at measurement model level. However significant differences were indicated in chi-square statistics across the intercepts constrained model and the structural covariance constrained model indicating that while full measurement equivalence (similarity of item content and psychometric properties) was achieved within the South African CORE-10 across first and second language English use, structural equivalence (similarity in meaning and dimensional structure of the construct of distress) was not.

## CONCLUSION

Both the qualitative and quantitative investigations of the construct bias and equivalence of the original CORE-OM English version suggested that the measure showed considerable overlap across the UK referential data and a South African student population sample, as well as across first language English and Xhosa speaking students. While the qualitative investigation concluded not to change the original CORE-OM English version before adaptation into Xhosa three challenges were highlighted that needed to be considered during adaptation. First, the likert scale descriptions used to describe varying frequencies of experiencing distress in English vocabulary were not available in the Xhosa language and would need carefully selected, conceptually equivalent Xhosa translation choices during adaptation. Second, because of the various Xhosa dialects available, that vary across geographic contexts and rural and urban environments the translators would need to make vocabulary choices that allowed for the transportability of the Xhosa

translation across as many contexts as possible. Third, the lack of an established written Xhosa language and the lack of variety of emotional vocabulary available in Xhosa would make the selection of linguistically equivalent vocabulary for English emotional terminology challenging.

The quantitative investigation within the Rhodes University first language English and Xhosa speaking student population samples indicated acceptable usability of the CORE-OM within these population demographics. Internal consistency was acceptable except within the subjective wellbeing domain which indicated that these items may be less meaningful indicators of distress, particularly within the first language Xhosa speaking student sample. Discriminant validity was acceptable, and principal components analysis revealed general commonalities between the Rhodes University first language English and Xhosa speaking student samples and the original UK referential data documented by Evans et al (2002), suggesting an overlap of the construct of distress as measured by the CORE-OM across these samples, however differences were also apparent. These differences suggested that not all CORE-OM questionnaire items would be as meaningful, as indicators of distress, within their Xhosa translations, in comparison with the English language versions.

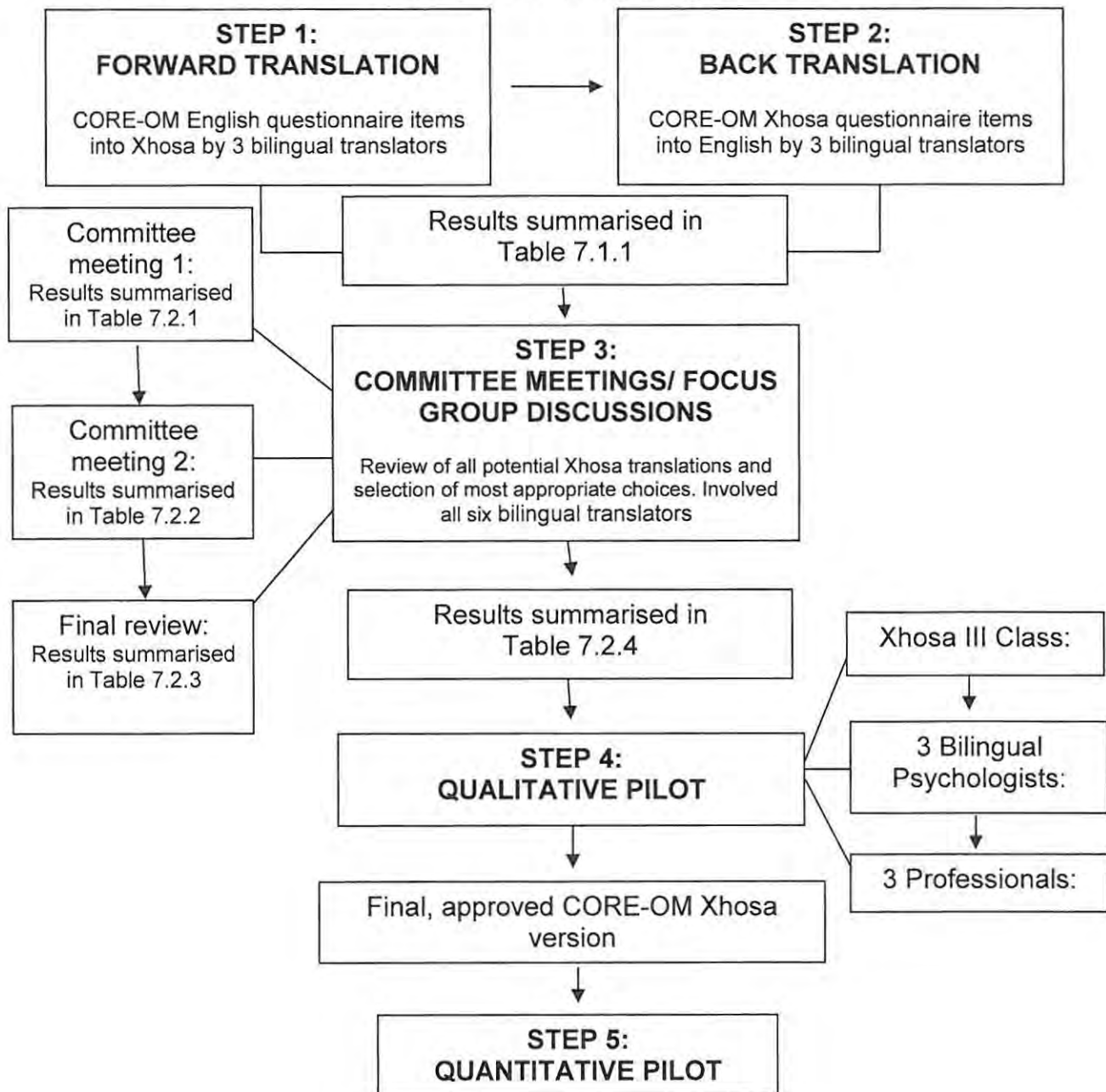
This finding is further supported by the results of the investigation of the measurement and structural model of the South African CORE-10. While a first order, single factor model demonstrated measurement and structural equivalence, across group equivalence between first and second language English speakers was only obtained at measurement level. This result indicated that item content and psychometric properties of the measure remained equal across first and second language English speakers, indicating that the questionnaire items measured the same construct of distress in the same way across the two groups, allowing for meaningful comparison of score differences in distress. However the meaning and dimensional structure of gross distress as measured by the South African CORE-10 English version differed across language use. These differences would likely be further aggravated during the adaptation of the measure into Xhosa.

Having investigated the construct bias and equivalence of the CORE-OM English version within the target population and concluding that the tool demonstrated a considerable degree of overlap of the construct of distress as measured by the CORE-OM English version, across the UK referential data and South African student samples, it was decided not to change any items of the tool before translation. The CORE-OM was then translated into Xhosa in accordance with the translation design presented in the previous chapter, Chapter 5. These results are presented in the following chapter, Chapter 7.

## CHAPTER 7: RESULTS – TRANSLATING THE CORE-OM INTO XHOSA

Drawing from the CORE System Trust translating and normalising guidelines (Evans, 2008) supplemented by the ‘test development and adaptation’ area within the ITC guidelines (Hambleton, 2005) the CORE-OM was translated into Xhosa. This translation design is presented in figure 7.1.1 below, and the results of implementing this design follow.

Figure 7.1.1 The translation design used for adapting the CORE-OM into Xhosa



## 7.1 Steps 1 and 2: The forward- and back-translation process

During steps 1 and 2 three forward translations of the CORE-OM English version were generated in combination with three corresponding back translations. Table 7.1.1 summarises the resultant forward- and back-translations generated during these initial steps of the translation design. This table includes the original CORE-OM English version instructions, likert scale descriptions and questionnaire items, as well as the three Xhosa forward-translations performed by the forward-translators for each of these sections of the questionnaire, and the three corresponding English back-translations performed by the back-translators for the same three sections of the questionnaire.

Table 7.1.1 Forward- and back-translations of the CORE-OM English version

CORE-OM English Version	Xhosa forward-translations	English back-translations
<b><u>INSTRUCTIONS</u></b>		
IMPORTANT PLEASE READ THIS FIRST	IBALULEKILE- NCEDA UQALE UFUNDE LE NTO  KUBALULEKILE- NCEDA FUNDA APHA KUQALA  KUBALULEKILE FUNDA APHA KUQALA	IMPORTANT PLEASE READ THIS  IMPORTANT – READ INSTRUCTIONS FIRST  IT IS VERY IMPORTANT TO READ FIRST
This form has 34 statements about how you have been OVER THE LAST WEEK.	Le fomu ineengxelo ezi-34 malunga nokuba ubunjani ngeveki ephelileyo.	This form has 34 reports about how was last week
	Le fomu ineenkcazelo ezingama 34 zokuba ubunjani na KULE VEKI IPHELILEYO	This form has 34 questions on how you felt this week.
	Olu xwebhu lunezivaklisi ezingama-34 ezimalunga nokuba ubuziva njani kule veiki iphelileyo.	This document has got about 34 sentences about how you felt last week.
Please read each statement and think how often you felt that way last week.	Nceda ufunde ingxelo nganye ucinge ukuba uzive unjalo kangaphi na kuleveki iphelileyo.	Please read each report and think if how many times did you feel last week
	Nceda funda inkcazelo nganye uze ucinge ukuba kukangaphi uziva unjenge veiki iphelileyo.	Please read each question and think of how often you felt like this in the previous week.
	Nceda ufunde isivakalisi ngasinye uze ucinge ukuba kukangakanani na apho uthwaziva ngaloo ndlela kule veiki iphelileyo.	Please read each sentence and think how much did you feel last week.

Then tick the box which is closest to this.	Uphawule ibhokisi ekufutshane na le nto. Wandule utikishe eyona bhokisi isondele kakhulu koko Khetha kengoku ibhokisi esondeleyo kwindlela obuziva ngayo	Mark the box that is close to this Tick the box with the most appropriate answer to you. Choose one box that is most close to the way you felt.
<i>Please use a dark pen (not pencil) and tick clearly within the boxes.</i>	(Nceda usebenzise ipeni emnyama (hayi ilidi) uphawule ngokucacileyo kwezibhokisi. Nceda usebenzise usiba olumnyama (hayi ipensile) utikishe ngokucacileyo phakathi ezibhokisini. Sebenzisa ipeni emnyama uze ubhale phakathi ebhokisini.	Please use a black pen (not a pencil) mark clearly in the box. Use a black pen (not pencil) and make a visible within the box. Use a black pen and tick inside the box.
Over the last week	Kuleveki iphelileyo Kule veki iphelileyo	Last week Previous Week

#### **LIKERT SCALE DESCRIPTIONS**

Not at all	Khange	Did not
	Hayi kwaphela	Not quite
	Konke konke	At all
Only occasionally	Ngamanye amaxesha	Sometimes
	Ngamathuba athile kuphela	Sometimes only
	Ngamanye amaxesha	Sometimes
Sometimes	Ngamanye amaxesha	Sometimes
	Ngamanye amaxesha	Sometimes
	Amaxesh'athile	
Often	Rhoqo	Frequently
	Rhoqo	All the time
Most or all the time	Ixesha elininzi/ ixesha lonke	Most of the time
	Kaninzi okanye ngamaxesha onke	Quite often
	Phantse lonk'ixa	

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Isetyenziswa e-ofisini qha

For office use only

I-ofisi

### **QUESTIONNAIRE ITEMS**

1. I have felt terribly alone and isolated	Ndizive ndindedwa Ndizive ndinomvandedwa yaye ndingenabomi. Ndizive ndingahoyekanga ndindedwa.	I felt lonely I felt lonely and did not have a life Felt uncared for and lonely
2. I have felt tense, anxious or nervous	Ndizive ndibambekile, ndinexhala ndiphakuphaku Ndizive ndinoxinzelelo, ndinologyiko nonxunguphalo Ndingonwabanga ndididekile.	I felt touched, had fear and frightened I felt down, scared, and worried Unhappy and confused
3. I have felt I have someone to turn to for support when needed	Ndizive ndinaye umntu onokundixhasa xa ndidinga Ndizive ndinomntu endikubhenela kuye ukuze ndifumane inkxaso xa ndiyifuna. Ndibenomntu wokundinceda.	I felt like I have someone who can support me when need it I felt like I had someone to rely on and get the support I wanted Have someone to help me
4. I have felt OK about myself	Ndizive ndilungile ngesiqu sam Ndizive kulungile ngesiqu sam. Bendizithanda.	I felt right about myself I was content with myself Loved myself
5. I have felt totally lacking in energy and enthusiasm	Ndizive ndingenawo amandla nenzondelelo Ndizive ndiswelamandla nochulumanco konke-konke. Bendingenamandla namdla wanto.	I felt had no strength and concentration I felt lacking in strength and energy Powerless and less interested in everything
6. I have been physically violent to others	Ndiba nalo nodlame kwabanye abantu Bendindlongondlongo kwabanye abantu. Bendibetha kwabanye.	I became violent to other people I was aggressive towards other people Bullying others

7. I have felt able to cope when things go wrong	Ndizive ndikwazi ukumelana nezinto xa zingalunganga  Ndizive ndinokukwazi ukumelana nezinto xa zingahambi kakuhle.  Bendimelana neengxaki.	I felt I can manage to hence to things that is not right  I felt like I could cope with my issues even when things are not running smoothly  Deal with problems
8. I have been troubled by aches, pains or other physical problems	Ndikhe ndakhathazwa ziintlungu nezinye iingxaki ezibambekayo  Bendikhathazwa zintlungu, ziingqaqambo okanye zezinye iingxaki zomzimba.  Bendiqaqanjelwa ndinezinye iingxaki emzimbeni.	Had worries of pains and other touchy problems  I was in pain, physical pain  Pains and some problems in my body
9. I have thought of hurting myself	Ndikhe ndacinga ngokuzilimaza  Bendinengcinga zokuzonzakalisa.  Bendicinga ngokuzonzakalisa.	I thought of hurting myself  I had thoughts of hurting myself  Thought of hurting myself
10. Talking to people has felt too much for me	Ukuthetha nabantu kunzima kum  Ukuthetha nabantu kuvakele kuyinto enzima kakhulu kum.  Bekunzima ukuthetha nabanye abantu.	To talk with people is difficult to me  I struggled to talk to people  Difficult to interact with people
11. Tension and anxiety have prevented me doing important things	Ixhala lindikhusele ekwenzeni izinto ezibalulekileyo  Uxinzelelo nonxunguphalo lundithintele ukwenza izinto ezibalulekileyo.  Ndakungonwabi bendingakwenzi okubalulekileyo.	A desire protects me to do important things  The tension and stress disenabled me to do the important things to me.  When unhappy I wouldn't do the important things
12. I have been happy with the things I have done	Ziyandivuyisa izinto endizenzileyo  Bendonwabile zizinto endizenzileyo  Bendonwabile zizinto endizenzileyo.	I'm happy about things that I have done  I was happy with the things I had done.  I was happy with things I did

13. I have been disturbed by unwanted thoughts and feelings	Ndikhe ndaphazanyiswa zingcinga nezimvo ezingafunekiyo	I've been distracted by unwanted thoughts and views
	Bendiphazanyiswe ziingcinga neemvakalelo ezingalunganga.	I was lost in bad thoughts.
14. I have felt like crying	Bendineengcinga neemvakalelo ezingafunekiyo	Had bad thoughts and unwanted feelings
	Ndikhe ndafuna ukulila/ukukhala	I wanted to cry
	Ndizive kungase ndikhale.	I felt like crying.
15. I have felt panic or terror	Bendifuna ukukhala.	Wanted to cry
	Ndive ukuphaphazela noloyiko	Had fright and fear
	Ndizive ndinoloyiko olukhulu.	I was very scared.
16. I made plans to end my life	Bendinomva-ndedwa.	Loneliness
	Ndenze iinzame zokuthabatha ubomi bam	I did plans to take my life/I tried to kill myself
	Ndenze izicwangciso zokunqamlela ubomi bam.	I made decisions to control my life
17. I have felt overwhelmed by my problems	Ndiye ndaceba ukuzibulala.	I planned to commit suicide
	Ndikhe ndaziva ndisindwa zingxaki zam	I felt overloaded of my problems
	Ndizive ndoyisiwe zingxaki zam.	My problems and burdens were too much for me
18. I have had difficulty getting to sleep or staying asleep	Bendixakene neengxaki zam.	Couldn't solve my problems
	Ndibe nobunzima ekulaleni nokuhlala ndilele	I had difficulties of sleeping and drowsing
	Bekunzima ukufumana ubuthongo.	I struggled to sleep
19. I have felt warmth or affection for someone	Bendiphuthelwa.	Use to have insomnia
	Ndive ubushushu nothando komnye umntu	I felt warmth and love from someone else
	Ndizive ndinothakazelelo nothando lomntu.	I was caring and loving
	Ndikhe ndanomtsalane kumnt'othile.	I became interesting to a certain person

<p>20. My problems have been impossible to put to one side</p>	<p>Kubenzima ukubeka iingxaki zam ecaleni elinye lingxaki zam bekungakwazeki ukuzibeka bucala. lingxaki bezindongamele.</p>	<p>It was difficult to put my problems on one side I couldn't run away from my problems Problems were beyond my control</p>
<p>21. I have been able to do most things I needed to</p>	<p>Ndikwazile ukuzenza izinto ezininzi ebendinga ukuzenza Ndikwazile ukwenza uthotho lwezinto ebendifun' ukuzenza Ndikhe ndenza okufunekayo.</p>	<p>I managed most things I wanted to do I managed to make a list of things I want. I did what was necessary</p>
<p>22. I have threatened or intimidated another person</p>	<p>Ndikhe ndoyikisa abanye abantu Ndigrogrise okanye ndoyikise omnye umntu. Ukoyikisa omnye umntu.</p>	<p>I frightened other people I frightened someone. Scaring someone else</p>
<p>23. I have felt despairing or hopeless</p>	<p>Ndikhe ndaziva ndingenathemba Ndizive ndiphelelwe lithemba Bendingento yanto.</p>	<p>I have been hopeless I was hopeless I was useless</p>
<p>24. I have thought it would be better if I were dead</p>	<p>Ndikhe ndacinga ukuba kuyakuba ngcono ukuba ndinokubhubha Ndicinge ukuba bekunokubangcono ukuba bendinokubhubha. Bekungangcono ukuba bendifile.</p>	<p>I have had thoughts that it would be better if I die I thought I would feel better if I were dead Would be better if I died</p>
<p>25. I have felt criticised by another person</p>	<p>Ndikhe ndaziva ndigxekekile kubanye abantu Ndizive ndigxeekiwe ngabanye abantu. Abantu bebesoloko bendigxeka.</p>	<p>I felt run down from other people I felt criticized by other people People used to criticise me</p>
<p>26. I have thought I have no friends</p>	<p>Ndikhe ndacinga ukuba andinazo izihlobo Ndicinge ukuba andinabahlobo Ibingathi andinabahlobo.</p>	<p>I've thought that I don't have friends I felt like I did not have friends It was as if I had no friends</p>

27. I have felt unhappy	Ndikhe ndaziva ndingonwabanga	I have felt unhappy
	Ndizive ndingonwabanga.	I was unhappy
	Bendingonwabanga.	I was unhappy
28. Unwanted images or memories have been distressing me	Imifanekiso-ngqondweni okanye iinkhumbulo ezingafunekiyo zindiphatha kakubi	Visions or unwanted thoughts make me sad
	Imifanekiso okanye iinkumbulo ezingendawo zindinxunguphalisile.	Images and useless thoughts got me depressed
	Bendineengcinga endingazifuniyo.	I had thoughts I did not want
29. I have been irritable when with other people	Ndiyadikwa ngabanye abantu	I'm feeling sick about other people
	Bendikruquka xa ndikunye nabanye abantu.	I got irritated when around people
	Bendingonwabi xa ndikunye nabantu.	Used to be unhappy amongst other people
30. I have thought I am to blame for my problems and difficulties	Ndikhe ndacinga ukuba ndim onotyholwa ngeengxaki nobunzima bam	I've thought that I am the reason of my problems and burdens
	Ndicinge ukuba bendinokusolwa ngeengxaki neenzima zam	I thought I'd be blamed for my problems and burdens
	Iingxaki neenzima zam ibingathi zibangelwa ndim.	My problems and difficulties were as if I'm the cause of them
31. I have felt optimistic about my future	Ndikhe ndaziva ndilindele okuhle kwikamva lam	I felt I am waiting for the best in my future
	Ndizive ndinethemba ngengomso lam.	I had hope for the future
	Bendibona ingomso lam lilihle.	Use to see myself with bright future
32. I have achieved the things I wanted to	Ndikhe ndaziva ndilindele okuhle kwikamva lam	I felt I'm waiting for the best in my future
	Ndiye ndazifumana izinto bendizifuna.	I got the things that I'd wanted
	Ndiphumelele kwizinto ebendizifuna	Achieved my goals

33. I have felt humiliated or shamed by other people	Ndikhe ndaziva ndithotyelwe phatsi okanye ndinodano ngabanye abantu  Ndizive ndiyintlekisa, ndingeyonto kwabanye abantu  Bendiyimpoxo ebantwini.	I've felt dropped down or disapproved about other people  I felt like I was a joke and useless compared to other people  I was a disgrace to others
34. I have hurt myself physically or taken dangerous risks with my health	Ndikhe ndazivisa ubuhlungu ngokwenyama okanye ndafaka impilo yam engozini  Ndizonzakalisile ngokwasemzimbeni okanye ndithathe imingcipheko enobungozi ngempilo yam.  Ndizonzakalisile ndathatha amanyath'elo ayingozi ngempilo yam.	I've felt painful emotion or put my health in danger  I took very dangerous decisions about my life and was at a physical risk  I've hurt myself and took strategic decision about my health
THANK YOU FOR YOUR TIME IN COMPLETING THIS QUESTIONNAIRE	NDIKHE NDAZIVISA UBUHLUNGU OKANYE NDAFAKA IMPILO YAM ENGOZINI  ENKOSI NGEXESHA LAKHO EKUGCWALISENI OLUTHOTHO LWEMIBUZO  ENKOSI NGOKUTHATHA KWAKHO INXAXHEBA	THANK YOU FOR YOUR TIME AND ANSWERING THIS QUESTIONNAIRE  THANK YOU FOR YOUR COOPERATION
Please turn over	Nceda uguqule iphepha  nceda uthyile ngaphaya	Please turn the page  Please Turn over
Page 1	Iphepha: 1	Page 1
Page 2	Iphepha: 2	Page 2

This table was used during step 3, the committee approach, to produce the first Xhosa translation of the CORE-OM. The relevant Xhosa phrases drawn from table 7.1.1 during this process are highlighted in grey.

### **7.2 Step 3: The committee approach**

The committee approach involved a collaboration of the opinions all six translation team members in creating one Xhosa translation drawing from the various options generated during the forward-translation process. However due to logistic restraints

the team was unable to meet as one group and instead met in two groups of three, and two, and the sixth translator met the researcher independently.

**a) The first committee meeting**

During the first committee meeting the professional translator and Rhodes student majoring in Xhosa who both completed forward-translations, and the Rhodes student majoring in psychology who completed a back-translation reviewed the instructions, likert scale descriptions and questionnaire items 1 to 17 of the original CORE-OM English version in comparison to the forward- and back-translations generated, all presented in table 7.1.1, selecting the most appropriate Xhosa translations.

Within the instructions section the three translators agreed that the second Xhosa forward translation “KUBALULEKILE- NCEDA FUNDA APHA KUQALA” was most appropriate for the first sentence “IMPORTANT PLEASE READ FIRST”. However for the second sentence “This form has 34 statements about how you have been OVER THE LAST WEEK” the translators agreed on using the majority of the second forward translation choice “Le fomu ineenkcazelo ezingama 34 zokuba ubunjani na KULE VEKI IPHELILEYO”, but replaced “Le fomu” with “Olu xwebhu” from the third forward translation choice because they considered “Olu xwebhu” a less colloquial vocabulary choice for “form”. For the third sentence “Please read each statement and think how often you felt that way last week”, the translators combined the first and second forward translation choices using “Nceda funda inkcazelo nganye uze ucinge ukuba” from the second forward translation choice and “uzive unjalo kangaphi na kuleveki iphelileyo” from the first forward translation choice.

With regard to the fourth sentence “Then tick the box which is closest to this” the translators selected the first forward translation choice “Uphawule ibhokisi ekufutshane na le nto”. While in the fifth sentence “*Please use a dark pen (not pencil) and tick clearly within the boxes*” they combined the first portion of the third forward translation choice “Sebenzisa ipeni emnyama uze” with the middle portion of the first forward translation choice “(hayi ilidi) uphawule” and the last portion of the second forward translation choice “phakathi ezibhokisini”. For the final sentence

“Over the last week” the translators noted that both forward translation choices were very similar but that the second choice “Kule veki iphelileyo” was grammatically more correct.

For the first likert scale description “Not at all” the translators combined the first forward translation choice “Khangé” and the third forward translation choice “Konke konke”. With regards to the second likert scale description “Only occasionally” the translators combined the first and third forward translation choices “Ngamanye amaxesha” with the last portion of the second forward translation choice “kuphela”. While for the third likert scale description “Sometimes” the translators used the first portion of the first and second forward translation choices “Ngamanye” and the last portion of the third forward translation choice “athile”. For the fourth likert scale description “Often”, the same Xhosa phrase “Rhoqo” had been used in both forward translation choices and was considered acceptable by the translators. While in the final likert scale description “Most of the time”, the first portion of the third forward translation choice “Phantse” was combined with the last portion of the second forward translation choice “ngamazesha onke”.

Within the questionnaire items section the translators used the first forward translation choice “Ndizive ndindedwa” for item 1 “I have felt terribly alone and isolated”. Although they suggested the inclusion of the Xhosa phrase “ndililolo” as a commonly used linguistic equivalent of loneliness. Within item 2 “I have felt tense, anxious or nervous” the translators again selected the first forward translation choice “Ndizive ndibambekile, ndinexhala ndiphakuphaku”. Although they suggested the inclusion of the Xhosa phrase “ngokomzimba” to emphasise the physical sensation of tension in the body. With regard to item 3 “I have felt I have someone to turn to for support when needed” the translators selected the first forward translation choice “Ndizive ndinaye umntu onokundixhasa xa ndidinga” but added “inkxaso” to emphasise being able to “turn to someone for support”.

In item 4 “I have felt OK about myself” the translators used the same sentence structure from the first and second forward translation choices “Ndizive ... ngesiqu sam” however did not consider “ndilungile” or “ndizithanda” appropriate linguistic equivalents for “felt OK about myself” and instead agreed on the Xhosa phrase

“kakuhle”. While for item 5 “I have felt totally lacking in energy and enthusiasm” the translators combined the first portion of the second forward translation choice “Ndizive ndiswelamandla” with the last portion of the first forward Xhosa translation choice “nenzondelelo”. With regard to item 6 “I have been physically violent to others” the translators selected the second forward translation choice “Bendindlongondlongo kwabanye abantu”.

In item 7 “I have felt able to cope when things go wrong” the translators combined the first portion of the first forward translation choice “Ndizive ndikwazi ukumelana nezinto xa” and the last portion of the second forward translation choice “zingahambi kakuhle”. While for item 8 “I have been troubled by aches, pains or other physical problems” the translators combined the first and last portions of the second forward translation choice “Bendikhathazwa zintlungu, ziingqaqambo ... zomzimba” which included the same phrase “ndakhathazwa ziintlungu” used to describe “physical pains” in the first forward translation choice. With regards to item 9 “I have thought of hurting myself” the translators considered the second forward translation choice “Bendinengcinga zokuzonzakalisa” the most appropriate.

In item 10 “Talking to people has felt too much for me” the translators combined the first and last portions of the first forward translation choice “Ukuthetha nabantu ... kunzima kum” but used the Xhosa phrase “kuvakele” from the second forward translation choice as a more conceptually equivalent choice for the English idiom “has felt too much” meaning “too heavy for me to carry”. While in item 11 “Tension and anxiety have prevented me doing important things” the translators considered the second forward translation choice “Uxinzelelo nonxunguphalo lundithintele ukwenza izinto ezibalulekileyo” the most appropriate. With regards to item 12 “I have been happy with the things I have done” the translators selected “Bendonwabile zizinto endizenzileyo” which was used in both the second and third forward translation choices, and a portion of which (“izinto endizenzileyo”) was also used in the first forward translation choice.

In item 13 “I have been disturbed by unwanted thoughts and feelings” the translators selected the third forward translation choice “Bendineengcinga neemvakalelo ezingafunekiyo”, a portion of which was also used in the first (“zingcinga

...ezingafunekiyo) and second (“ziingcinga neemvakalelo) forward translation choices. While in item 14 “I have felt like crying” the translators combined the first portion of the second forward translation choice “Ndizive” with the middle portion of the first forward translation choice “funa” and the last portion of the third forward translation choice “ukukhala”. With regard to item 15 “I have felt panic or terror” the translators considered the second forward translation choice “Ndive ukuphaphazela noloyiko” the most appropriate.

In item 16 “I made plans to end my life” the translators selected the third forward translation choice “Ndiye ndaceba ukuzibulala”. While for item 17 “I have felt overwhelmed by my problems” the translators used the sentence structure from the second forward translation choice “Ndizive ...zingxaki zam” but did not consider “ndaziva ndisindwa” or “ndoyisiwe” linguistically equivalent choices for “feeling overwhelmed” and instead suggested the Xhosa phrase “ndigutyungelwe”.

The resultant Xhosa translation choices made during the first committee meeting are outlined in table 7.2.1 below.

Table 7.2.1 Resultant Xhosa translation choices from the first committee meeting

CORE-OM Original English Version	Xhosa translation
<p>IMPORTANT PLEASE READ THIS FIRST. This form has 34 statements about how you have been over the last week. Please read each statement and think how often you felt that way last week. Then tick the box which is closest to this.</p> <p><i>Please use a dark pen (not pencil) and tick clearly within the boxes.</i></p> <p>Over the last week</p> <p>Not at all Only occasionally Sometimes Often Most or all the time</p> <p>Office use only</p>	<p>KUBALULEKILE- NCEDA FUNDA APHA KUQALA. Oluxwebhu linenkcazelo ezingama-34 zokuba ubunjani na KULE VEKI IPHELILEYO. Nceda funda inkcazelo nganye uze ucinge ukuba uzive unjalo kangaphi na kwiveki iphelileyo. Phawule ibhokisi ekufutshane na le nto.</p> <p><i>Sebenzisa ipeni emnyama (hayi ilidi) uze uphawule phakathi ebhokisini.</i></p> <p>Kule veki iphelileyo</p> <p>Khange konke konke Ngamanye amaxesha kuphela Ngamaxesha athile Rhoqo Phantse ngamaxesha onke</p> <p>Isetyenziswa e-ofisini</p>

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1. I have felt terribly alone and isolated	1. Ndizive ndindedwa ndililolo
2. I have felt tense, anxious or nervous	2. Ndizive ndibambekile, ngokomzimba, ndinexhala, ndiphakuphaku
3. I have felt I have someone to turn to for support when needed	3. Ndizive ndinaye umntu onokundixhasa xa ndidinga inkxaso
4. I have felt OK about myself	4. Ndizive kakuhle ngesiqu sam
5. I have felt totally lacking in energy and enthusiasm	5. Ndizive ndiswelamandla nenzondelelo
6. I have been physically violent to others	6. Bendindlongondlongo kwabanye abantu
7. I have felt able to cope when things go wrong	7. Ndizive ndikwazi ukumelana nezinto xa zingahambi kakuhle
8. I have been troubled by aches, pains or other physical problems	8. Bendikhathazwa ziintlungu, iingqanqambo zomzimba
9. I have thought of hurting myself	9. Bendinengcinga zokuzonzakalisa.
10. Talking to people has felt too much for me	10. Ukuthetha nabantu kuvakele kunzima kum
11. Tension and anxiety have prevented me doing important things	11. Uxinzelelo nonxunguphalo lundithintele ukwenza izinto ezibalulekileyo
12. I have been happy with the things I have done	12. Bendonwabile zizinto endizenzileyo
13. I have been disturbed by unwanted thoughts and feelings	13. Bendineengcinga neemvakalelo ezingafunekiyo
14. I have felt like crying	14. Ndizive ndifuna ukukhala
15. I have felt panic or terror	15. Ndiva ukuphaphazela noloyiko
16. I have made plans to end my life	16. Ndiye ndaceba ukuzibulala.
17. I have felt overwhelmed by my problems	17. Ndizive ndigutyungelwe ziingxaki zam

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## **b) The second committee meeting**

During the second committee meeting the professional translator who completed a back-translation and the professional nurse specialising in mental health who completed a forward-translation reviewed the Xhosa translations selected during the first committee meeting in comparison to the original CORE-OM English version items and suggested four changes. While reviewing item 2 "I have felt tense, anxious

or nervous” the professional nurse suggested removing an unnecessary comma between “ndibambekile” and “ngokomzimba” and the inclusion of the word “okanye” meaning “or” between “ndinexhala” and “ndiphakuphaku” to emphasise that individuals need only experience one of these symptoms of anxiety. In item 8 “I have been troubled by aches, pains or other physical symptoms” both translators pointed out that “other physical symptoms” had not been included in the Xhosa translation and suggested including “okanye ezinye ingxaki” in the translated Xhosa item.

Similarly the professional nurse commented that the Xhosa translation of item 13 “I have been disturbed by unwanted thoughts and feelings” did not communicate the understanding that the unwanted thoughts and feelings were disturbing to the individual and suggested the inclusion of the phrase “Bendiphazanyiswe ziingcinga” to highlight this understanding. Finally while reviewing item 16 “I made plans to end my life” the professional translator highlighted that the use of the word “ndaceba” referred to the making of long term plans and suggested the word “ndacinga” instead which referred to thinking about taking one’s life. He felt that in the context of the English phrase this linguistic choice made better conceptual sense.

Next the professional translator and nurse reviewed items 18 to 34 of the original CORE-OM English version in comparison to the forward- and back-translations presented in table 7.1.1 and selected the most appropriate Xhosa translations.

In item 18 “I have had difficulty getting to sleep or staying asleep the translators considered the third forward translation choice “Bendiphuthelwa” the most appropriate. While in item 19 “I have felt warmth or affection for someone” the translators selected the first forward translation choice “Ndive ubushushu nothando komnye umntu.” A similar Xhosa phrase (“nothando lomntu”) was used in the last portion of the second forward translation choice. With regard to item 20 “My problems have been impossible to put to one side” the translators considered the first forward translation choice “Kubenzima ukubeka iingxaki zam ecaleni” the most appropriate.

In item 21 “I have been able to do most things I needed to” the translators again selected the first forward translation choice “Ndikwazile ukuzenza izinto ezininzi ebendinga ukuzenza”. Similar Xhosa phrases were used in the first portion

("Ndikwazile ukwenza") and the last portion ("ukuzenza") of the second forward translation choice. While in item 22 "I have threatened or intimidated another person" the translators considered the second forward translation choice "Ndigrogrise okanye ndoyikise omnye umntu" the most appropriate. With regard to item 23 "I have felt despairing or hopeless" the translators selected the second forward translation choice "Ndizive ndiphelelwe lithemba" but included "ndingento" from the third forward translation choice as an additional adjective for "hopeless".

In item 24 "I have thought it would be better if I were dead" translators considered the first and second forward translation choices "Ndicinge ukuba bekunokubangcono ukuba bendinokubhubha" the most appropriate. While in item 25 "I have felt criticised by another person" the translators combined the beginning and middle portion of the second forward translation choice "Ndizive ndigxe kiwe ngabanye" which closely resembled the middle portion of the first forward translation choice "ndaziva ndigxekekile kwabanye". With regard to item 26 "I have thought I have no friends" the translators selected the second forward translation choice "Ndicinge ukuba andinabahlobo". A similar Xhosa phrase was used in the last portion of the third forward translation choice ("andinabahlobo") to denote "I have no friends".

In item 27 "I have felt unhappy" the translators considered the second forward translation choice "Ndizive ndingonwabanga" the most appropriate, however the same Xhosa phrase "ndingonwabanga" was used to describe "unhappiness" in both the first and third forward translation choices too. While in item 28 "Unwanted images or memories have been distressing me" the translators combined the beginning and middle portions of the first forward translation choice "Imifanekiso-ngqondweni okanye iinkhumbulo ezingafunekiyo" majority of which was also used in the second translation choice ("Imifanekiso okanye iinkumbulo") and the last portion of the second translation choice ("zindinxunguphalisile"). With regard to item 29 "I have been irritable when with other people" the translators selected the second forward translation choice "Bendikruquka xa ndikunye nabanye abantu".

In item 30 "I have thought I am to blame for my problems and difficulties" the translators considered the second forward translation choice "Ndicinge ukuba bendinokusolwa ngeengxaki neenzima zam" the most appropriate. While for item 31

“I have felt optimistic about my future” the translators combined the first “Ndizive” and last “ngengomso lam” portions of the second forward translation and the middle portion of the first forward translation choice “ndilindele okuhle”. With regard to item 32 “I have achieved the things I wanted to” the translators selected the second forward translation choice “Ndiye ndazifumana izinto bendizifuna” but corrected the grammar to “Ndizifumene izinto ebindizifuna”.

In item 33 “I have felt humiliated or shamed by other people” the translators considered the first forward translation choice “Ndikhe ndaziva ndithotyelwe phatsi okanye ndinodano ngabanye abantu” the most appropriate. While for item 34 “I have hurt myself physically or taken dangerous risk with my health” the translators selected the second forward translation choice “Ndizonzakalisile ngokwasemzimbeni okanye ndithathe imingcipheko enobungozi ngempilo yam” the first portion of which (“Ndizonzakalisile”) was also used in the third forward translation choice.

In addition the translators considered the second forward translation choice “ENKOSI NGEXESHA LAKHO EKUGCWALISENI OLUTHOTHO LWEMIBUZO” the most appropriate choice for “THANK YOU FOR YOUR TIME IN COMPLETING THIS QUESTIONNAIRE”. The Xhosa translations “Nceda uguqule iphepha” for “please turn the page” and “Iphepha 1/2” for “Pages 1/2” were also deemed appropriate.

The resultant Xhosa translation choices made during the second committee meeting are outlined in table 7.2.2 below.

Table 7.2.2 Resultant Xhosa translation choices from second committee meeting

CORE-OM Original English Version	Xhosa translation
2. I have felt tense, anxious or nervous	2. Ndizive ndibambekile ngokomzimba, ndinexhala okanye ndiphakuphaku
8. I have been troubled by aches, pains or other physical problems	8. Bendikhathazwa ziintlungu, iingqanqambo okanye ezinye ingxaki zomzimba
13. I have been disturbed by unwanted thoughts and feelings	13. Bendiphazanyiswe ziingcinga neemvakalelo ezingafunekiyo
16. I made plans to end my life	16. Ndiye ndacinga ukuzibulala.

- |   |  |
|---|--|
| 18. I have had difficulty getting to sleep or staying asleep              | 18. Bendiphuthelwa   |
| 19. I have felt warmth or affection for someone                           | 19. Ndive ubushushu nothando komnye umntu  |
| 20. My problems have been impossible to put to one side                   | 20. Kubenzima ukubeka iingxaki zam ecaleni elinye  |
| 21. I have been able to do most things I needed to                        | 21. Ndikwazile ukuzenza izinto ezininzi ebendinga ukuzenza                                   |
| 22. I have threatened or intimidated another person                       | 22. Ndigrogrise okanye ndoyikise omnye umntu.  |
| 23. I have felt despairing or hopeless                                    | 23. Ndizive ndingento okanye ndiphelelwe lithemba  |
| 24. I have thought it would be better if I were dead                      | 24. Ndinge ukuba bekunokubangcono ukuba bendinokubhubha.                                     |
| 25. I have felt criticised by another person                              | 25. Ndizive ndigxekeiwe ngabanye   |
| 26. I have thought I have no friends                                      | 26. Ndinge ukuba andinabahlobo   |
| 27. I have felt unhappy   | 27. Ndizive ndingonwabanga.  |
| 28. Unwanted images or memories have been distressing me                  | 28. Imifanekiso-ngqondweni okanye iinkumbulo ezingafunekiyo zindinxunguphalisile             |
| 29. I have been irritable when with other people                          | 29. Bendikruqula xa ndikunye nabanye abantu.   |
| 30. I have thought I am to blame for my problems and difficulties         | 30. Ndinge ukuba bendinokusolwa ngeengxaki neenzima zam                                      |
| 31. I have felt optimistic about my future                                | 31. Ndizive ndilindele okuhle ngengomso lam  |
| 32. I have achieved the things I wanted to                                | 32. Ndizifumene izinto ebindizifuna  |
| 33. I have felt humiliated or shamed by other people                      | 33. Ndikhe ndaziva ndithotyelwe phantsi okanye ndinodano ngabanye abantu                     |
| 34. I have hurt myself physically or taken dangerous risks with my health | 34. Ndizonzakalisile ngokwasemzimbeni okanye ndithathe imingcipheko enobungozi ngempilo yam. |

THANK YOU FOR YOUR TIME IN  
COMPLETING THIS QUESTIONNAIRE

Please turn over

Page 1

Page 2

ENKOSI NGEXESHA LAKHO EKUGCWALISENI  
OLUTHOTHO LWEMIBUZO

Nceda uguqule iphepha

Iphepha: 1

Iphepha: 2

### c) The final review meeting

The sixth translator, the professional nurse responsible for the back-translation, was unable to attend either of the two committee meetings, but subsequently reviewed the Xhosa translation choices individually paying particular attention to grammar and syntax. He found no grammatical or syntactical errors. He then compared the Xhosa translation choices with the original CORE-OM English version, focusing on linguistic and conceptual equivalence. He suggested five changes.

In item 5 “I have felt totally lacking in energy and enthusiasm” he explained that the phrase “nenzondelelo” used to denote lack of enthusiasm was more associated with “determination” or “perseverance”. Instead he suggested “nochulumanco” as a more linguistically equivalent translation. In item 6 “I have been physically violent with others” physical violence had been conveyed using the Xhosa phrase “bendindlongondlongo” however the translator explained that this translation referred to being overcome by wild rage or intense uncontrollability and excluded less intense forms of physical violence such as shoving, slapping or punching. For purposes of this translation he suggested the Xhosa phrase “bendibetha kwabanye” to include all forms of violent behaviour.

Item 20 “My problems have been impossible to put to one side” used the Xhosa phrase “ecaleni elinye” to express the English idiom of “putting a problem to one side” however the translator explained that this phrase while linguistically equivalent was also a literal translation suggesting the moving of a problem in a particular direction, and not the conceptual meaning of being able to contain anxiety and worry relating to a problem. He suggested the Xhosa phrase “ndawonye” instead, as a more conceptually equivalent translation of becoming “overwhelmed by the problem”.

While item 29 “I have been irritable when with other people” used the Xhosa phrase “bendikruqula” to communicate irritation, but the translator explained that “bendikwe” was a linguistically more equivalent phrase and that “bendikruqula” is more frequently associated with boredom. Finally item 33 “I have felt humiliated or shamed by other people” was translated using the Xhosa phrases “ndithotyelwe” and “ndinodano” however the translator explained that “ndithotyelwe” communicates a sense of “being

looked down at”, and “ndinodano” an understanding that “others are disappointed”. He suggested instead the Xhosa phrases “ndiyintlekise” meaning “to be embarrassed or humiliated” and “ndinyunyezwa” meaning “to be laughed at or shamed by others”.

The resultant Xhosa translation choices made during the third committee meeting are outlined in table 7.2.3.

Table 7.2.3 Resultant Xhosa translations choices from third committee meeting

CORE-OM Original English Version	Xhosa translation
5. I have felt totally lacking in energy and enthusiasm	5. Ndizive ndiswelamandla nochulumanco
6. I have been physically violent to others	6. Bendibetha kwabanye abantu
20. My problems have been impossible to put to one side	20. Kubenzima ukubeka iingxaki zam ndawonye
29. I have been irritable when with other people	29. Bendikwe xa ndikunye nabanye abantu.
33. I have felt humiliated or shamed by other people	33. Ndaziva ndiyintlekise okanye ndinyunyezwa ngabanye abantu

After collating all the recommended translation choices suggested during the committee approach an initial CORE-OM Xhosa version was generated and is presented in table 7.2.4 below.

Table 7.2.4 The initial CORE-OM Xhosa translation

CORE-OM Original English Version	Finalised Xhosa translation
<p><b>IMPORTANT PLEASE READ FIRST.</b></p> <p>This form has 34 statements about how you have been over the last week. Please read each statement and think how often you felt that way last week. Then tick the box which is closest to this.</p> <p><i>Please use a dark pen (not pencil) and tick clearly within the boxes.</i></p> <p>Over the last week</p>	<p><b>KUBALULEKILE- NCEDA FUNDA APHA KUQALA.</b></p> <p>Oluxwebhu linenkcazelo ezingama-34 zokuba ubunjani na KULE VEKI IPHELILEYO. Nceda funda inkcazelo nganye uze ucinge ukuba uzive unjalo kangaphi na kwiveki iphelileyo. Phawule ibhokisi ekufutshane na le nto.</p> <p><i>Sebenzisa ipeni emnyama (hayi ilidi) uze uphawule phakathi ebhokisini.</i></p> <p>Kule veki iphelileyo</p>

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Not at all  
Only occasionally  
Sometimes  
Often  
Most or all the time

Khange konke konke  
Ngamanye amaxesha kuphela  
Ngamaxesha athile  
Rhoqo  
Phantse ngamaxesha onke

Office use only

Isetyenziswa e-ofisini

- |  |   |
|--|---|
| 1. I have felt terribly alone and isolated                         | 1. Ndizive ndindedwa ndililolo  |
| 2. I have felt tense, anxious or nervous                           | 2. Ndizive ndibambekile ngokomzimba, ndinexhala okanye ndiphakuphaku      |
| 3. I have felt I have someone to turn to for support when needed   | 3. Ndizive ndinaye umntu onokundixhasa xa ndidinga inkxaso                |
| 4. I have felt OK about myself                                     | 4. Ndizive kakuhle ngesiqu sam  |
| 5. I have felt totally lacking in energy and enthusiasm            | 5. Ndizive ndiswelamandla nochulumanco                                    |
| 6. I have been physically violent with others                      | 6. Bendibetha kwabanye abantu   |
| 7. I have felt able to cope when things go wrong                   | 7. Ndizive ndikwazi ukumelana nezinto xa zingahambi kakuhle               |
| 8. I have been troubled by aches, pains or other physical problems | 8. Bendikhathazwa ziintlungu, iingqanqambo okanye ezinye ingxaki zomzimba |
| 9. I have thought of hurting myself                                | 9. Bendinengcinga zokuzonzakalisa.  |
| 10. Talking to people has felt too much for me                     | 10. Ukuthetha nabantu kuvakele kunzima kum                                |
| 11. Tension and anxiety have prevented me doing important things   | 11. Uxinzelelo nonxunguphalo lundithintele ukwenza izinto ezibalulekileyo |
| 12. I have been happy with the things I have done                  | 12. Bendonwabile zizinto endizenzileyo                                    |
| 13. I have been disturbed by unwanted thoughts and feelings        | 13. Bendiphazanyiswe ziingcinga neemvakalelo ezingafunekiyo               |
| 14. I have felt like crying  | 14. Ndizive ndifuna ukukhala  |
| 15. I have felt panic or terror                                    | 15. Ndiva ukuphaphazela noloyiko  |
| 16. I made plans to end my life                                    | 16. Ndiye ndacinga ukuzibulala.   |
| 17. I have felt overwhelmed by my problems                         | 17. Ndizive ndigutyungelwe ziingxaki zam                                  |
| 18. I have had difficulty getting to sleep or staying asleep       | 18. Bendiphuthelwa  |
| 19. I have felt warmth or affection for someone                    | 19. Ndiva ubushushu nothando lomnye umntu                                 |

- |   |  |
|---|--|
| 20. My problems have been impossible to put to one side                   | 20. Kubenzima ukubeka iingxaki zam ndawonye  |
| 21. I have been able to do most things I needed to                        | 21. Ndikwazile ukuzenza izinto ezininzi ebendinga ukuzenza                                   |
| 22. I have threatened or intimidated another person                       | 22. Ndigrogrise okanye ndoyikise omnye umntu.  |
| 23. I have felt despairing or hopeless                                    | 23. Ndizive ndingento okanye ndiphelelwe lithemba  |
| 24. I have thought it would be better if I were dead                      | 24. Ndinge ukuba bekunokubangcono ukuba bendinokubhubha.                                     |
| 25. I have felt criticised by another person                              | 25. Ndizive ndigxekiwe ngabanye  |
| 26. I have thought I have no friends                                      | 26. Ndinge ukuba andinabahlobo   |
| 27. I have felt unhappy   | 27. Ndizive ndingonwabanga.  |
| 28. Unwanted images or memories have been distressing me                  | 28. Imifanekiso-ngqondweni okanye iinkumbulo ezingafunekiyo zindinxunguphalisile             |
| 29. I have been irritable when with other people                          | 29. Bendikwe xa ndikunye nabanye abantu.   |
| 30. I have thought I am to blame for my problems and difficulties         | 30. Ndinge ukuba bendinokusolwa ngeengxaki neenzima zam                                      |
| 31. I have felt optimistic about my future                                | 31. Ndizive ndilindele okuhle ngengomso lam  |
| 32. I have achieved the things I wanted to                                | 32. Ndizifumene izinto ebindizifuna  |
| 33. I have felt humiliated or shamed by other people                      | 33. Ndaziva ndiyintlekise okanye ndinyunyezwa ngabanye abantu                                |
| 34. I have hurt myself physically or taken dangerous risks with my health | 34. Ndizonzakalisile ngokwasemzimbeni okanye ndithathe imingcipheko enobungozi ngempilo yam. |

THANK YOU FOR YOUR TIME IN COMPLETING THIS QUESTIONNAIRE

Please turn over

Page 1

Page 2

ENKOSI NGEXESHA LAKHO EKUGCWALISENI OLUTHOTHO LWEMIBUZO

Nceda uguqule iphepha

Iphepha: 1

Iphepha: 2

This version was formatted into a lay-out design that closely resembled the original CORE-OM English version to assist in ease of readability and completion, and is presented on the following pages. The questionnaire was then qualitatively piloted.

# Initial CORE-OM isiXhosa Translation

PILOT STUDY: NOT FOR CLINICAL USE

## KUBALULEKILE- NCEDA FUNDA APHA KUQALA

Oluxwebhu linenkcazelo ezingama-34 zokuba ubunjani na KULE VEKI IPHELILEYO.  
Nceda funda inkcazelo nganye uze ucinge ukuba uzive unjalo kangaphi na kwiveki iphelileyo.

Phawule ibhokisi ekufutshane na le nto.

*Sebenzisa ipeni emnyama (hayi ilidi) uze uphawule phakathi ebhokisini.*

Kule veki iphelileyo		Khange konke konke	Ngamanye amaxesha kuphela	Ngamaxesha athile	Rhoqo	Phantse ngamaxesha onke	Isetyenziswa e-ofisini	
1	Ndizive ndindedwa ndililolo	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
2	Ndizive ndibambekile ngokomzimba, ndinexhala okanye ndiphakuphaku	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
3	Ndizive ndinaye umntu onokundixhasa xa ndidinga inkxaso	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
4	Ndizive kakuhle ngesiqu sam	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	W
5	Ndizive ndiswelamandla nochulumanco	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
6	Bendibetha kwabanye abantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
7	Ndizive ndikwazi ukumelana nezinto xa zingahambi kakuhle	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
8	Bendikhathazwa ziintlungu, iingqanqambo okanye ezinye ingxaki zomzimba	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
9	Bendinengcinga zokuzonzakalisa	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
10	Ukuthetha nabantu kuvakele kunzima kum	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
11	Uxinzelelo nonxunguphalo lundithintele ukwenza izinto ezibalulekileyo	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
12	Bendonwabile zizinto endizenzileyo	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
13	Bendiphazanyiswe ziingcinga neemvakalelo ezingafunekiyo	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
14	Ndizive ndifuna ukukhala	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	W

**Nceda uguqule iphepha**

## Kule veki iphelileyo

		Khange konke konke	Ngamanye amaxesha kuphela	Ngamaxesha athile	Rhoqo	Phantse ngamaxesha onke	Isetyenziswa e-ofisini	
15	Ndive ukuphaphazela noloyiko	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
16	Ndiye ndacinga ukuzibulala	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
17	Ndizive ndigutyungelwe ziingxaki zam	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	W
18	Bendiphuthelwa	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
19	Ndive ubushushu nothando lomnye umntu	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
20	Kubenzima ukubeka iingxaki zam ndawonyo	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
21	Ndikwazile ukuzenza izinto ezininzi ebendinga ukuzenza	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
22	Ndigrogrise okanye ndoyikise omnye umntu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
23	Ndizive ndingento okanye ndiphelelwe lithemba	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
24	Ndicinge ukuba bekunokubangcono ukuba bendinokubhubha	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
25	Ndizive ndigxekewe ngabanye	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
26	Ndicinge ukuba andinabahlobo	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
27	Ndizive ndingonwabanga	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
28	Imifanekiso-ngqondweni okanye iinkumbulo ezingafunekiyo zindinxunguphalisile	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
29	Bendikwe xa ndikunye nabanye abantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
30	Ndicinge ukuba bendinokusolwa ngeengxaki neenzima zam	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
31	Ndizive ndilindele okuhle ngengomso lam	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	W
32	Ndizifumene izinto ebindizifuna	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
33	Ndaziva ndiyintlekise okanye ndinyunyezwa ngabanye abantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
34	Ndizonzakalisile ngokwasemzimbeni okanye ndithathe imingcipheko enobungozi ngempilo yam	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R

**ENKOSI NGEXESHA LAKHO EKUGCWALISENI OLUTHOTHO LWEMIBUZO**

## SUMMARY

Six translators were involved in the forward- and back-translation process and the committee approach, allowing for rich and varied Xhosa translations to be generated during the forward translation process. The generating of these translations was further assisted by the use of translation guidelines, as recommended by Brislin (1986) and Harkness (2003), that standardised the translation process, allowing for the production of table 7.1.1. This table was a summary of the original CORE-OM English version, the three Xhosa forward translation options generated by the forward-translators, and the three accompanying English back-translations for each CORE-OM instruction, likert scale description and questionnaire item. This summary sheet proved advantageous to the translation team during the committee approach in a number of ways.

Firstly the variety of Xhosa translations for each questionnaire item assisted the translators in selecting the most appropriate phrases or vocabulary choices from across the three available options. For example three Xhosa phrases (“Zokuthabatha”, “Zokunqamlela” and “Ukuzibulala”) were suggested for the English phrase “to end my life” in item 16 of the original CORE-OM English version. The translators were able to evaluate each option and selected “ukuzibulala” as the most appropriate vocabulary choice.

Secondly when translators were unable to find one suitable option they were able to combine portions of the Xhosa translations across the forward translation options for each questionnaire item to produce the most appropriate translation. For example while deliberating about the most appropriate vocabulary choices for the likert scales descriptions, the translators incorporated two proposed translations for the English description “Not at all” (“Kange” and “Konke konke”) into one Xhosa translation (“Kange konke konke). Similarly the Xhosa options “Ngamanye amaxesha” and “Amaxesh’athile” proposed for the English description “Sometimes” were combined into “Ngamaxesha athile”.

Thirdly the variety of forward-translation options allowed the translators to identify commonly used Xhosa words or phrases, repeatedly chosen across the translations

for a particular questionnaire item, that assisted them in vocabulary choices. For example in item 1 (“I have felt terribly alone and isolated) “ndindedwa” was used within all three forward-translation choices to denote loneliness, indicating that it was a commonly accepted vocabulary choice for the English word “alone”. While the English phrase “I have been happy with the things I have done” in item 12 was translated into the same Xhosa phrase in two of the three translation options (“Bendonwabile zizinto endizenzileyo”) again demonstrating a degree of consensus with regards to the Xhosa translation for the English phrase.

Fourthly, the ability to review and select from a variety of translation options allowed the translators to recognise poor translation choices and then generate more appropriate alternatives. For example three vocabulary choices were provided for the English phrase “I have felt OK about myself” in item 4 (“ndilungile”, “kulungile” and “Bendizithanda”) however after reviewing these options the translators felt that none of the vocabulary choices communicated the relevant meaning and together generated a fourth, more appropriate vocabulary choice (“kakuhle”).

Considering these examples it is evident that the use of multiple translators proved advantageous in generating a variety of linguistic choices during the forward and back translation process as was also documented by Steele and Edwards (2008a) during the Xhosa translation of the Beck Anxiety Inventory, the Beck Depression Inventory II and the Beck Hopelessness Scale. These choices generated discussion and debate that promoted the selection of the most appropriate translation choices. The availability of back-translations also assisted the researcher (who had limited Xhosa language skills) in facilitating discussion.

However in spite of these advantages it must also be acknowledged that the process of psychometric tool translation requires considerable time and financial resources (Hambleton, 2005) which increase in proportion to the size of the translation team. In addition logistical difficulties increase with multiple translators, as was also noted by Steele and Edwards (2008a). During the planning of the CORE-OM committee meetings the team of translators were unable to find a common meeting time and therefore met as two groups, while one translator was unable to make either meetings and arranged a third meeting time. As a result, while some discussion and

debate occurred during the committee meetings, this discussion was limited to the opinions of two or three translators. Advantages to these smaller discussion groups included ease of facilitation during the focus group discussions and ensuring that each member's opinion was heard and considered. While disadvantages included the need for an additional meeting time and venue to accommodate the remaining translators who were unavailable for the first committee meeting and limited discussion and challenging debate due to the small number of group members.

### **7.3 Step 4: The small scale qualitative pilot**

The small scale qualitative pilot of the initial CORE-OM Xhosa translation took the form of three reviews: first by the Xhosa III class and their lecturers from the Rhodes University African Languages Department; second by a group of three psychologists who routinely conducted psychotherapy in Xhosa at the University of Fort Hare student counselling centre; and third by a group of bilingual professionals including Professor Evans, one of the CORE-OM developers, a bilingual psychiatric nurse from the UK, and a counselling psychologist and Xhosa teacher from Grahamstown, South Africa.

#### **a) Review by an Xhosa III class at Rhodes University**

The qualitative review conducted by the Xhosa III class and their lecturers took place over two meetings. While evaluating vocabulary choices during the qualitative pilot the Xhosa III class referred to both English-Xhosa and Xhosa-English dictionaries to ensure that the vocabulary choices they used were an appropriate and meaningful fit across both languages. During the first meeting the Xhosa III class began by reviewing the instructions section of the initial CORE-OM Xhosa translation. The class was asked to pay particular attention to the comprehensiveness of the instructions. Numerous spelling and grammatical errors were identified and corrected. These included separating "Oluxwebhu" into "Olu xwebhu", correcting "linenkcazelo" to "luneenkcazelo" and changing "ziva" from past tense into the past continuous tense "ubuzivanjani" in the first sentence. Within the second sentence the class suggested removing "u" from "unjalo", replacing "kangaphi" meaning "how many" to "kangkanani" meaning "how much" and correcting "iphelileyo" to

“ephelileyo”. Within the third sentence the class corrected “Phawule” to “Phawula” and recommended that an additional Xhosa phrase “nendlela ozive ngayo nge-” accompanied by a tick box be added to the instructions to assist in demonstrating the instruction “Then tick the box which is closest to this”. In the final sentence the class suggested replacing the Xhosa word “ilidi” (for pencil) with “ipensile”, a word considered to be a more popular and appropriate choice for the target population of students for which the translation was being prepared, and removing “phakathi” (meaning “inside”) from the sentences as this is implied, and inserting “ngokucacileyo” (meaning “clearly”). The class concluded that besides these errors, the instructions were clear and comprehensive.

Following a review of the instructions the Xhosa III class then focused on the readability and utility of the likert scale descriptions. Again the class was asked to pay particular attention to the comprehensiveness of the response scale. While the class approved of the initial Xhosa translation choices made during the committee approach for the first “Kange konke konke”, fourth “Rhoqo” and fifth “Phantse ngamaxsha onke” likert scale descriptions, they commented that the second “Ngamanye amaxesha kuphela” and third “Ngamaxsha athile” descriptions were too similar. Although, the group recognised clearly the increasing frequency denoted in the other three likert scale descriptions, which assisted in contextualising the meaning of the problematic descriptions. They suggested changing the second likert scale description from “Ngamanye amaxesha kuphela” to “Ngoko nangoko” in order to more clearly differentiate “Only occasionally” from “Sometimes”. The class approved of the initial Xhosa translation choice “Kule veki iphelileyo” made during the committee approach for translation of the English phrase “Over the last week.”

The group was asked whether seeing the likert scale descriptions in a formatted sequence along with numbered blocks that indicated increasing or decreasing numeric values sequentially assisted in the understanding of the likert scale descriptions. However the group commented that they had not noticed these numbers and found them of little value in assisting in the understanding of the Xhosa phrases for the two above-mentioned likert scale descriptions. In addition the senior lecturer noted that she found the final likert scale column (“Isetyenziswa e-ofisini”) confusing and was unsure how to interpret the purpose of that column. However the

Xhosa III students argued that they immediately recognised that the final column was explicitly for administrative use and that this was clearly communicated by the Xhosa phrase “Isetyenziswa e-ofisini”. The students commented that other students, familiar with questionnaires would find this phrase easy to comprehend.

Having reviewed the likert scale descriptions the class then examined questionnaire items 1-14 on the first page of the initial CORE-OM Xhosa translation using the original CORE-OM English version for comparison. In item 1 “Ndizive ndindedwa ndililolo” the class explained that “ndindedwa” and “ndililolo” were essentially synonymous and indicative of “loneliness”, and suggested replacing “ndililolo” with “ndilikheswa” as a more linguistically equivalent choice for “isolation”. While in item 2 “Ndizive ndibambekile ngokomzimba, ndinexhala okanye ndiphakuphaku” the class commented that the Xhosa phrase “ndibambekile” made reference to vague physical illness, and instead suggested grammatically restructuring the sentence to more clearly communicate the experience of anxious tension in the body using the phrase “Bendibambe umzimba”. This phrase was suggested again in item 11 to denote the same experience of anxious tension. The Xhosa III class considered the initial Xhosa translation choices made during the committee approach appropriate for items 3 “Ndizive ndinaye umntu onokundixhasa xa ndidinga inkxaso” and 4 “Ndizive kakuhle ngesiqu sam”, however in item 5 “Ndizive ndiswelamandla nochulumanco” they identified a grammatical error in the Xhosa phrase “ndiswelamandla” correcting it to “ndiswele amandla” and suggested replacing “nochulumanco” with “ndingenamdlawanto” as a more linguistically equivalent choice for “enthusiasm”. With regard to item 6 “Bendibetha kwabanye abantu” the class suggested “ndlongo-ndlongo” as an addition to the questionnaire item in order to more clearly express the “act of physical violence”.

The class approved of the initial translation choices made during the committee approach for items 7 “Ndizive ndikwazi ukumelana nezinto xa zingahambi kakuhle”, 8 “Bendikhathazwa ziintlungu, iingqanqambo okanye ezinye ingxaki zomzimba” and 9 “Bendinengcinga zokuzonzakalisa”. Although they did identify two spelling errors in item 8 correcting “iingqanqambo” to “iingqaqambo” and “ingxaki” to “iingxaki”, and a grammatical error in item 9 correcting “zokuzonzakalisa” to “yokuzenzakalisa”. With regard to item 10 “Ukuthetha nabantu kuvakele kunzima kum” the class described

the initial Xhosa translation as a literal translation of the English idiom “has felt too much for me” and instead suggested the Xhosa phrase “Bekunzima ukuthetha nabantu” as a more conceptually equivalent translation choice for “feeling overwhelmed”. In item 11 “Uxinzelelo nonxunguphalo lundithintele ukwenza izinto ezibalulekileyo” the class recommended replacing “Uxinzelelo” with “Ukubamba umzimba” as a more linguistically equivalent Xhosa phrase for “anxious tension”.

The Xhosa III class considered the initial Xhosa translation choices made during the committee approach appropriate for items 12 “Bendonwabile zizinto endizenzileyo”, 13 “Bendiphazanyiswe ziingcinga neemvakalelo ezingafunekiyo” and 14 “Ndizive ndifuna ukukhala”. Although they did identify a grammatical error in item 12 and changed “Bendonwabile” to “Zindonwabisile”. The class approved of the initial Xhosa translation choice “Nceda uguqule iphepha” made during the committee approach for translation of the English phrase “Please turn the page.”

During the second meeting the Xhosa III class examined questionnaire items 15-34 on the second page of the initial CORE-OM Xhosa translation using the original CORE-OM English version for comparison. In item 15 “Ndive ukuphaphazela noloyiko” the class recommended replacing the Xhosa phrase “Ndive” with “Bendino” as a more grammatically appropriate choice for “I have felt”. While for item 16 “Ndiye ndacinga ukuzibulala” the class explained that the Xhosa word “ndacinga” had been used in the initial Xhosa translation for the English phrase “made plans” relating to “I have made plans to end my life”, however the class highlighted that “ndacinga” refers to “thoughts” of suicide and instead suggested the phrase “ndenza amalungiselelo” as a more linguistically equivalent translation choice for “actively making plans” to commit suicide.

With regards to item 17 “Ndizive ndigutyungelwe ziingxaki zam” the class recommended restructuring the English phrase from the passive (“I have felt overwhelmed by my problems”) into the active voice (“My problems have overwhelmed me”) to improve grammatical and syntactical equivalence, and also suggested replacing “ndigutyungelwe” with “zindongamele” as a more linguistically equivalent vocabulary choice for the feeling of being “overwhelmed”. In item 18 “Bendiphuthelwa” the class explained that the initial Xhosa translation choice

communicated the difficulty of staying sleep but did not include difficulty falling asleep. Both symptoms were indicated in the original English questionnaire item “I have had difficulty getting to sleep and staying asleep” and as a result the class suggested “okanye ubuthongo bungehli” be added to the Xhosa translation to communicate “difficulty getting to sleep”.

For item 19 “Ndive ubushushu nothando komnye umntu” the Xhosa phrase “ndinomdla” was suggested as a more linguistically equivalent translation choice for “emotional warmth” to replace “ubushushu”. With regard to item 20 “Kubenzima ukubeka iingxaki zam ndawonye” the class explained that the Xhosa phrase “ndawonye” which had originally been selected in the initial Xhosa translation as a linguistic equivalent for the English idiom “to put to one side” was far too literal and suggested the use of the phrase “ecaleni” as a more conceptually equivalent choice. The Xhosa III class considered the initial Xhosa translations made for items 21 “Ndikwazile ukuzenza izinto ezininzi ebendidinga ukuzenza”, and 22 “Ndigrogrise okanye ndoyikise omye umuntu” appropriate, although they did identify and correct a spelling error in item 22, changing “ndoyikise” to “ndoyikisa”. While for item 23 “Ndizive ndingento okanye ndiphelelwe lithemba” the class considered the use of both “ndingento” and “ndiphelelwe” unnecessary explaining that the Xhosa phrase “ndiphelelwa” referred with appropriate intensity to both feelings of “despair” and “hopelessness” and was sufficient for this item. In addition they highlighted that “ndingento” referred to a feeling of “uselessness” and was therefore not an appropriate linguistic choice in this context.

With regard to item 24 “Ndicinge ukuba bekunokubangcono ukuba bendinokubhubha” the initial Xhosa translation included the Xhosa phrase “bhubha”, however the class explained that “bhubha” was a euphemism that denoted a sense of respect for the dead which was inappropriate considering the context of the English questionnaire item “I have thought it would be better if I were dead”, and suggested the Xhosa word “fa” as a more literal and definitive term for “dead”. In item 25 “Ndizive ndigxekeiwe ngabanye” the class suggested changing the original English questionnaire item from the passive (“I have felt criticised by others”) to the active voice (“It has felt like others have criticised me”) to improve grammatical and syntactical equivalence in Xhosa.

The Xhosa III class considered items 26 “Ndicinge ukuba andinabahlobo” and 27 “Ndizive ndingonwabanga” appropriate translation choices. With regard to item 28 “Imifanekiso-ngqondweni, okanye iinkumbulo ezingafunekiyo zindinxunguphalisile” the class explained that the Xhosa phrase “ngqondweni” for “unwanted images” referred to images that were both imaginary and experienced. However the questionnaire item (“Unwanted images or memories have been distressing me”) assessed possible symptoms of post-traumatic-stress and within that context images were based in reality and reminders of actual experiences. Unfortunately the class were unable to find a linguistic equivalent that could communicate this conceptual meaning so instead explained the concept in the Xhosa sentence “engafunekiyo yezinto ezenzekayo”. In item 29 “Bendikwe xa ndikunye nabanye abantu” the class highlighted that while “nabanye” was an appropriate linguistic choice for denoting “irritation”, the phrase “ndikunye” did not add clarity to the translation and suggested removing it. While for item 30 “Ndicinge ukuba bendinokusolwa ngeengxaki neenzima zam” the class pointed out that the initial Xhosa translation communicated an experience of being blamed by others. However the original English questionnaire item communicated a sense of self blame in the item “I have thought I am to blame for my problems and difficulties”. As a result the class suggested a rephrasing of the Xhosa translation into “Ndicinge ukuba ndim omakazisole ngeengxaki neenzima zam” to communicate this sense of self blame.

With regard to items 31 “Ndizive ndilindele okuhle ngengomso lam” and 32 “Ndizifumene izinto ebindizifuna” the class considered the initial translations appropriate, although they did highlight one spelling error in item 32, correcting “ebindizifuna” to “ebendizifuna”. In item 33 “Ndaziva ndiyintlekise okanye ndinyunyezwa ngabanye abantu” the Xhosa III class suggested replacing “ndinyunyezwa” “ndinyeliswa” as a more linguistically equivalent choice for “being shamed by others” and highlighted the spelling error in “Ndaziva”, correcting it to “Ndizive”. While for item 34 “Ndizonzakalisile ngokwasemzimbeni okanye ndithathe imingcipheko enobungozi ngempilo yam” the class considered “ngokwasemzimbeni” an unnecessary qualifier to denote “physical harm” and suggested removing it from the questionnaire item.

In addition the class recommended replacing “ndithathe imingcipheko enobungozi” with “ndenze izinto ukubeka... emngiciphekweni” as a more linguistically equivalent choice for “taken dangerous risks with my health”. The class also highlighted that the last line of the questionnaire “Enkosi ngexesha lakho ekugcwaliseni oluthotho lwemibuzo” was a literal translation of the original English phrase “Thank you for your time in completing this questionnaire” and suggested restructuring the sentence to improve grammatical and syntactical equivalence by exchanging “Enkosi ngexesha lakho” for “Siyabulela” and replacing “ekugcwaliseni oluthotho lwemibuzo” with “ngokugcwalisa eli phetshana lemibuzo”.

All the recommended changes suggested by the Xhosa III class during the qualitative pilot were documented on the initial Xhosa translation, and are presented on the following pages. The questionnaire was then corrected and is presented as the first amended Xhosa version of the CORE-OM (Appendix N). This version was then qualitatively piloted and reviewed by the three bilingual, first language Xhosa speaking, second language English speaking psychologists.

# Initial CORE-OM isiXhosa Translation Corrections

PILOT STUDY: NOT FOR CLINICAL USE

## KUBALULEKILE- NCEDA FUNDA APHA KUQALA

Olu xwebhu #luneenenkcazelo ezingama-34 zokuba ubziva unjani na KULE VEKI IPHELILEYO. Nceda funda inkcazelo nganye uze ucinge ukuba uzive unjalo kangaphikanani -na kwiveki iphelileyo.

Phawulea ibhokisi ekufutshane na le ntonendlela ozive ngayo nge-

Sebenzisa ipeni emnyama (hayi i#dipensile) uze uphawule phakathi ngokucacileyo ebhokisini.

Kule veki iphelileyo		Khange konke konke	Ngamanye amaxesha kuphela Ngoko nangoko	Ngamaxesha athile	Rhoqo	Phantse ngamaxesha onke	Isetyenziswa e-ofisini	
1	Ndizive ndindedwa ndililelekheswa	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
2	Ndizive ndibambekile ngoko umzimba, ndinexhala okanye ndiphakuphaku	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
3	Ndizive ndinaye umntu onokundixhasa xa ndidinga inkxaso	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
4	Ndizive kakuhle ngesiqu sam	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	W
5	Ndizive ndiswele amandla neehulumancendingamandla wanto	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
6	Bendindlongo-ndlongo ndibetha kwabanye abantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
7	Ndizive ndikwazi ukumelana nezinto xa zingahambi kakuhle	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
8	Bendikhathazwa ziintlungu, iingqanqambo okanye ezinye iingxaki zomzimba	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
9	Bendinengcinga zyokuzeeenzakalisa	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
10	Bekunzima ukuthetha nabantu kuvakole-kunzima kum	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
11	Ukubamba umzimba unzelelo nonxunguphalo ikundithintele ukwenza izinto ezibalulekileyo	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
12	Bezindonwabisiile zizinto endizenzileyo	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
13	Bendiphazanyiswe ziingcinga neemvakalelo ezingafunekiyo	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
14	Ndizive ndifuna ukukhala	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	W

Nceda uguqule iphepha

## Kule veiki iphelileyo

		Khangela konke konke	Ngamanye amaxesha kephela Ngokokhangoko	Ngamaxesha athile	Rhoqo	Phantse ngamaxesha onke	Isetyenziswa e-ofisini	
15	Ndive ukuBendinophaphazela noloyiko	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
16	Ndiye ndenza amalungiselelo acinga ukuzibulala	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
17	Ndizive ndigutyungelwe ziingxaki zam zindongamele	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	W
18	Bendiphuthelwa okanye ubuthongo bungehli	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
19	Ndive ubushushu ndinomdla okanye nouthando lomnye umntu	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
20	KubenzimaBekungakwazeki ukubeka iingxaki zam ndawonyoealeni	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
21	Ndikwazile ukuzenza izinto ezininzi ebendinga ukuzenza	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
22	Ndigrogrise okanye ndoyikisea omnye umntu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
23	Ndizive ndingento okanye ndiphelelwe lithemba	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
24	Ndicinge ukuba bekunokuba ngcono ukuba bendinokubhubhafa	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
25	Ndizive ngathi abanye abantu bayandinxekawe ngabanye	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
26	Ndicinge ukuba andinabahlobo	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
27	Ndizive ndingonwabanga	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
28	Imifanekiso ngqondweni engafunekiyo yezinto ezenzekayo okanye iinkumbulo ezingafunekiyo zindinxunguphalisile	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
29	Bendikrugula we xa ndikunye nabanye abantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
30	Ndicinge ukuba bendinekusolwandim omakazisole ngeengxaki neenzima zam	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
31	Ndizive ndilindele okuhle ngengomso lam	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	W
32	Ndizifumene izinto ebiendizifuna	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
33	Ndizive ndiyintlekise okanye ndinyeliswa ngezwaya ngabanye abantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
34	Ndizeenzakalisile ngokwasemzimbeni okanye ndenze izinto ukubeka ndithathe imingcipheko enobungozi ngeempilo yam emngciphekweni	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R

**ENKOSI NGEXESHASIYABULELA LAKHO EKUNGOKUGCWALISA ENI ELI  
PHETSHANA OLUTHOTHO LWEMIBUZO**

## SUMMARY

During the qualitative review the Xhosa III class drew from their theoretical knowledge of the process of Xhosa translation to revert English questionnaire items from the passive into the active voice in order to assist with translation into Xhosa, and improve grammatical equivalence between the CORE-OM English and Xhosa versions. This strategy had been documented in international research on the topic of psychometric tool translation (Van de Vijver & Hambleton, 1996) as a pragmatic method for improving the quality of translations. In addition the Xhosa III class consulted both Xhosa-English dictionaries and corresponding English-Xhosa dictionaries to assist them in appropriate vocabulary choices during the qualitative evaluation of the Xhosa translations, which Steele and Edwards (2008a) also identified as a helpful strategy in the translation process.

Furthermore the Xhosa III class were able to draw from their linguistic skills to assist in identifying the numerous spelling and grammatical errors that were evident in the Xhosa translation produced during the committee meetings, which had gone undetected during review by the other translators. Finally the Xhosa III class were able to draw from their translation skills to assist in identifying inappropriate vocabulary choices and conceptual errors. Drawing from these examples it is evident that theoretical training in both the language and translation process proved highly advantageous during the adaptation of the CORE-OM into Xhosa.

The use of translators who were members of the target population (in this case students) assisted in guiding the selection of vocabulary and Xhosa phrases during the translation process. For example while reviewing the instructions section of the initial CORE-OM Xhosa translation the Xhosa III class recommended replacing the more traditional Xhosa word 'ilidi' (for pencil) with 'ipensile', a word considered to be a more popular and acceptable choice for the target population of students for which the translation was being prepared. In addition the use of students as members of the translating team assisted in evaluating the appropriateness of the CORE-OM questionnaire instructions and answer format within this target population. For example after completing the CORE-OM Xhosa questionnaire the Xhosa III class commented on the clarity of the instructions and likert scale format within the context

of other questionnaire formats they had been exposed to during their tertiary studies and were able to make pragmatic suggestions to improve readability and comprehension for this target population. One of these suggestions recommended the inclusion of a blank box with a tick inside it to assist in demonstrating the instruction "Then tick the box which is closest to this".

Another useful comment was made during discussion about the use of the final column in the CORE-OM questionnaire response lay-out. During the review the senior lecturer had noted that she found the final likert scale column ("Isetyenziswa e-ofisini") confusing and was unsure how to interpret the purpose of that column. However the Xhosa III students argued that they immediately recognised that the final column was explicitly for administrative use and that this was clearly communicated by the Xhosa phrase "Isetyenziswa e-ofisini". The students commented that other students, familiar with questionnaires would find this phrase easy to comprehend. It is evident from these examples that inclusion of members of the target population within the translation team proved valuable during vocabulary selection and clarification of readability and comprehension of the Xhosa translation of the CORE-OM.

From this discussion it is evident that in accounting for linguistic and cultural differences during the adaptation of the CORE-OM into Xhosa the use of multiple, bilingual translators comprising a broad skills set that included Xhosa linguistic and translation skills, as well as representation of the target population assisted considerably.

#### **b) Review by three bilingual Xhosa speaking psychologists**

The three bilingual psychologists who routinely practiced psychotherapy in Xhosa at the University of Fort Hare student counselling centre were presented with a theoretical overview of the CORE-OM, its development, psychometric properties and clinical utility. The psychologists then reviewed the original CORE-OM English version before being presented with the amended Xhosa translation. They were then asked to compare the two versions and highlight any problematic items. Ten suggested changes were discussed.

Within the instructions section the psychologists suggested replacing the Xhosa word “ipeni” for “usiba” as a less colloquial vocabulary choice for the English word “pen”. In item 6 “Bendindlongo-ndlongo ndibetha kwabanye abantu” the psychologists explained that the vocabulary choice “ndibetha” limited the interpretation of violence to physical punching and assault only, while physical violence could manifest in other, less aggressive forms. As a result they suggested removing the word “ndibetha” from the Xhosa phrase. While in item 10 “Bekunzima ukuthetha nabantu” the psychologists recommended a change in tense of the Xhosa translation from the past tense “Bekunzima” into the present tense “Kunzima” to align more accurately with the instructions requesting individuals to rate questionnaire items in terms of how they have been feeling “over the past week”.

With regard to item 15 “Bendinophaphazelo noloyiko” the psychologists disagreed with the vocabulary choice of “Bendinophaphazelo” for panic as it also referred to a degree of hysteria, and instead suggested the Xhosa phrase “Bendinogxunguphalo”. In item 18 “Bendiphuthelwa ubuthongo bungehli” the psychologists explained that the Xhosa translation described staying asleep first and then getting to sleep, however they suggested reordering the sentence to describe difficulties getting to sleep first and then difficulties staying asleep as this sequence made more conceptual sense and is phrased in this order within the original CORE-OM English version. While in item 19 “Ndive ndinomdla okanye uthando komnye umntu” the psychologists suggested the use of the Xhosa phrase “ubushushu” for “emotional warmth” as opposed to “ndinomdla” which they associated more with excitement.

In item 23 “Ndizive ndiphelelwe lithemba” the psychologists explained that there was a conceptual difference between the experiences of “despair” and “hopelessness” and that the Xhosa phrases “ndinikezele” and “ndiphelelwe” communicated this difference. As a result they suggested adding “ndinikezele” to the Xhosa translation. While in item 24 “Ndicinge ukuba bekunokuba ngcono ukuba bendinokufa” they recommended changing the tense of the Xhosa translation from the future tense “bendinokufa” into the present tense “bendifile”.

In item 29 “Bendikruqula xa ndinabanye abantu” the psychologists identified a spelling error and corrected “Bendikruqula” to “Bendikruquka”. While in item 33

“Ndizive ndiyintlekise okanye ndinyeliswa ngabanye abantu” the psychologists suggested the use of the Xhosa phrases “ndiphoxiwe” and “hlaziwe” to replace “ndiyintlekise” and “ndinyeliswa” as more linguistically equivalent vocabulary choices for the concepts of “being humiliated” and “being shamed”.

The psychologists also noted that due to the limited Xhosa vocabulary available for commonly used English psychological language any Xhosa translation would likely result in a more general depiction of psychological symptoms, problems or experiences in comparison to the English version, and this would need to be taken into consideration during interpretation of the scores obtained on Xhosa adaptations of psychometric tools.

All the recommended changes suggested by the three bilingual psychologists during the qualitative pilot were documented on the ammended Xhosa translation, and are presented on the following pages. The questionnaire was then corrected (Appendix P) and presented to Professor Chris Evans from CORE IMS and a team of bilingual professionals for final review and quality assurance purposes.

# First Amended CORE-OM isiXhosa Translation Corrections

PILOT STUDY: NOT FOR CLINICAL USE

## KUBALULEKILE- NCEDA FUNDA APHA KUQALA

Olu xwebhu luneenkcazelo ezingama-34 zokuba ubuziva njani na KULE VEKI IPHELILEYO. Nceda funda inkcazelo nganye uze ucinge ukuba uzive njalo kangakanani na kwiveki ephelileyo.

Phawula ibhokisi ekufutshane nendlela ozive ngayo nge-

Sebenzisa ipeni emnyama usiba olumnyama (hayi ipensile) uze uphawule ngokucacileyo ebhokisini.

### Kule veki iphelileyo

		Khange konke konke	Ngoko nangoko	Ngamaxesha athile	Rhoqo	Phantse ngamaxesha onke	Isetyenziswa e-offisini	
1	Ndizive ndindedwa ndilikheswa	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
2	Bendibambe umzimba, ndinexhala okanye ndiphaku-phaku	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
3	Ndizive ndinaye umntu onokundixhasa xa ndidinga inkxaso	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
4	Ndizive kakuhle ngesiqu sam	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	W
5	Ndizive ndiswele amandla, ndingenamdlawanto	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
6	Bendindlongo-ndlongo ndibetha kwabanye abantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
7	Ndizive ndikwazi ukumelana nezinto xa zingahambi kakuhle	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
8	Bendikhathazwa ziintlungu, iingqaqambo okanye ezinye iingxaki zomzimba	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
9	Bendinengcinga yokuzenzakalisa	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
10	BekKunzima ukuthetha nabantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
11	Ukubamba umzimba nonxunguphalo kundithintele ukwenza izinto ezibalulekileyo	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
12	Zindonwabisile izinto endizenzileyo	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
13	Bendiphazanyiswe ziingcinga neemvakalelo ezingafunekiyo	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
14	Ndizive ndifuna ukukhala	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	W

Nceda uguqule iphepha

## Kule veki iphelileyo

		Khange konke konke	Ngoko nangoko	Ngamaxeshabathile	Rhoqo	Phantse ngamaxeshabonke	Isetyenziswa e-ofisini	
15	Bendinophaphazelenqungupholo noloyiko	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
16	Ndiye ndenza amalungiselelo okuzibulala	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
17	Ndive iingxaki zam zindongamele	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	W
18	Bendiphuthelwa okanye uUbuthongo bebungehli okanye ndiphuthelwa	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
19	Ndive ubushushu ndinamela okanye uthando komnye umntu	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
20	Bekungakwazeki ukubeka iingxaki zam ecaleni	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
21	Ndikwazile ukuzenza izinto ezininzi ebendinga ukuzenza	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
22	Ndigrorise okanye ndoyikisa omnye umntu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
23	Ndizive ndinikezele okanye ndiphelelwe lithemba	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
24	Ndicinge ukuba bekunokuba ngcono ukuba bendinekufile	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
25	Ndive ngathi abanye abantu bayandigxeka	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
26	Ndicinge ukuba andinabahlobo	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
27	Ndizive ndingonwabanga	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
28	Imifanekiso engafunekiyo yezinto ezenzekayo, okanye iinkumbulo ezingafunekiyo zindinxuphalisile	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
29	Bendikruquleka xa ndinabanye abantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
30	Ndicinge ukuba ndim omakaziso ngeengxaki neenzima zam	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
31	Ndizive ndilindele okuhle ngengomso lam	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	W
32	Ndizifumene izinto ebendizifuna	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
33	Ndizive ndiyintlekisenidiphoxiwe okanye ndinyhlaziwe ngabanye abantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
34	Ndizenzakalisile okanye ndenze izinto ukubeka impilo yam emngciphekweni	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R

SIYABULELA NGOKUGCWALISA ELI PHETSHANA LEMIBUZO

## **SUMMARY**

Feedback from the three bilingual psychologists proved considerably valuable in that these professionals were able to draw from Xhosa vocabulary that they typically used during therapeutic interventions to assist them in suggesting appropriate vocabulary choices for particular questionnaire items. For example in item 15 (“I have felt panic or terror”) the psychologists disagreed with the vocabulary choice of “Bendinophaphazelo” for panic as it also referred to a degree of hysteria and instead suggested the Xhosa phrase “Bendinongxunguphalo” which they more commonly used to denote the experience of panic during psychotherapy interventions with clients. While in item 19 (“I have felt warmth or affection for someone”) they suggested the use of the Xhosa phrase “ubushushu” for warmth as opposed to “ndinomdla” which in their views referred more to excitement.

### **c) Review by a team of bilingual professionals**

The final qualitative review took place over a 4 hour period via Skype and included Professor Evans, one of the CORE-OM developers, a bilingual psychiatric nurse from the UK, and a counselling psychologist and Xhosa teacher from Grahamstown, South Africa. Each of the reviewers received a copy of both the original CORE-OM English version and the CORE-OM Xhosa version a week before the meeting to individually review the Xhosa translation and note potential changes. The translators spent the first two hours of the meeting reviewing the instructions, likert scale descriptions and individual CORE-OM questionnaires as a group, communicating in Xhosa. When necessary the group reverted to English in order to ask for clarification from Professor Evans about the conceptual meaning of an English word or phrase. During the remaining two hours the group reverted to English and presented their feedback to Professor Evans.

Within the first sentence of the instructions section, the reviewers suggested replacing the Xhosa phrase “Olu xwebhu” with “le fomu” which they considered to be a more appropriate vocabulary choice for “questionnaire” and held wider transportability across Xhosa dialects. They also identified and corrected a spelling error in “luneenkcazelo” and corrected it to “inenkcazelo”. In addition Professor Evans

recommended the removal of the final instruction sentence relating to the use of a black pen when completing the CORE-OM. He explained that this instruction was included initially during the original development of the CORE-OM to assist in computerised scoring, however had subsequently been removed from the instructions, particularly during language adaptations of the CORE-OM as it was deemed unnecessary. Next the reviewers suggested changes to three of the likert scale descriptions to assist in clarifying the frequency denoted in these descriptions. The Xhosa phrase “Kancinci” was suggested as a more linguistically appropriate choice for “Only occasionally”, instead of “Ngoko nangoko”. While “Kakhulu” was suggested for “Often” instead of “Rhoqo”, and “Rhoqo” was added to the final likert scale description of “Phantse ngamaxesha onke” to emphasize “Most or all of the time”.

Within the individual CORE-OM questionnaire items, nine additional vocabulary changes were suggested. In item 1 “Ndizive ndindedwa ndilikheswa” the reviewers identified the word “ndilikheswa” as a traditional Xhosa expression for being isolated and instead suggested the word “ndililolo”, as a more accessible vocabulary choice across dialects. While in item 5 “Ndizive ndiswele amandla, ndingenamdla wanto” the reviewers suggested the Xhosa word “ndiswele” meaning “I am in need of energy” be replaced with “ndithyafile” meaning “I am tired”. In item 10 “Kunzima ukuthetha nabantu” the reviewers recommended “Bendizitsala” as a more conceptually equivalent choice for the English idiom “talking to people has been too much for me” in place of “Kunzima”. In item 18 “Ubuthongo bebungehli okanye ndiphuthelwa” the reviewers suggested the Xhosa phrase “Andilali kakuhle” as a more linguistically equivalent choice for “difficulty getting to sleep” than “Ubuthongo bebungehli” meaning “difficulty sleeping” and recommended the inclusion of “ya” to ndiphuthelwa” to improve grammatical and syntactical equivalence. While in item 28 “Imifanekiso engafunekiyo yezinto ezenzekayo, okanye iinkumbulo ezingafunekiyo zindixunguphalisile” the Xhosa word “bezindihlupha” was suggested as a more linguistically equivalent choice for “distressing” across Xhosa dialects instead of “zindixunguphalisile”.

In item 30 “Ndicinge ukuba ndim omakazisole ngeengxaki neenzima zam” the reviewers recommended the Xhosa phrase “ndizenzile ngeemeko” as a more

linguistically equivalent choice for “I am to blame” as opposed to “ndim omakaziso” which the reviewers explained could be interpreted as “feeling victimised or cursed”. While in item 31 “Ndizive ndilindele okuhle ngengomso lam” the reviewers suggested replacing the Xhosa phrase “ndilindele” meaning “I am waiting” with “ndinethemba” meaning “I am hopeful” as a more linguistically equivalent choice for “optimistic”. In item 32 “ndizifumene izinto ebendizifuna” the reviewers explained that “Ndizifumene” referred to “receiving”, while they suggested the phrase “imizamo yam” instead as a more linguistically equivalent phrase for “achieving”. In addition the translators recommended replacing the Xhosa phrase “ebendizifuna” with “iphumelele” for “things I wanted”. With regard to item 33 “Ndizive ndiphoxiwe okanye hlaziwe abantu” the Xhosa phrase “ndiyintlekisa” was recommended in place of “hlaziwe” for “humiliation” and “kwabanye abantu” was added to the sentence to emphasise that the humiliation and shame was inflicted “by other people”.

All the recommended changes suggested by the quality assurance review panel were documented on the second amended Xhosa translation, and are presented on the following pages. These changes were considered fairly superficial and all translators approved the overall quality of the Xhosa translation of the CORE-OM questionnaire. As a result after the identified corrections were made the CORE-OM Xhosa version was approved for publication by Professor Evans from CORE-IMS.

# Second Amended CORE-OM isiXhosa Translation Corrections

PILOT STUDY: NOT FOR CLINICAL USE

## KUBALULEKILE- NCEDA FUNDA APHA KUQALA

Olu xwebhu Le fomu iluncenzakazelo ezingama-34 zokuba ubuziva njani na KULE VEKI IPHELILEYO.

Nceda funda inkcazelo nganye uze ucinge ukuba uzive njalo kangakanani na kwiveki ephelileyo.

Phawula ibhokisi ekufutshane nendlela ozive ngayo nge-

~~Sebenzisa usiba olumnyama (hayi ipensile) uze uphawule ngokucacileyo ebhokisini.~~

### Kule veki iphelileyo

		Khange konke konke	Ngeke nangeke kancinci	Ngamaxesha athile	Rheqe kakhulu	Phanise ngamaxesha onke/Rhoqo	Isetyenziswa e-ofisini	
1	Ndizive ndindedwa <del>ndikheswandililolo</del>	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
2	Bendibambe umzimba, ndinexhala okanye ndiphaku-phaku	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
3	Ndizive ndinaye umntu onokundixhasa xa ndidinga inkxaso	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
4	Ndizive kakuhle ngesiqu sam	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	W
5	Ndizive <del>ndiswele-ndithyafile</del> ndingenamandla akwenza nto amandla, <del>ndingenamandla wante</del>	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
6	Bendindlongo-ndlongo kwabanye abantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
7	Ndizive ndikwazi ukumelana nezinto xa zingahambi kakuhle	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
8	Bendikhathazwa ziintlungu, iingqaqambo okanye ezinye iingxaki zomzimba	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
9	Bendinengcinga yokuzenzakalisa	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
10	<del>Kunzima</del> -Bendizitsala ukuthetha nabantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
11	Ukubamba umzimba nonxunguphalo kundithintele ukwenza izinto ezibalulekileyo	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
12	Zindonwabisile izinto endizenzileyo	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
13	Bendiphazanyiswe ziingcinga neemvakalelo ezingafunekiyo	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
14	Ndizive ndifuna ukukhala	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	W

**Nceda uguqule iphepha**

## Kule veki iphelileyo

		Khange konke konke	Ngeke nangeke kancinci	Ngamaxeshabihle	Rhepe kakhulu	Phanise ngamaxeshabonke/Rhogo	Isetyenziswa e-offisini	
15	Bendinongxunguphalo noloyiko	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
16	Ndiye ndenza amalungiselelo okuzibulala	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
17	Ndive iingxaki zam zindongamele	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	W
18	Ubuthongo bebungeni Andilali kakuhle okanye ndiyaphuthelwa	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
19	Ndive ubushushu okanye uthando komnye umntu	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
20	Bekungakwazeki ukubeka iingxaki zam ecaleni	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
21	Ndikwazile ukuzenza izinto ezininzi ebendinga ukuzenza	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
22	Ndigrogrise okanye ndoyikisa omnye umntu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
23	Ndizive ndinikezele okanye ndiphelelwe lithemba	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
24	Ndicinge ukuba bekunokuba ngcono ukuba bendifile	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
25	Ndive ngathi abanye abantu bayandigxeka	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
26	Ndicinge ukuba andinabahlobo	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
27	Ndizive ndingonwabanga	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
28	Imifanekiso engafunekiyo yezinto ezenzekayo, okanye iinkumbulo ezingafunekiyo zindinxunguphalisilebezindihlupha	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
29	Bendikruquka xa ndinabanye abantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
30	Ndicinge ukuba ndim emakazisole ndizenzile ngeemeko neengxaki zenzima zam	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
31	Ndizive ndiindlele ndinethemba okuhle ngengomso lam	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	W
32	Ndizifumene izinto ebendizifuna Imizamo yam iphumelele	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
33	Ndizive ndiphoxiwe okanye hlaziwe ndiyintiekisa ndiphoxekile kwabanye abantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
34	Ndizenzakalisile okanye ndenze izinto ukubeka impilo yam emngciphekweni	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R

**SIYABULELA NGOKUGCWALISA ELI PHETSHANA LEMIBUZO**

The bilingual counselling psychologist and Xhosa language teacher were asked to provide appropriate Xhosa terminology for the identifying data or demographic information needed by therapists and individuals when completing the CORE-OM Xhosa version, and to generate appropriate scoring instructions in Xhosa. These demographic prompts and scoring instructions are presented in table 7.3.1 below.

Table 7.3.1 Translataion of the demographic prompts and scoring instructions

CORE-OM Original English Version	Xhosa translation
Site ID	Yazisa indawo yakho (indawo ahlala kuyo)
Therapist ID	iID yeTherapist
Client ID	Umazisi wakho (client/isiguli/patient)
Date form completed	Umhla: (day) Inyanga (month) Unyaka (year)
Age	Ubudala
Male	Idoda
Female	Umfazi
Date form completed	Usuku okwagqitya ngalo Le fomu
Stage Completed	Bhala ixesha ogqibe ngalo
Screening	Ekuqaleni
Referral	Ekuyibhekiseni komnye umntu
Assessment	Xilonga
First therapy session	Indibano yokuqala yetherapy
Pre-therapy (unspecified)	Itherapy yangaphambili ayixelwanga.
During Therapy	Kwinqubo yetherapy
Last therapy session	Kwinqubo yetherapy yokugqibela
Follow up 1	Elandelayo yokuqala

Follow up 2	Elandelayo yesibini
Stage	Inqanaba
Episode	I-episodi
Total Score	Amanqaku ewonke
Mean Score	i'mean score
Total score for each dimension divided by number of items completed in that dimension.	Amanqaku ewonke kuluhlu ngalunye ahlulahlulwe ngenani lamanqaku apheleleyo kwelo luhlu.
Session number (first therapy session = 001)	Inqkubo yetherapy (yokuqala ilingana no 001)
Total (Clinical Score*)	Amanqaku apheleleyo eclinical
Session number ___ of ___ planned	Amanani enqkubo ___ azilungiselelweyo ____
Procedure : Add together the item scores, then divide by the number of questions completed to get the mean score, then multiply by 10 to get the Clinical Score. If fewer than nine items completed, score should only be used very cautiously.	Indlela yokwenza/procedure. Dibanisa amanqaku (uze wahlule) ubese uhlulahlula ngenani lemibuzo egqityiwewo ukuze kufunyanwe i'mean score, bese u phindaphinda kalishumi ukuze ufumane inqaku le clinical. Ukuba amanqaku angaphantsi kwethoba agqityiweyo , kufuneka ujongisise kakuhle phambikoba uwasebenzise.
Quick method (if all items completed): add together the item scores to get the Clinical Score.	Indlela elula yokwenza (xawonke amanqaku egqityiwe): dibanisa amanqaku ukuze ufumane iqaku le clinical
Procedure: Do not score if any items are omitted or marked twice. Clinical score is 2x total score.	Indlela yokwenza: ungayibali xa kukhona amanqaku ashiyekileyo. Inqaku le clinical lingamanqaku sewonke ephindwe kabini
Do not score if more than one item omitted.	Ungayibali xa kukhona inqaku elinye okanye amabini ashiyekileyo.
Total - all items:	Amanqaku ewonke
Total non-risk items:	Amanqaku ewonke enciphiswe ngoR

These Xhosa phrases were then inserted into the CORE-OM Xhosa version. The questionnaire was then reviewed by an independent, first language Xhosa speaking psychologist for comprehension and spelling errors. Six spelling errors were identified and corrected. These changes are presented in table 7.3.2 below.

Table 7.3.2 Spelling errors identified in the final CORE-OM Xhosa version

CORE-OM Xhosa version	Correction
Idoda	Indoda
Kwinqubo yetherapy	Kwinkqubo yetherapy
Kwinqkubo yetherapy yokugqibela	kwinkqubo yetherapy yokugqibela
Ndizive ndithyafile ndingenamandla akwenza nto	Ndizive ndityhafile ndingenamandla akwenza nto
Bendinongxunguphalo noloyiko	Bendinonxunguphalo noloyiko
Amanqaku ewonke kuluhlu ngalunye ahlulahlulwe ngenani lamanqaku	Amanqaku ewonke kuluhlu ngalunye ahlulahlulwe ngenani lamanqaku

The spelling corrections were made and the finalised CORE-OM Xhosa version was converted into a template by Professor Evans. CORE-IMS then gave permission for the CORE-OM Xhosa version to be piloted on a Xhosa speaking population sample. The CORE-OM Xhosa version questionnaire is presented on the following pages.



## Kule veki iphelileyo

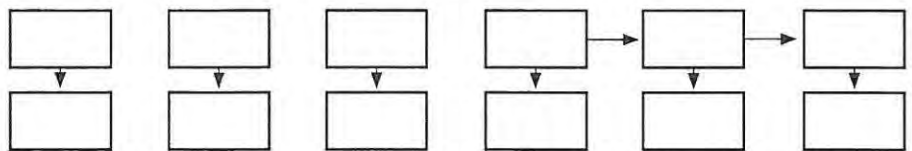
	Khange konke konke	Kancinci	Ngamaxesha athile	Kakhulu	Phantse ngamaxesha onke/Rhoqo	ISETYENISWA EPHENI
15 Bendinonxunguphalo noloyiko	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> P
16 Ndiye ndenza amalungiselelo okuzibulala	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> R
17 Ndive iingxaki zam zindongamele	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> W
18 Andilali kakuhle okanye ndiyaphuthelwa	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> P
19 Ndive ubushushu okanye uthando komnye umntu	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/> F
20 Bekungakwazeki ukubeka iingxaki zam ecaleni	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> P
21 Ndikwazile ukuzenza izinto ezininzi ebendinga ukuzenza	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/> F
22 Ndigrogrise okanye ndoyikisa omnye umntu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> R
23 Ndizive ndinikezele okanye ndiphelelwe lithemba	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> P
24 Ndingce ukuba bekunokuba ngcono ukuba bendifile	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> R
25 Ndive ngathi abanye abantu bayandigxeka	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> F
26 Ndingce ukuba andinabahlobo	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> F
27 Ndizive ndingonwabanga	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> P
28 Imifanekiso engafunekiyo yezinto ezenzekayo, okanye iinkumbulo ezingafunekiyo bezindihlupha	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> P
29 Bendikruquka xa ndinabanye abantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> F
30 Ndingce ukuba ndizenzile ngeemeko neengxaki zenzima zam	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> P
31 Ndizive ndinethemba ngengomso lam	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/> W
32 Imizamo yam iphumelele	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/> F
33 Ndizive ndiyintlekisa ndiphoxekile kwabanye abantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> F
34 Ndizenzakalisile okanye ndenze izinto ukubeka impilo yam emngciphekweni	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> R

### SIYABULELA NGOKUGCWALISA ELI PHETSHANA LEMIBUZO

Amanqaku ewonke

i'mean score

(Amanqaku ewonke kuluhlu ngalunye ahluha-hluwe ngenani lamanqaku apheleleyo kwelo luhlu)



(1)

(2)

(3)

(4)

Kuluhlu lwama-6

(60/6) = 10

ewonke elidibane ngoR

## CONCLUSION

Following an investigation of the construct equivalence and bias of the original CORE-OM English version and demonstrating considerable overlap with regard to the construct of gross psychological distress as measured by the CORE-OM within the UK and South African student population samples, the CORE-OM English version was translated into Xhosa. This translation took the form of a five step translation design in accordance with CORE System Trust translating and normalising guidelines, supplemented by ITC guidelines.

Within this design the CORE-OM was first forward-translated into Xhosa by three bilingual first language Xhosa speaking translators representing fields of mental health and Xhosa linguistics, as well as the target population. These forward translations were then back-translated into English by three additional bilingual translators representing fields of mental health and Xhosa linguistics, as well as the target population. These forward and back translations were then summarised into a table that was used during the committee approach to develop an initial Xhosa translation of the CORE-OM. As was highlighted by Brislin (1970) and Hambleton (2005) the advantage of a back-translation process is that it promotes linguistic equivalence between the original psychometric tool and the translation based on similarities evident between the original and back-translated versions. This is evident in table 7.1.1. Evaluation of CORE-OM questionnaire items within this table indicated appropriate translation choices and highlighted translation errors and poor vocabulary choices. As a result the back-translation method proved particularly beneficial for the researcher because the back-translations allowed her a degree of insight into the quality of the forward-translations being produced by the translators and their degree of linguistic equivalence with the original CORE-OM English version, as was highlighted by Hambleton (2005).

In addition the use of two teams of translators, one for the forward-translation and one for the back-translation process, and the presentation of the resultant translations anonymously in the form of table 7.1.1 provided a degree of objectivity in evaluating the quality of the forward translations produced. However while the back-translation method evaluated linguistic equivalence, it did not provide comparisons of

idiomatic, grammatical and syntactical, experiential and conceptual equivalence (Hambleton, 2005), and as a result a committee approach was used in combination with the forward- and back-translation process to assist in achieving idiomatic, grammatical and syntactical, experiential and conceptual equivalence between the original CORE-OM English version and the Xhosa translation.

The advantage of a committee approach is that individual translators are selected based on their linguistic or psychological expertise, or knowledge of the target culture and language, and working together allows for the collaboration of these various areas of expertise within the translation choices that result in the final product (Van de Vijver, 2001). However logistical challenges resulted in only two or three translators attending each committee meeting, reducing the degree of collaboration across areas of expertise. In addition the small number of translators in each committee meeting impacted negatively on the degree of discussion and debate that ensued which was likely responsible for the numerous spelling, grammatical, vocabulary and conceptual errors that were identified during the qualitative reviews.

Following the committee approach the initial Xhosa translation was qualitatively reviewed by the Rhodes University Xhosa III class, a group of three bilingual psychologists, and a group of bilingual professionals. Hambleton and Patsula (2000) emphasize that following the production of a translation, that version must be piloted qualitatively in order to evaluate the readability and comprehension of the version. This suggestion is also recommended by Evans (2008) and Steele and Edwards (2008a), and proved to be of considerable value during the translation of the CORE-OM into Xhosa.

The process of qualitatively reviewing the initial CORE-OM Xhosa version on a group of individuals with Xhosa linguistic and translation skills allowed for the detection of numerous spelling, grammar, vocabulary and conceptual errors within the translation. Because the Xhosa III class possessed the necessary skills to address these errors, problematic phrases in the CORE-OM Xhosa translation were corrected and equivalence between the original CORE-OM English version and the Xhosa translation was considerably improved. In addition having the initial Xhosa

translation qualitatively reviewed by individuals who represented the target population assisted in investigating the appropriateness of the translation for that population group. The qualitative review conducted by the three bilingual psychologists provided an additional level of qualitative feedback drawing from contextual knowledge of Xhosa vocabulary and phrases commonly used within psychotherapy contexts. The final review provided a further layer of evaluation to ensure that the translation was of a suitable standard, in accordance with CORE System Trust requirements. The numerous changes made to the Xhosa translation during each of these qualitative reviews illustrates the lack of standardisation of the language and the considerable potential for continued alteration of content as a result.

A combination of forward- and back-translation, the committee approach and qualitative reviews improved the linguistic, grammatical and syntactical, experiential and conceptual equivalence of the CORE-OM Xhosa version. All translators were bilingual, first language Xhosa speakers and second language English speakers. English language proficiency was suitable enough to allow them to complete tertiary education at an English medium institute. The bilingual skills of these translators proved highly valuable in enhancing the linguistic and conceptual equivalence of the CORE-OM Xhosa version, particularly considering the researcher's limited ability to speak or read the Xhosa language.

Because the CORE-OM Xhosa adaptation was targeted at a South African first language Xhosa speaking university student population sample, a degree of familiarity with the questionnaire format and likert scale response format was assumed, and confirmed from feedback received during the qualitative reviews. However this feedback also provided valuable suggestions in further reducing method bias within the questionnaire, highlighting the value of inclusion of members of the target population within the translation team. While previous South African research involving the Xhosa translation of psychometric tools published in English indicates that appropriate vocabulary selection has been further complicated by the reported difficulty in finding linguistically equivalent Xhosa vocabulary for English psychological terminology, particularly emotional or affective vocabulary; in addition to the considerable differences between the spoken and written versions of the

Xhosa language and apparent differences between the formal Xhosa dialects found within traditional and rural contexts in comparison to the colloquial dialects found in modern and urban contexts (Drennan et al., 2002; Smit et al., 2006; Steele & Edwards, 2008a) making the development of a widely applicable translation difficult to achieve. Similar findings were apparent during the translation design implemented in adapting the CORE-OM into Xhosa.

From this discussion it is evident that method and item bias were issues of concern during the adaptation of the CORE-OM into Xhosa, however the use of qualitative reviews assisted in addressing potential issues of method bias, and the multiple stages within the translation design allowed for the continued evaluation of linguistic and construct equivalence within each questionnaire item, addressing potential issues of item bias. Necessary changes were made to the initial Xhosa translation following these reviews and a final CORE-OM Xhosa version was approved for piloting by the CORE-OM developer. A summary of the changes made at each translation stage is presented in table 7.3.3.

Table 7.3.3 Summary of all changes made during the translation process

CORE-OM Original English Version	Committee Approach 1	Committee Approach 2	Committee Approach 3	Qualitative Pilot 1 Xhosa Ill class	Qualitative Pilot 2 Psychologists	Quality Assurance Review
<p>IMPORTANT PLEASE READ THIS FIRST. This form has 34 statements about how you have been OVER THE LAST WEEK.</p> <p>Please read each statement and think how often you felt that way last week.</p> <p>Then tick the box which is closest to this.</p>	<p>KUBALULEKILE-NCEDA FUNDA APHA KUQALA. Oluxwebhu linenkcazelo ezingama-34 zokuba ubunjani na KULE VEKI IPHELILEYO.</p> <p>Nceda funda inkcazelo nganye uze ucinge ukuba uzive unjalo kangaphi na kwiveki iphelileyo.</p> <p>Phawule ibhokisi ekufutshane na le nto.</p>			<p>Olu xwebhu luneenkcazelo ezingama-34 zokuba ubziva njani na KULE VEKI IPHELILEYO. Nceda funda inkcazelo nganye uze ucinge ukuba uzive njalo kangakanani na kwiveki ephelileyo.</p> <p>Phawula ibhokisi ekufutshane nendlela ozive ngayo nge-.</p>		<p>Le fomu inenkcazelo ezingama-34 zokuba ubuziva njani na KULE VEKI IPHELILEYO</p>

Please use a dark pen (not pencil) and tick clearly within the boxes.

Sebenzisa ipeni emnyama (hayi ilidi) uze uphawule phakathi ebhokisini.

Sebenzisa ipeni emnyama (hayi ipensile) uze uphawule ngokucacileyo ebhokisini.

Sebenzisa usiba olumnyama (hayi ipensile) uze uphawule ngokucacileyo ebhokisini.

	Over the last week	Not at all	Only occasionally	Sometimes	Often	Most or all the time	Office use only				
	Kule veki iphelileyo	Khange konke konke	Ngamanye amaxesha kuphela	Ngamaxesha athile	Rhoqo	Phantse ngamaxesha onke	Isetyenziswa e-ofisini				
									<b>Ngoko nangoko</b>		<b>Kancinci</b>
											<b>Kakhulu</b> Phantse ngamaxesha onke/Rhoqo
1	I have felt terribly alone and isolated	Ndizive ndindedwa ndililolo							Ndizive ndindedwa ndilikheswa		Ndizive ndindedwa ndililolo
2	I have felt tense, anxious or nervous	Ndizive ndibambekile ngokomzimba, ndinexhala, ndiphakuphaku	Ndizive ndibambekile ngokomzimba, ndinexhala okanye ndiphakuphaku						<b>Bendiibambe umzimba, ndinexhala okanye ndiphakuphaku</b>		
3	I have felt I have someone to turn to for support when needed	Ndizive ndinaye umntu onokundixhasa xa ndidinga inkxaso									
4	I have felt OK about myself	Ndizive kakuhle ngesiqu sam									
5	I have felt totally lacking in energy and enthusiasm	Ndizive ndiswelamandla nenzondelelo						Ndizive ndiswelamandla nochulumanco	Ndizive ndiswele amandla ndingenamdlawanto		Ndizive ndithyafile ndingenamandla akwenza nto
6	I have been physically violent to others	Bendindlongondlo no kwabanye abantu						<b>Bendibetha kwabanye abantu</b>	<b>Bendindlongondlongo ndibetha kwabanye abantu</b>		<b>Bendindlongondlongo kwabanye abantu</b>
7	I have felt able to cope when things go wrong	Ndizive ndikwazi ukumelana nezinto xa zingahambi kakuhle									
8	I have been troubled by aches, pains or other physical problems	Bendikhathazwa ziintlungu, iingqanqambo zomzimba	Bendikhathazwa ziintlungu, iingqanqambo okanye ezinye ingxaki zomzimba						<b>Bendikhathazwa ziintlungu, iingqanqambo okanye ezinye lingxaki zomzimba</b>		
9	I have thought of hurting myself	Bendinengcinga zokuzonzakalisa.							<b>Bendinengcinga yokuzenzakalisa</b>		

10	Talking to people has felt too much for me	Ukuthetha nabantu kuvakele kunzima kum			<b>Bekunzima</b> ukuthetha nabantu	<b>Kunzima</b> ukuthetha nabantu	<b>Bendizitsala</b> ukuthetha nabantu
11	Tension and anxiety have prevented me doing important things	Uxinzelelo nonxunguphalo lundithintele ukwenza izinto ezibalulekileyo			<b>Ukubamba umzimba</b> nonxunguphalo <b>kundithintele</b> ukwenza izinto ezibalulekileyo		
12	I have been happy with the things I have done	Bendonwabile zizinto endizenzileyo			<b>Zindonwabisile</b> zizinto endizenzileyo		
13	I have been disturbed by unwanted thoughts and feelings	Bendineengcinga neemvakalelo ezingafunekiyo	<b>Bendiphazanyiswe</b> ziingcinga neemvakalelo ezingafunekiyo				
14	I have felt like crying	Ndizive ndifuna ukukhala					
15	I have felt panic or terror	Ndive ukuphaphazela noloyiko			<b>Bendinophaphazela</b> noloyiko	<b>Bendinongxungupholo</b> noloyiko	
16	I have made plans to end my life	Ndiye ndaceba ukuzibulala.	Ndiye <b>ndacinga</b> ukuzibulala.		Ndiye <b>ndenza amalungiselelo</b> okuzibulala		
17	I have felt overwhelmed by my problems	Ndizive ndigutyungelwe ziingxaki zam			<b>Ndive iingxaki zam zindongamele</b>		
18	I have had difficulty getting to sleep or staying asleep		Bendiphuthelwa		Bendiphuthelwa <b>okanye ubuthongo bungehli</b>	<b>Ubuthongo bebungehli okanye ndiphuthelwa</b>	<b>Andilali kakuhle okanye ndiyaphuthelwa</b>
19	I have felt warmth or affection for someone		Ndive ubushushu nothando komnye umntu		Ndive <b>ndinomdla okanye uthando komnye umntu</b>	Ndive <b>ubushushu okanye uthando komnye umntu</b>	
20	My problems have been impossible to put to one side		Kubenzima ukubeka iingxaki zam ecaleni elinye	Kubenzima ukubeka iingxaki zam <b>ndawonye</b>	<b>Bekungakwazeki</b> ukubeka iingxaki zam ecaleni		
21	I have been able to do most things I needed to		Ndikwazile ukuzenza izinto ezininzi ebendinga ukuzenza				
22	I have threatened or intimidated another person		Ndigrogrise okanye ndoyikise omnye umntu		Ndigrogrise okanye <b>ndoyikisa omnye umntu</b>		
23	I have felt despairing or hopeless		Ndizive ndingento okanye ndiphelelwe lithemba		<b>Ndizive ndiphelelwe</b> lithemba	Ndizive <b>ndinikezele okanye ndiphelelwe</b> lithemba	
24	I have thought it would be better if I were dead		Ndicinge ukuba bekunokubangco no ukuba bendinokubhubha		Ndicinge ukuba bekunokuba ngcono ukuba <b>bendinokufa</b>	Ndicinge ukuba bekunokuba ngcono ukuba <b>bendifile</b>	

25	I have felt criticised by another person	Ndizive ndigxekiwe ngabanye		<b>Ndive ngathi abanye abantu bayandigxeka</b>		
26	I have thought I have no friends	Ndicinge ukuba andinabahlobo				
27	I have felt unhappy	Ndizive ndingonwabanga				
28	Unwanted images or memories have been distressing me	Imifanekiso-ngqondweni okanye iinkumbulo ezingafunekiyo zindinxunguphalis ile		Imifanekiso engafunekiyo yezinto ezenzekayo okanye iinkumbulo ezingafunekiyo zindinxunguphalis ile		Imifanekiso engafunekiyo yezinto ezenzekayo, okanye iinkumbulo ezingafunekiyo bezindihlupha
29	I have been irritable when with other people	Bendikruqula xa ndikunye nabanye abantu	<b>Bendikwe xa ndikunye nabanye abantu</b>	<b>Bendikruqula xa ndinabanye abantu</b>	<b>Bendikruquka xa ndinabanye abantu</b>	
30	I have thought I am to blame for my problems and difficulties	Ndicinge ukuba bendinokusolwa ngeengxaki neenzima zam		Ndicinge ukuba ndim omakazisole ngeengxaki neenzima zam		Ndicinge ukuba ndizenzile ngeemeko neengxaki zenzima zam
31	I have felt optimistic about my future	Ndizive ndilindele okuhle ngengomso lam				Ndizive ndinethemba ngengomso lam
32	I have achieved the things I wanted to	Ndizifumene izinto ebindizifuna		Ndizifumene izinto ebendizifuna		Imizamo yam iphumelele
33	I have felt humiliated or shamed by other people	Ndikhe ndaziva ndithotyelwe phantsi okanye ndinodano ngabanye abantu	<b>Ndaziva ndiyintlekise okanye ndinyunyezwa ngabanye abantu</b>	<b>Ndizive ndiyintlekise okanye ndinyeliswa ngabanye abantu</b>	<b>Ndizive ndiphoxiwe okanye hlaziwe ngabanye abantu</b>	<b>Ndizive ndiyintlekisa ndiphoxekile kwabanye abantu</b>
34	I have hurt myself physically or taken dangerous risks with my health	Ndizonzakalisile ngokwasemzimbe ni okanye ndithathe imingcipheko enobungozi ngempilo yam		<b>Ndizenzakalisile okanye ndenze izinto ukubeka impilo yam emngciphekweni</b>		
	THANK YOU FOR YOUR TIME IN COMPLETING THIS QUESTIONNAIRE	ENKOSI NGEKESHA LAKHO EKUGGCWALISEN I OLUTHOTHO LWEMIBUZO		<b>SIYABULELA NGOKUGCWALI SA ELI PHETSHANA LEMIBUZO</b>		
	Please turn over	Nceda uguqule iphepha				
	Page 1	Iphepha: 1				
	Page 2	Iphepha: 2				

The finalised CORE-OM Xhosa version was then quantitatively piloted within a South African, first language Xhosa speaking student population sample, the results of which are presented in the following chapter, Chapter 8.

## **CHAPTER 8: RESULTS – PILOTING THE CORE-OM XHOSA VERSION WITHIN A SOUTH AFRICAN FIRST LANGUAGE XHOSA SPEAKING STUDENT SAMPLE**

Drawing from the CORE System Trust translating and normalising guidelines (Evans, 2008) and the 'test development and adaptation' area within the ITC guidelines (Hambleton, 2005) this thesis used the results generated from the quantitative piloting of the CORE-OM Xhosa version to demonstrate its psychometric properties and investigate the level of equivalence achieved across the South African CORE-10 English and Xhosa language versions.

### **8.1 Psychometric properties of the CORE-OM Xhosa version**

#### **a) Sample demographics**

##### Clinical sample

Of the total 250 CORE-OM Xhosa version questionnaires disseminated at the three Eastern Cape University student counselling centres during the academic year (February – November) of 2012, 17 were returned completed from the University of Fort Hare, 22 from the Nelson Mandela Metropolitan University and 10 from Rhodes University. A total of 53 questionnaires were completed by first language Xhosa speaking students. Of these questionnaires 43 (81%) were completed in full, 6 (11%) contained one item omitted and 4 (8%) were unusable due to omissions of 3 items or more, or omission of more than 1 item within the same domain. These figures are summarised in table 8.1.1. A total of 49 usable CORE-OM questionnaires were collected from this demographic of first language Xhosa speaking clinical sample students.

Table 8.1.1 Combined first language Xhosa speaking student clinical sample

Total completed questionnaires:	All CORE-OM items completed:	1 item omitted:	2 items omitted:	3 items omitted:	Unusable: excess of three omitted
53	43 (81%)	6 (11%)	0 (0%)	0 (0%)	4 (8%)

This clinical sample included 18 (41%) male and 26 (59%) female students ranging in age between 18 - 28 years with a mean age of 21.5 years. Of the total sample 44 (100%) were black. These sample demographics are presented in Table 8.1.2 below.

Table 8.1.2 Combined first language Xhosa speaking sample collected in 2012

Combined first language Xhosa speaking student clinical sample	
n:	49
Age:	Range: 18-28 Mean: 21.5 years
Sex:	Male: 20 (41%) Female: 29 (59%)
Race:	White: 0 (0%) *Black: 49 (100%)
First Language:	49 (100%) 1 <sup>st</sup> Language Xhosa

\* Including all students previously disadvantaged by Apartheid (Black African, Indian, and Coloured)

### Non-clinical sample

A total of 15 academic lectures across 13 academic departments within 4 faculties at the University of Fort Hare were accessed using random stratified cluster sampling during the first semester (February – June) of 2012 in order to generate the non-clinical student sample. Of the total 6359 students registered at the University of Fort Hare for fulltime study in 2012, 298 students participated in the non-clinical sample. The sample was then reduced to first language Xhosa speaking students who complied proportionately with the strata of faculty and level of study presented in table 5.2.5 of the Methodology chapter of this thesis. The final sample of 200 first language Xhosa speaking students included 46 (23%) students from the management and commerce faculty, 24 (12%) from the education faculty, 66 (33%) from the social science and humanities faculty and 64 (32%) from the science and agriculture faculty in accordance with the proportions outlined in table 5.2.6 of the Methodology chapter of this thesis.

Of these questionnaires 181 (91%) were completed in full, 21 (11%) contained one item omitted, 2 (1%) contained two items omitted and 6 (3%) were unusable due to omissions of 3 items or more, or omission of more than 1 item within the same

domain. These figures are summarised in table 8.1.3. A total of 194 usable CORE-OM questionnaires were collected from this demographic of first language Xhosa speaking non-clinical sample students.

Table 8.1.3 University of Fort Hare first language Xhosa speaking student non-clinical sample

Total completed questionnaires:	All CORE-OM items completed:	1 item omitted:	2 items omitted:	3 items omitted:	Unusable: excess of three omitted
200	171 (84%)	21 (11%)	2 (1%)	0 (0%)	6 (3%)

This non-clinical sample included 100 (52%) male and 94 (48%) female students ranging in age between 18-48 years with a mean age of 23.3 years. Of the total sample 194 (100%) were black, and 18 (9%) students were currently receiving psychotherapeutic treatment. These demographics are presented in Table 8.1.4 below in comparison with the demographics of the total University of Fort Hare student population for 2012.

Table 8.1.4 University of Fort Hare non-clinical student sample and total University of Fort Hare student population registered for 2012.

	University of Fort Hare student non-clinical sample	Total University of Fort Hare student population registered 2012
n:	194	6359
Age:	Range: 18-48 Mean: 23.3 years	Range: 18-67 Mean: unavailable
Sex:	Male: 100 (52%) Female: 94 (48%)	Male: 2893 (45%) Female: 3466 (55%)
Race:	White: 0 (0%) *Black: 194 (100%)	White: 13 (1%) Black: 6346 (99%)
First Language:	194 (100%) 1 <sup>st</sup> Language Xhosa	5404 (85%) 1 <sup>st</sup> Language Xhosa

\* Including all students previously disadvantaged by Apartheid (Black African, Indian, and Coloured)

Within the University of Fort Hare student non-clinical sample a chi-square test of proportions revealed that male and female students were proportionately represented in comparison with the total University of Fort Hare student population ( $\chi^2(1) = 3.52, p > 0.05$ ), as were black and white students ( $\chi^2(1) = 2.02, p > 0.05$ ).

The psychometric properties of the CORE-OM Xhosa version within a South African first language Xhosa speaking student population sample were investigated in comparison with the psychometric properties of the CORE-OM English version within a South African first language English, and Xhosa speaking student sample. The demographics of these samples are compared in tables 8.1.5 and 8.1.6.

Table 8.1.5 Combined first language Xhosa speaking clinical sample and Rhodes University first language English and Xhosa speaking student samples

	Rhodes University 1 <sup>st</sup> Lang English clinical sample (CORE-OM Eng)	Rhodes University 1 <sup>st</sup> Lang Xhosa clinical sample (CORE-OM Eng)	Combined 1 <sup>st</sup> Lang Xhosa clinical sample (CORE-OM Xhosa)
n:	200	41	49
Age:	Range: 18-34 Mean: 20.6 years	Range: 18-46 Mean: 20.1 years	Range: 18-28 Mean: 21.5 years
Sex:	Male: 56 (26%) Female: 144 (74%)	Male: 8 (20%) Female: 33 (80%)	Male: 20 (41%) Female: 29 (59%)
Race:	White: 127 (64%) *Black: 73 (36%)	White: 0 (0%) *Black: 41 (100%)	White: 0 (0%) *Black: 49 (100%)

\* Including all students previously disadvantaged by Apartheid (Black African, Indian, and Coloured)

Table 8.1.6 University of Fort Hare non-clinical sample and Rhodes University first language English, and Xhosa speaking student samples

	Rhodes University 1 <sup>st</sup> Lang English non-clinical sample (CORE-OM Eng)	Rhodes University 1 <sup>st</sup> Lang Xhosa non-clin sample (CORE-OM Eng)	University of Fort Hare 1 <sup>st</sup> Lang Xhosa non-clin sample (CORE-OM Xhosa)
n:	210	43	194
Age:	Range: 18-47 Mean: 21.6 years	Range: 18-44 Mean: 20.6 years	Range: 18-48 Mean: 23.3 years
Sex:	Male: 102 (49%) Female: 108 (51%)	Male: 12 (28%) Female: 31 (72%)	Male: 100 (52%) Female: 94 (48%)
Race:	White: 161 (77%) *Black: 49 (23%)	White: 0 (0%) *Black: 43 (100%)	White: 0 (0%) *Black: 194 (100%)

## b) Usability

Of the total number of CORE-OM Xhosa version questionnaires distributed in the combined first language Xhosa speaking student clinical population sample 81% (43)

were completed in full, while 85% (171) of the questionnaires distributed in the non-clinical sample were completed in full. These completion rates are commensurate with those obtained by the CORE-OM English version within the Rhodes University first language English speaking ( $\chi^2(1) = 3.46, p > 0.05$ ) and Xhosa speaking ( $\chi^2(1) = 0.75, p > 0.05$ ) student samples. With prorating applied completion rates of the CORE-OM Xhosa version increased to 92% within the clinical sample and 97% within the non-clinical sample. These rates are commensurate with prorated completion rates of the CORE-OM English version within the Rhodes University first language English ( $\chi^2(1) = 0.21, p > 0.05$ ) and Xhosa ( $\chi^2(1) = 0.04, p > 0.05$ ) speaking student samples and demonstrate good readability and ease of use of the measure. These results are summarised in table 8.1.7.

Table 8.1.7 Summary of usability of CORE-OM Xhosa and English versions within South African university student population samples

CORE-OM	CORE-OM English version				CORE-OM Xhosa version	
	Rhodes University student samples					
	Clinical		Non-clinical		Clinical	Non-clinical
	1st Lang English	1st Lang Xhosa	1st Lang English	1st Lang Xhosa	1st Lang Xhosa	1st Lang Xhosa
Completed	202	46	214	44	53	200
Usable	200 (99%)	41 (89%)	210 (98%)	43 (98%)	49 (92%)	194 (97%)
Unusable	2 (1%)	5 (11%)	4 (2%)	1 (2%)	4 (8%)	6 (3%)

### c) Characteristics of the data

Within the combined University of Fort Hare, Nelson Mandela Metropolitan and Rhodes University clinical samples and the University of Fort Hare non-clinical sample, data was investigated for independence, normality and homogeneity of variance in accordance with the assumptions underlying the use of parametric tests for analysis.

#### Independence

The combined clinical sample was collected at the University of Fort Hare, Nelson Mandela Metropolitan University and Rhodes University Student Counselling

Centres using consecutive sampling methods while the non-clinical sample was collected across undergraduate and postgraduate lectures within the University of Fort Hare campus using random, stratified cluster sampling. As a result the data sets were independently collected and the data collection processes did not bias the inclusion of any one case over another. Scores assigned to the individual cases were generated independently by the participants in a self-reporting manner. These data collection methods allowed the samples to adhere to the first parametric assumption described by Keselman et al. (2008) as the assumption that data used to generate means for one group are statistically independent from the data used to generate means for the other group, and within the groups data collected from individual participants are statistically independent from one another.

Normality

The skewness and kurtosis for the first language Xhosa speaking combined University of Fort Hare, Nelson Mandela Metropolitan and Rhodes University clinical samples, and the University of Fort Hare non-clinical sample across total and all domain mean scores are presented in table 8.1.8 below.

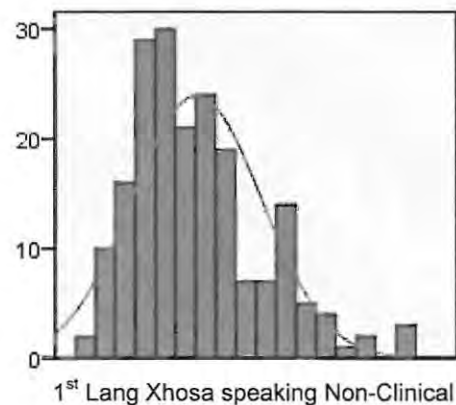
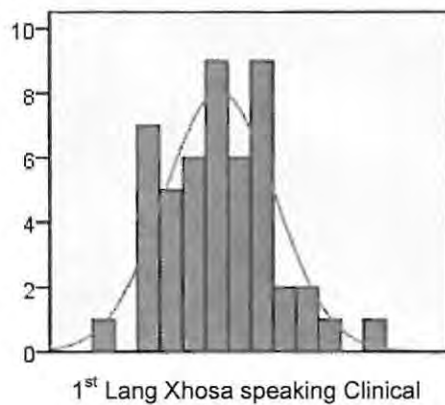
Table 8.1.8 Skewness coefficients and Kurtosis for the clinical and non-clinical samples across total and all domain mean scores

	Combined Clinical Samples		University of Fort Hare Non-Clin	
	CORE-OM Xhosa		CORE-OM Xhosa	
	1 <sup>st</sup> Lang Xhosa		1 <sup>st</sup> Lang Xhosa	
	Skewness	Kurtosis	Skewness	Kurtosis
Subjective Wellbeing:	0.03	-0.46	0.88	0.42
Problems/ Symptoms:	0.02	-0.14	0.65	-0.23
Life Functioning:	0.37	0.47	0.91	1.14
<b>Risk:</b>	<b>1.60</b>	<b>2.55</b>	<b>1.96</b>	<b>3.61</b>
Non-risk item (28 item)	0.17	0.01	0.85	0.62
All items (34 items):	0.45	0.20	0.93	0.73

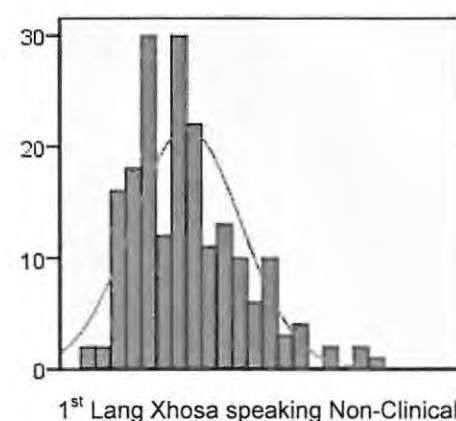
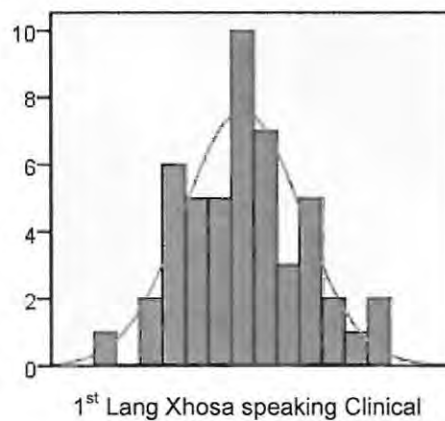
Skewness statistics for the combined clinical samples across the total, non-risk and domain means (except the risk domain) ranged between 0.02 – 0.45, and kurtosis statistics ranged between - 0.46 – 0.47, indicating very minor deviations from

normality in the form of slightly positively skewed and peaked distributions. However the risk domain demonstrated a strongly positively skewed and flat distribution. In comparison skewness statistics for the non-clinical sample across total, non-risk and domain means (except the risk domain) ranged between 0.65 – 0.93, and kurtosis statistics ranged between -0.23 - 1.14, indicating positively skewed and peaked distributions. The risk domain again demonstrated a strongly positively skewed and flat distribution. However because Wilkinson et al. (1999, pp. 598) caution against the use of “distributional tests and statistical indexes of shape” alone when investigating normality, the distributions of the clinical and non-clinical samples across total, non-risk and all domain means are presented in histograms 13 - 18.

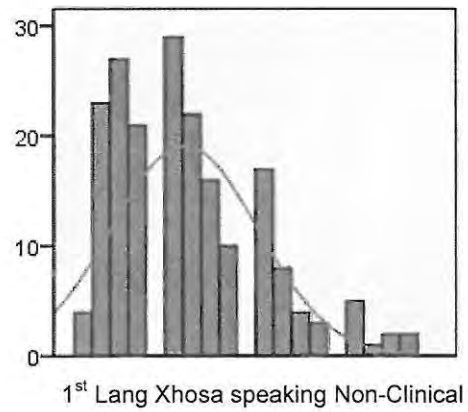
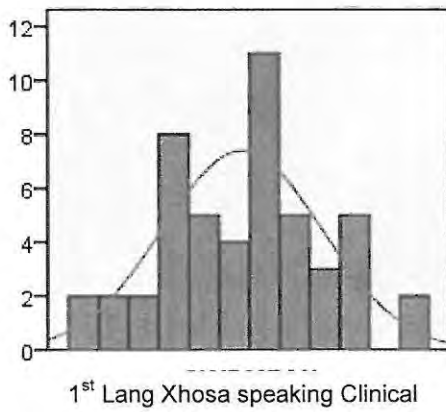
Histogram 13 Total Mean



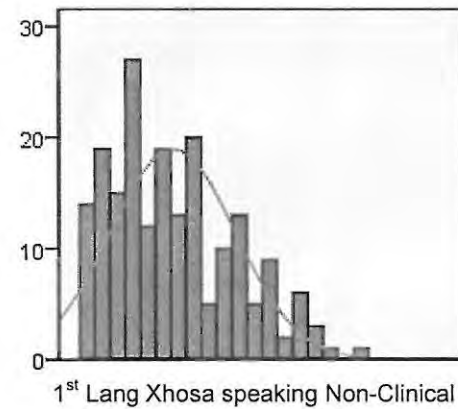
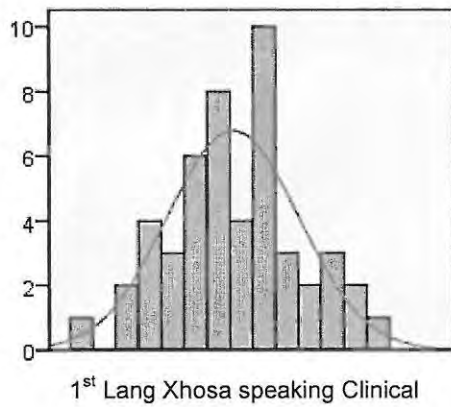
Histogram 14 Non-risk Mean



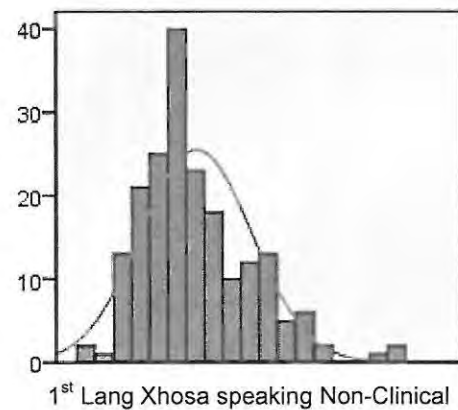
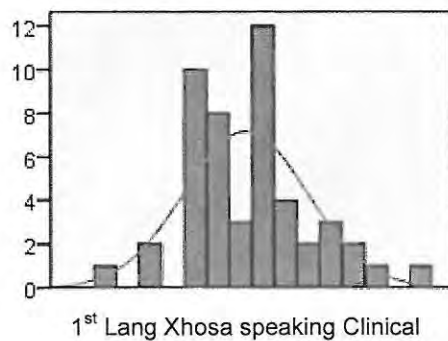
Histogram 15 Subjective Wellbeing Mean



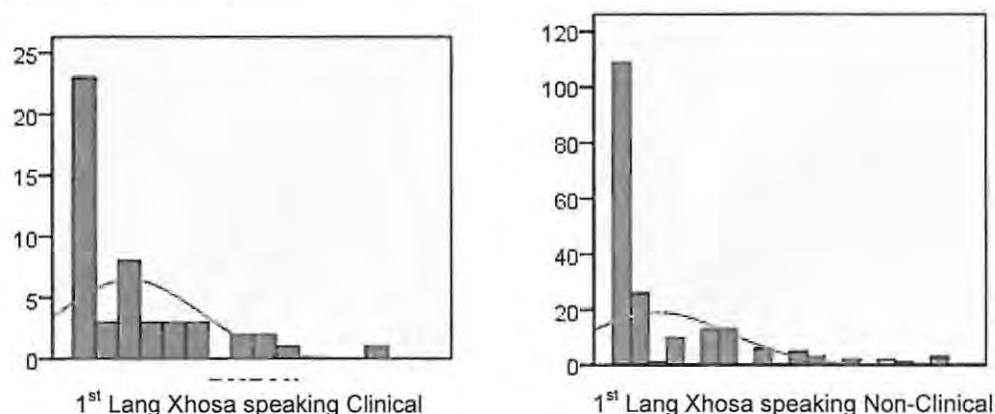
Histogram 16 Problems or Symptoms Mean



Histogram 17 Life Functioning Mean



## Histogram 18 Risk Mean



These histograms demonstrate deviations from normality for the total, non-risk, subjective wellbeing, problems or symptoms and life functioning domain means with positively skewed and peaked distributions, while the risk domain demonstrated a severe deviation from normality with positively skewed and flat distributions in both the clinical and non-clinical samples. These findings are commensurate with the statistical indexes in table 8.1.8. Histograms 13 - 18 in combination with the statistical indexes presented in table 8.1.8 demonstrate that the assumption of normality was violated by both the clinical and non-clinical samples.

### Homogeneity of variances

The results of an investigation of the homogeneity of variance between the first language Xhosa speaking combined University of Fort Hare, Nelson Mandela Metropolitan and Rhodes University clinical samples, and the University of Fort Hare non-clinical sample using Levene's Test for Equality of Variance (Howell, 2002) are presented in table 8.1.9. The research hypothesis stated that if the variance between the clinical and non-clinical samples was homogeneous then no statistically significant differences would be evident between the samples. The null hypothesis was therefore that the variance between the clinical and non-clinical samples was homogeneous. The alternative hypothesis stated that the variance between the clinical and non-clinical samples was not homogeneous. A significance level of  $p \leq 0.05$  was applied and two-tailed statistical tests were selected because the researcher did not have prior information about the parameter of the two samples.

Table 8.1.9 Levene's Test of Homogeneity of variance between the first language Xhosa speaking clinical and non-clinical samples

	Combined	Fort Hare	Difference	
	1 <sup>st</sup> Lang Xhosa Clinical n= 49	1 <sup>st</sup> Lang Xhosa Non-Clin n= 194	Levene's F	p value
Subjective Wellbeing:	78.0	65.7	0.83	0.36
Problems/ Symptoms:	52.0	46.5	0.76	0.78
Life Functioning:	46.7	36.9	1.1	0.29
<b>Risk:</b>	<b>56.9</b>	<b>16.8</b>	<b>26.2</b>	<b>0.00</b>
Non-risk items (28 items):	41.3	35.8	0.28	0.60
All items (34 items):	37.0	29.2	0.97	0.33

Significant differences were only evident between the clinical and non-clinical samples across the risk domain, indicating the violation of the assumption of homogeneity of variance for this domain, within these samples.

#### d) Reliability

Reliability of the CORE-OM Xhosa version within a South African first language Xhosa speaking student population sample was investigated using internal consistency applying Cronbach's alpha (Cronbach, 1951).

#### Internal Consistency

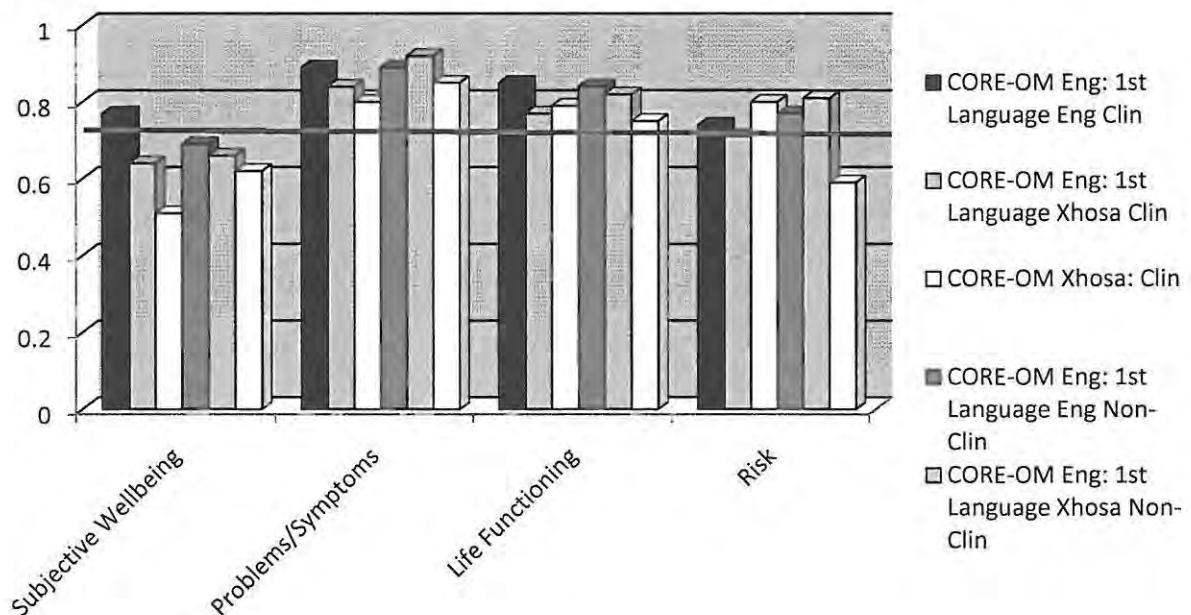
The CORE-OM Xhosa version demonstrated acceptable internal consistency across the clinical and non-clinical samples achieving a Cronbach alpha estimate of 0.91 for the overall scale of global psychological distress and  $\alpha \geq 0.70$  across all domains except the subjective wellbeing domain within the clinical and non-clinical samples and the risk domain within the non-clinical sample. Again confidence intervals for Cronbach alpha estimates within the subjective wellbeing domains were large indicating inconsistency in responses to items within this domain across the first language Xhosa speaking student samples. Lower Cronbach alpha estimates were demonstrated in comparison to the original CORE-OM English version within both the first language English and Xhosa speaking samples. These results are presented in Table 8.1.10.

Table 8.1.10 Internal consistency of the CORE-OM Xhosa version

Domains	CORE-OM Xhosa version		CORE-OM English version			
			1 <sup>st</sup> Lang English		1 <sup>st</sup> Lang Xhosa	
	Clinical n = 49	Non-clin n = 194	Clin n = 200	Non-clin n=210	Clin n = 41	Non-clin n=43
	Cronbach's α (CI : 95)	Cronbach's α (CI : 95)	(CI : 95)	(CI : 95)	(CI : 95)	(CI : 95)
<b>Sub Wellbeing:</b>	<b>0.51 (0.24-0.70)</b>	<b>0.62 (0.52-0.70)</b>	0.77 (0.71-0.82)	<b>0.69 (0.61-0.75)</b>	<b>0.64 (0.41-0.79)</b>	<b>0.66 (0.45-0.80)</b>
Prob/Symptoms:	0.80 (0.69-0.88)	0.85 (0.81-0.88)	0.89 (0.86-0.91)	0.89 (0.87-0.91)	0.84 (0.76-0.90)	0.92 (0.88-0.95)
Life Functioning:	0.79 (0.69-0.87)	0.75 (0.71-0.81)	0.85 (0.82-0.88)	0.84 (0.81-0.87)	0.77 (0.64-0.86)	0.82 (0.72-0.89)
<b>Risk:</b>	<b>0.80 (0.70-0.88)</b>	<b>0.59 (0.50-0.68)</b>	0.74 (0.68-0.80)	0.77 (0.72-0.82)	0.71 (0.55-0.83)	0.81 (0.71-0.89)
Non-risk items:	0.89 (0.84-0.94)	0.91 (0.88-0.92)	0.94 (0.93-0.95)	0.94 (0.93-0.95)	0.91 (0.86-0.94)	0.94 (0.91-0.96)
All items:	0.90 (0.86-0.94)	0.91 (0.89-0.93)	0.94 (0.93-0.95)	0.94 (0.93-0.95)	0.91 (0.87-0.95)	0.95 (0.92-0.97)

A summary of the comparison of Cronbach alpha estimates of the CORE-OM Xhosa version obtained within the first language Xhosa speaking clinical and non-clinical samples, and the CORE-OM English version within the Rhodes University first language English, and Xhosa speaking student sample are presented in graph 3.

Graph 3 Internal consistency of the CORE-OM English and Xhosa versions



Correlations across the CORE-OM Xhosa version domains within the first language Xhosa speaking student clinical and non-clinical samples were compared with those

documented for the CORE-OM English version within the Rhodes University samples using Spearman's Rho (Howell, 2002) and are presented in table 8.1.11.

Table 8.1.11 Correlations across CORE-OM Xhosa and English version domains

Domain	Spearman's Rho							
	SWB		P/S		L/F		Risk	
	Clin	Non-Clin	Clin	Non-Clin	Clin	Non-Clin	Clin	Non-Clin
<b>CORE-OM Xhosa version</b>								
University of Fort Hare samples								
Subjective wellbeing SWB	1.0	1.0						
Problems/Symptoms P/S	0.71	0.66	1.0	1.0				
Life Functioning L/F	0.62	0.69	0.67	0.63	1.0	1.0		
Risk	0.41	0.52	0.47	0.58	0.46	0.44	1.0	1.0
<b>CORE-OM English version</b>								
RU First language English samples								
Subjective wellbeing SWB	1.0	1.0						
Problems/Symptoms P/S	0.80	0.77	1.0	1.0				
Life Functioning L/F	0.75	0.79	0.77	0.78	1.0	1.0		
Risk	0.46	0.43	0.47	0.52	0.44	0.48	1.0	1.0
RU First language Xhosa samples								
Subjective wellbeing SWB	1.0	1.0						
Problems/Symptoms P/S	0.68	0.80	1.0	1.0				
Life Functioning L/F	0.57	0.69	0.80	0.82	1.0	1.0		
Risk	0.18	0.64	0.49	0.77	0.51	0.69	1.0	1.0

Correlations across the subjective wellbeing, problems or symptoms and life functioning domains within the first language Xhosa speaking student samples using the CORE-OM Xhosa version ranged between 0.62 and 0.71, and were lower than those documented for the CORE-OM English version in the South African samples, but demonstrated the same pattern of correlations across the non-risk domains.

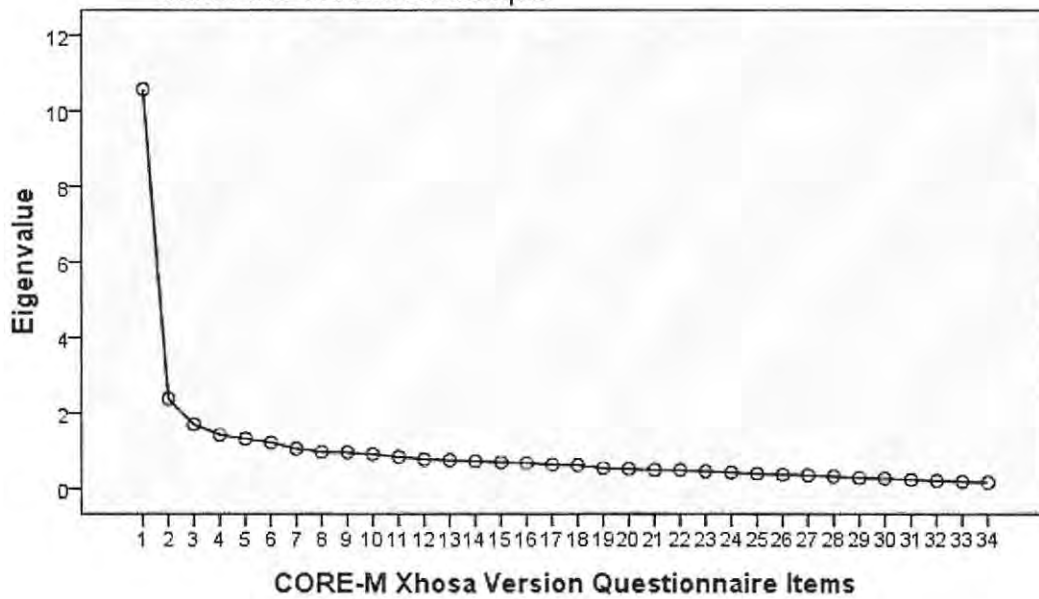
### e) Validity

The validity of the CORE-OM Xhosa version within a South African first language Xhosa speaking student population samples was investigated in terms of the psychometric structure of the tool, as well as discriminant and convergent validity.

Psychometric structure

The psychometric structure of the CORE-OM Xhosa version was investigated through principal components analysis (Kline, 1994). The clinical and non-clinical samples were combined resulting in a total of 213 usable CORE-OM questionnaires, falling well within the recommended sample size (Kline, 1994). The scree plot indicated one dominant component that accounted for 31% of the total variance, with six additional smaller components with Eigenvalues greater than 1. These results are illustrated in scree plot 4.

Scree Plot 4: Principal components analysis of the CORE-OM Xhosa version within the combined sample



Factors were rotated using oblique direct oblimin rotation (Kline, 1994). The results are presented in table 8.1.12. The dominant component, again indicative of general distress as was evident in the exploratory factor analysis of the Rhodes University samples using the CORE-OM English version, comprised 6 negatively worded questionnaire items with moderate factor loadings, drawn predominantly from the problems or symptoms domain. These items were considerably less than the 14 items that loaded within the Rhodes University first language English speaking student sample, and the 13 items that loaded within the Rhodes University first language Xhosa speaking student samples using the CORE-OM English version,

and did not overlap with the items that loaded on the same component within the Rhodes University samples.

The second component comprised 5 positively worded items, again indicative of healthy functioning as was evident in the exploratory factor analysis of the Rhodes University samples using the CORE-OM English version, with moderate to high factor loadings drawn predominantly from the life functioning domain. Four of these items (7, 12, 21, and 32) loaded consistently within the same component across the Rhodes University first language English and Xhosa speaking student samples using the CORE-OM English version. The risk to self items did not load meaningfully within a single component within this sample.

The high cross loadings for items 20 (“My problems have been impossible to put down”), 10 (“Talking to people has felt too much for me”), 26 (“I have thought I have no friends”), 14 (“I have felt like crying”), 30 (“I have thought I am to blame for my problems and difficulties”), 4 (“I have felt OK about myself”), 9 (“I have thought of hurting myself”), 34 (“I have hurt myself physically or taken dangerous risks with my life”), 33 (“I have felt humiliated or shamed by other people”), 22 (“I have threatened or intimidated another person”), 8 (“I have been troubled by aches, pains or physical problems”), 2 (“I have felt tense, anxious or nervous”), 15 (“I have felt panic or terror”), 17 (“I have felt overwhelmed by my problems”), 27 (“I have felt unhappy”), 5 (“I have felt totally lacking in energy or enthusiasm), and 23 (“I have felt despairing or hopeless”) suggested poor differentiation of these items across factors (Brown, 2006). While the limited number of items that loaded on components 3, 4, 5, 6 and 7 were not sufficient enough to consider these as meaningful factors.

As a result only 6 CORE-OM questionnaire items loaded in similar ways across similar factors within both the CORE-OM English and Xhosa versions across the Rhodes University first language English and Xhosa speaking student samples, and the first language Xhosa speaking University of Fort Hare samples. Items 18 and 20 loaded within the general distress component across all three samples, while items 7, 12, 21 and 32 loaded on the same healthy functioning component. These findings suggest some overlap of the construct of gross distress as measured by the CORE-OM across the two language versions, but also considerable differences.

Table 8.1.12 The components resulting from principal components analysis of the CORE-OM Xhosa version within the non-clinical sample

Item No	Item	Domain	Component						
			1 31%	2 7%	3 5%	4 4%	5 4%	6 4%	7 3%
28.	Unwanted images/memories distressed me	Prob/Symptoms	0.70						
13.	I have been disturbed by unwanted thoughts	Prob/Symptoms	0.64						
11.	Tension/anxiety have prevented me	Prob/Symptoms	0.62						
29.	I have been irritable when with other people	Life Function	0.62						
18.	I have difficulty sleeping	Prob/Symptoms	0.61						
20.	<b>My problems are impossible to put aside</b>	<b>Prob/Symptoms</b>	<b>0.55</b>						<b>-0.25</b>
25.	I have felt criticised by others	Life Function	0.53						
10.	Talking to people has felt too much	Life Function	0.48			0.24			
26.	I have thought I have no friends	Life Function	0.47		0.31		0.43		
14.	I have felt like crying	Sub Wellbeing	0.43		0.26	0.21			-0.34
30.	I have thought I am to blame for problems	Prob/Symptoms	0.32					-0.30	-0.27
32.	I have achieved the things I wanted to	Life Function		0.77					
21.	I have been able to do things I've needed	Life Function		0.76					
31.	I have felt optimistic about my future	Sub Wellbeing		0.75					
12.	I have been happy with things I have done	Life Function		0.66					
7.	I have felt able to cope if things go wrong	Life Function		0.64					
4.	I have felt OK about myself	Sub Wellbeing		0.51	0.24				0.24
16.	I have made plans to end my life	Risk to self			0.80				
24.	I have thought it were better if I were dead	Risk to self			0.71				
9.	I have thought of hurting myself	Risk to self			0.65				-0.32
34.	I have hurt myself physically/taken risks	Risk to self			0.47	0.31			
33.	I have felt humiliated/shamed by others	Life Function	0.39		0.42				
6.	I have been physically violent with others	Risk to others				0.74			
22.	I have threatened/intimidated another	Risk to others			0.31	0.59	-0.32		
3.	I have felt I have support	Life Function					0.67		
19.	I have felt warmth/affection for someone	Life Function					0.58		
8.	I have been troubled by aches/pains	Prob/Symptoms	0.38					0.79	
2.	I have felt tense, anxious or nervous	Prob/Symptoms				0.39			-0.68
1.	I have felt terribly alone or isolated	Life Function							-0.57
15.	I have felt panic or terror	Prob/Symptoms	0.2						-0.55
17.	I have felt overwhelmed by my problems	Sub Wellbeing	0.20	0.29	0.25				-0.49
27.	I have felt unhappy	Prob/Symptoms	0.43						-0.46
5.	I have felt lacking in energy/enthusiasm	Prob/Symptoms					-0.24		-0.45
23.	I have felt despairing or helpless	Prob/Symptoms	0.28	0.26	0.29				-0.39

### Discriminant Validity

The discriminant validity of the CORE-OM Xhosa version within a South African first language Xhosa speaking student population sample was established by

investigating the CORE-OM Xhosa version's ability to differentiate between the clinical and non-clinical samples. This process required the comparison of CORE-OM mean scores across the clinical and non-clinical samples. The research hypothesis stated that if discriminant validity of the CORE-OM Xhosa version within a South African first language Xhosa speaking student population sample was high then the CORE-OM Xhosa version would demonstrate statistically significant differences in total and domain mean scores between the clinical and non-clinical samples.

The null hypothesis was therefore that the CORE-OM total and domain mean scores did not differ across the clinical and non-clinical samples, or that the mean of the clinical sample was equal to the mean of the non-clinical sample:  $H_0: \mu_{\text{clin}} = \mu_{\text{non-clin}}$ . The alternative hypothesis was therefore that the CORE-OM total and domain mean scores demonstrated statistically significant differences across the clinical and non-clinical samples:  $H_1: \mu_{\text{clin}} \neq \mu_{\text{non-clin}}$ . A significance level of  $p \leq 0.5$  was applied. Two-tailed tests were selected because the researcher did not have prior information about the parameter of the two population samples.

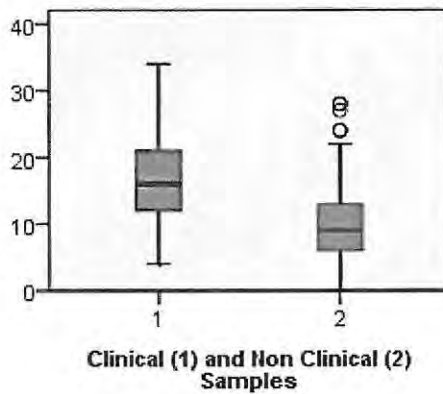
From the investigation of the data characteristics of the combined University of Fort Hare, Nelson Mandela Metropolitan and Rhodes University clinical samples, and the University of Fort Hare non-clinical sample it is evident that the data meet the first parametric assumption of independence, but violate the assumptions of normality across all domains and the assumption of homogeneity of variance within the risk domain. In addition sample sizes for the clinical and non-clinical samples were considerably different. Under these circumstances Zimmerman (1998) suggests the use of the non-parametric t test, specifically the Mann-Whitney U test, to compensate for the violation of the assumptions of normality and homogeneity. The results are presented in table 8.1.13. Statistically significant ( $p < 0.05$ ) differences were demonstrated between the clinical and non-clinical samples. Large effect sizes were indicated across the total and non-risk mean scores and the subjective wellbeing, problems or symptoms and life functioning domains, while a medium effect size was demonstrated between the risk domains across the two samples. The differences in clinical and non-clinical sample mean scores are further illustrated in box plots 7-12.

Table 8.1.13 Comparison of CORE-OM Xhosa version mean scores and standard deviations within the clinical and non-clinical samples

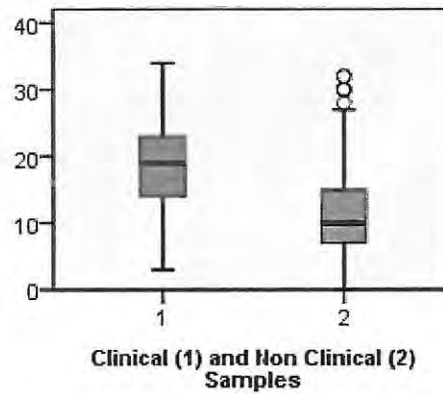
Domains	CORE-OM Xhosa	CORE-OM Xhosa	Differences	
	Clinical n= 49 Mean (SD)	Non-clin n=194 Mean (SD)	p value	Effect size Cohen's <i>d</i>
Subjective Wellbeing:	19.5 (8.9)	12.2 (8.1)	0.00	0.9
Problems/ Symptoms:	18.0 (7.2)	10.2 (6.8)	0.00	1.1
Life Functioning:	19.4 (6.8)	13.1 (6.1)	0.00	1.0
Risk:	6.3 (7.5)	2.5 (4.1)	0.01	0.6
Non-risk items (28 items):	18.8 (6.5)	11.7 (6.0)	0.00	1.1
All items (34 items):	16.6 (6.0)	10.1 (5.4)	0.00	1.1

These results indicate that the CORE-OM Xhosa version was able to clearly differentiate between the first language Xhosa speaking student clinical and non-clinical population samples across total, non-risk, and all domains, demonstrating high discriminant validity of the tool within this South African demographic.

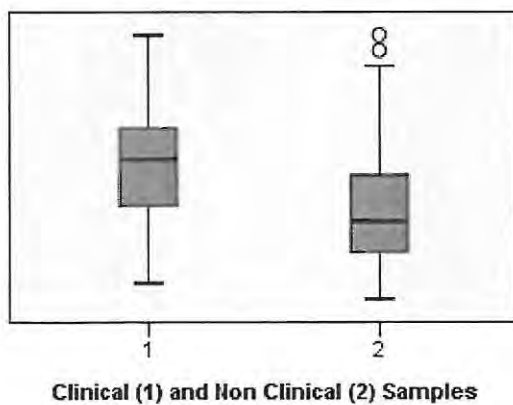
Boxplot 7 Total



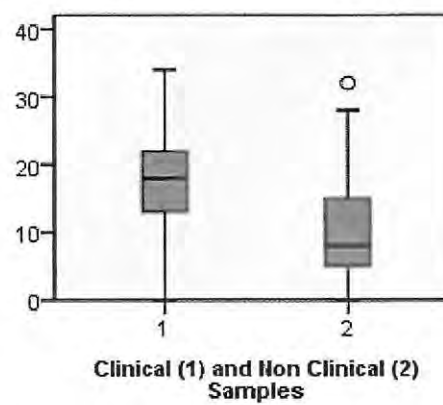
Boxplot 8 Non-Risk



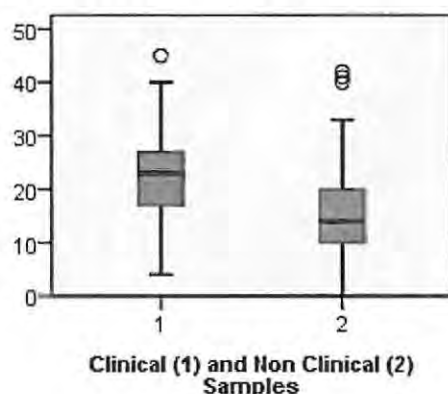
Boxplot 9 Subjective Wellbeing



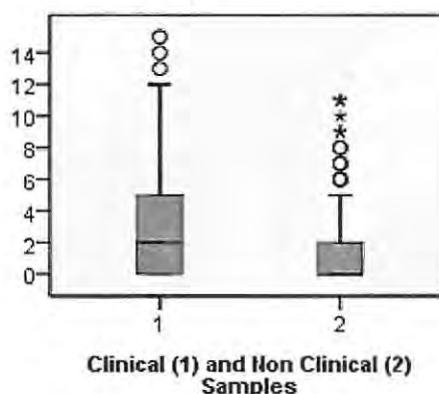
Boxplot 10 Problems or Symptoms



Boxplot 11 Life Functioning



Boxplot 12 Risk



A summary of the comparison of means across the subjective wellbeing, problems or symptoms, life functioning and risk domains within both the CORE-OM English and Xhosa versions using student population samples are presented in table 8.1.14 and graph 4.

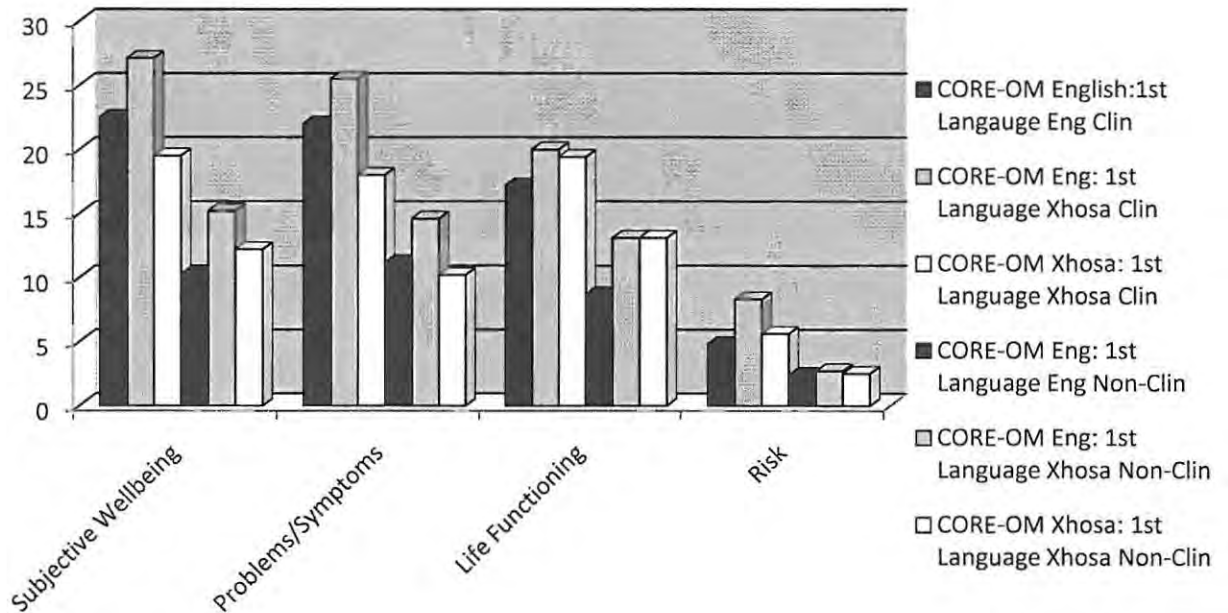
Table 8.1.14 Comparison of CORE-OM English version mean scores within the Rhodes University samples and the CORE-OM Xhosa version mean scores within the combined and University of Fort Hare samples

Domains	CORE-OM English Rhodes University				CORE-OM Xhosa	
	1st Lang English sample		1st Lang Xhosa sample		Clinical n = 44	Non-Clin n = 194
	Clinical n= 200	Non-clin n=210	Clinical n= 41	Non-clin n=43		
Subjective Wellbeing:	22.5	10.3	27.1	15.2	19.5	12.2
Problems/ Symptoms:	22.0	11.2	25.5	14.6	18.0	10.2
Life Functioning:	17.2	8.7	20.0	13.1	19.4	13.1
Risk:	4.8	2.4	8.3	2.7	6.3	2.5
Non-risk items (28 items):	20.0	10.0	23.2	13.9	18.8	11.7
All items (34 items):	17.3	8.7	20.6	12.1	16.6	10.1

These comparisons indicate that CORE-OM mean scores were generally lowest on the CORE-OM Xhosa version across the subjective wellbeing and problems or symptoms domains within the clinical samples, and highest on the CORE-OM English version within the Rhodes University first language Xhosa speaking student sample across all domains. However within the non-clinical samples CORE-OM mean scores were lowest within the Rhodes University first language English

speaking student sample, and generally highest within the same version using the Rhodes University first language Xhosa speaking student sample. Although without evidence of measurement equivalence across these two language versions of the CORE-OM it is not possible to meaningfully interpret these differences (Byrne & Van de Vijver, 2010).

Graph 4 Comparisons of CORE-OM domain means



### Convergent validity

A total of 20 participants within the combined University of Fort Hare, Nelson Mandela Metropolitan and Rhodes University clinical samples completed all items of both the CORE-OM Xhosa version and the BDI II Xhosa version. A significant positive correlation was demonstrated between the total mean scores on the CORE-OM Xhosa version and the BDI II ( $r_s = 0.71$ ,  $N = 20$ ,  $p < 0.00$ ).

### Clinical cut-off points

The combined University of Fort Hare, Nelson Mandela Metropolitan and Rhodes University clinical samples, and the University of Fort Hare non-clinical sample

means and standard deviations were used to calculate criteria for clinically significant change in accordance with the method outlined by Jacobson and Truax (1991).

$$\frac{(mean_{clin} \times SD_{norm}) + (mean_{norm} \times SD_{clin})}{SD_{norm} + SD_{clin}}$$

Clinical cut-off points were calculated across the total and domain mean scores within the samples. The results are presented in table 8.1.15 in comparison to the clinical cut off points established for the CORE-OM English version within the Rhodes University first language English and Xhosa speaking student samples.

Table 8.1.15 Comparison of clinical cut-off points between the CORE-OM English and Xhosa versions

Domains	CORE-OM English version		CORE-OM Xhosa version
	Rhodes University		
	1 <sup>st</sup> Lang Eng	1 <sup>st</sup> Lang Xhosa	1 <sup>st</sup> Lang Xhosa
Subjective Wellbeing:	15.7	<b>21.6</b>	15.7
Problems/ Symptoms:	16.1	<b>20.5</b>	14.0
Life Functioning:	12.5	<b>19.7</b>	16.1
Risk:	3.4	<b>6.4</b>	3.2
Non-risk items (28 items):	14.4	<b>18.9</b>	15.1
All items (34 items):	12.5	<b>16.6</b>	13.2

Clinical cut-off points for the CORE-OM Xhosa version across total and domain mean scores were commensurate with those obtained on the CORE-OM English version within the Rhodes University first language English speaking student sample, and consistently lower than those obtained by the Rhodes University first language Xhosa speaking student sample on the CORE-OM English version.

However as noted earlier differences in population scores cross-culturally cannot be taken at face value and assumed to represent true cultural differences, but rather interpretations must be substantiated by other empirical evidence (Van de Vijver & Hambleton, 1996). As a result the measurement and structural model of the South African CORE-10 was then investigated in order to establish equivalence across the two language versions and therefore allow for meaningful score comparison.

## 8.2 Equivalence of the South African CORE-10 English and Xhosa versions

### a) Sample demographics

A total of 253 CORE-OM Xhosa version questionnaires were completed by South African first language Xhosa speaking students during 2012. Of these questionnaires 224 (89%) were completed in full, 27 (11%) contained one item omitted, 2 (0.8%) contained two items omitted, and 10 (2.5%) were unusable due to omissions of 3 items or more, or omission of more than 1 item within the same domain. These figures are summarised in table 8.2.1. Thus, a total of 243 usable CORE-OM Xhosa version questionnaires were collected. Sample demographics are presented in table 8.2.2 in comparison with the South African first language English speaking student sample who completed the CORE-OM English version during 2010.

Table 8.2.1 Xhosa speaking sample using the CORE-OM Xhosa version

Total completed questionnaires:	All CORE-OM items completed:	1 item omitted:	2 items omitted:	3 items omitted:	Unusable: excess of three omitted:
253	224 (89%)	27 (11%)	2 (0.8%)	0 (0%)	10 (2.5%)

Table 8.2.2 Sample demographics of the first language Xhosa speaking sample on the CORE-OM Xhosa version and the first language English speaking sample on the CORE-OM English version

	1 <sup>st</sup> Lang Xhosa CORE-OM Xhosa version	1 <sup>st</sup> Lang English CORE-OM English version
n:	243	410
Age:	Range: 18-48 Mean: 22.4 years	Range: 18-47 Mean: 21.1 years
Sex:	Male: 120 (49%) Female: 123 (51%)	Male: 158 (39%) Female: 252 (61%)
Race:	White: 0 (0%) Black: 243 (100%)	White: 288 (70%) Black: 122 (30%)
Population:	Clinical: 49 (20%) Non-Clinical 194 (80%)	Clinical: 200 (49%) Non-Clinical: 210 (51%)

The first language Xhosa speaking student sample included 120 (49%) male students and 123 (51%) female students ranging in age between 18 and 48 years,

with a mean age of 22.4 years. The total sample was black and included 49 (20%) students sampled from a clinical population and 194 (80%) students sampled from the non-clinical population. The first language English speaking student sample included 158 (39%) male students and 252 (61%) female students ranging in age between 18 and 47 years, with a mean age of 21.1 years. Of the total sample 288 (70%) were white students and 122 (30%) were black students. This sample included 200 (49%) students sampled from a clinical population and 210 (51%) students sampled from the non-clinical population.

**b) Equivalence across the South African CORE-10 Xhosa and English versions**

This is a recursive model in that it only investigates the relationship of the South African CORE 10 questionnaire items on the construct of distress. Maximum likelihood was used to estimate parameters. Both the first language Xhosa and English speaking student samples met the first assumptions of adequate sample size for the analysis with a ratio in excess of 10 data entries for every 1 questionnaire item (Brown, 2006). The model, comprised of a first-order, single factor constituted by the 10 CORE questionnaire items with equal covariance across error values 1 and 6, aligns well with the theoretical underpinnings of the measure, drawing from the measurable outcomes indicated by the phase model of psychotherapy change (Howard et al., 1993) and therefore meets this second assumption.

However as with the data used during the validation and cross-validation of the South African CORE-10 English version, both the first language English and Xhosa speaking student samples violate the assumptions of continuous data and multivariate normality. Results of an investigation of multivariate normality across the two samples is presented in table 8.2.2. Multivariate normality was 35.92 for the first language Xhosa speaking sample and 26.96 for the first language English speaking sample, violating this assumption. Results indicate skewness and kurtosis in excess of one for item 16 across both samples, and kurtosis in excess of one for items 15 and 16 in the first language Xhosa speaking student sample, and items 5, 13, 18 and 27 in the first language English speaking sample. However most variables within the

South African samples fell within the skewness and kurtosis range of 1 and -1 indicating that Maximum Likelihood was a suitable method of analysis for this data in accordance with Muthen and Kaplan (1985).

Table 8.2.2 Multivariate normality of the first language English and Xhosa speaking samples

	1 <sup>st</sup> Language Xhosa sample		1 <sup>st</sup> Language English sample	
	Skewness	Kurtosis	Skewness	Kurtosis
Item 2	0.94	-0.13	-0.09	-0.95
Item 3	0.48	-0.89	0.81	-0.47
<b>Item 5</b>	0.50	-0.62	0.06	<b>-1.07</b>
Item 10	0.86	-0.27	0.67	-0.72
<b>Item 13</b>	0.51	-0.81	0.26	<b>-1.12</b>
<b>Item 15</b>	<b>1.09</b>	0.41	0.87	-0.40
<b>Item 16</b>	<b>5.17</b>	<b>28.13</b>	<b>3.91</b>	<b>12.6</b>
<b>Item 18</b>	0.68	-0.65	0.24	<b>-1.24</b>
<b>Item 27</b>	0.57	-0.78	0.13	<b>-1.19</b>
Item 32	0.21	-0.72	0.29	-0.89
<b>Multivariate normality</b>		<b>35.92</b>		<b>26.96</b>

The results of the investigation of equivalence of the South African CORE-10 across Xhosa and English language versions using Maximum Likelihood analysis are presented in table 8.2.3.

Table 8.2.3 Equivalence of the South African CORE-10 Xhosa and English language versions

	Model 1	Model 2 Constrained			Model 3 Constrained	Model 4 Constrained	Model 5 Constrained
	Unconstrained	Measurement weights			Measurement intercepts	Structural covariance	Measurement residuals
		Est:	S.E	P-val			
V2		0.690	0.05	<0.00			
V3		0.505	0.05	<0.00			
V5		0.775	0.05	<0.00			
V10		0.779	0.05	<0.00			
V13		0.836	0.05	<0.00			
V15		0.616	0.05	<0.00			
V16		0.208	0.03	<0.00			
V18		0.813	0.06	<0.00			
V27		1.00					
V32		0.703	0.05	<0.00			

Absolute fit:					
X <sup>2</sup>	x <sup>2</sup> (68) = 117.70, p < 0.00	x <sup>2</sup> (77) = 167.27, p < 0.00	x <sup>2</sup> (87) = 464.33, p < 0.00	x <sup>2</sup> (88) = 475.73, p < 0.00	x <sup>2</sup> (98) = 520.33, p < 0.00
CMIN/DF	1.731	2.172	5.337	5.406	5.310
Comparative					
RMSEA	0.034 (CI 90: 0.02-0.04)	0.042 (CI 90: 0.03-0.05)	0.082 (CI 90: 0.07-0.09)	0.082 (CI 90: 0.08-0.09)	0.081 (CI 90: 0.08-0.09)
CFI	0.976	0.956	0.818	0.813	0.796
Parsimony:					
PRATIO	0.756	0.856	0.967	0.978	1.089
PCFI	0.737	0.818	0.790	0.795	0.867
Sample size:					
CN	0.05 = 489 0.01 = 543	0.05 = 384 0.01 = 424	0.05 = 155 0.01 = 168	0.05 = 154 0.01 = 168	0.05 = 154 0.01 = 168

Chi-square goodness of fit tests were significant across all models, however an investigation of the parameter estimates indicated adequate estimates of regression weights, all significantly different from zero in conjunction with appropriate standard errors. Additional goodness of fit indices demonstrated very good absolute fit with low CMIN/DF values within the first two models, but poor fit across models 3-5. The RMSEA values, below 0.05, across the first two models, with concise confidence interval, and high CFI values indicated very good comparative fit. However fit was poor across models 3-5. Models were then compared for significant differences in order to establish the level of equivalence obtained. The relevant indices value changes across models for the South African CORE-10 Xhosa and English versions are presented in table 8.2.4.

Table 8.2.4 Comparison of models across South African CORE-10 Xhosa and English versions

	X <sup>2</sup>	Df	CFI	RMSEA (CI: 90%)	Δ X <sup>2</sup>	Δ CFI	Δ RMSEA
Measurement equivalence							
Configural equivalence	117.71	68	0.976	0.034 (CI 90: 0.02-0.04)			
Metric equivalence	167.27	77	0.956	0.042 (CI 90: 0.03-0.05)	5.5, df=9, p = 0.79	-0.020	-0.008
Scalar equivalence	464.33	87	0.818	0.082 (CI 90: 0.08-0.09)	29.71, df=10, p < 0.00	-0.138	+0.040

Differences in chi-square goodness of fit statistics ( $\Delta X^2$ ) were non-significant across the first two models and changes in RMSEA values remained below 0.015. While changes in CFI values were above 0.010, actual CFI values remained above 0.095 indicating very good model fit at measurement model level. However significant

differences were indicated in chi-square statistics across the measurement weight constrained model and the means and intercepts constrained model, indicating that only metric measurement equivalence was obtained across the South African CORE-10 Xhosa and English language versions. This finding indicates that while similar meanings are assigned to the construct of distress across the two language versions, the levels of the underlying items represented by their means and intercepts differ across the two language versions producing different measurement scales and making direct comparison of scores meaningless across the two language versions.

### c) Psychometric properties

A summary of the psychometric properties of the South African CORE-10 Xhosa and English versions as embedded measures within the CORE-OM Xhosa and English versions are presented in table 8.2.5. These results demonstrate very good reliability and validity of the South African CORE-10 English version within the first language English speaking student sample, and lower but still acceptable reliability and validity of the South African CORE-10 Xhosa version within the first language Xhosa speaking student population samples.

Table 8.2.5 Psychometric properties of the South African CORE-10 Xhosa version

	SA CORE-10 Xhosa			SA CORE-10 English		
	Total n= 243	Clinical n= 49	N-Clin n= 194	Total n= 410	Clinical n= 200	N-Clin n= 210
Reliability						
<b>Internal consistency</b> (Cronbach alpha)	0.77	<b>0.68</b>	0.71	0.87	0.83	0.82
Validity						
Discriminant	Mann-Whitney t-test			Student-t test		
	Difference p-value, Effect Size	M (SD)	M (SD)	Difference p-value, Effect Size	M (SD)	M (SD)
	p<0.00, ES 1.1	17.5 (6.2)	10.8 (6.0)	p<0.00, ES 1.3	19.6 (7.7)	10.5 (6.4)
Convergent with BDI (Spearman's Rho)	n= 21 0.71					
Clinical cut-off point	14.1			14.6		

### **8.3 Administrative and Scoring guidelines for the CORE-OM and CORE-10**

Having investigated the psychometric properties of the CORE-OM Xhosa version and established the degree of equivalence between the South African CORE-10 Xhosa and English versions, ITC guidelines recommend that researchers outline guidelines for the administration and scoring of the adapted measures (Hambleton, 2005). These guidelines are presented below as instructions to administrators of the tool.

#### **a) Administrative Guidelines**

The CORE-OM and South African CORE-10 Xhosa versions are adapted primarily for use within university student counselling centre contexts in order to assist clinicians and clients in conceptualising descriptions of distress in a manner congruent to the western psychiatric model currently drawn from in psychotherapy practice. As with the original UK referential data documented by Evans et al. (2002), data used to validate the CORE-OM and South African CORE-10 Xhosa versions was drawn from university student samples where clinical population sample participants were asked to complete the measure independently (without interaction with a clinician) before the initial intake interview.

As a result, in order to ensure standardised administration of the tools, either measure should be handed to the student before the initial intake interview, who is then asked to return the completed questionnaire either to the receptionist before entering the session or to the clinician at the start of the intake interview. In instances where either measure is being used to evaluate the change in level of distress during a psychotherapy process the CORE-OM or South African CORE-10 Xhosa version is then administered at each appropriate session as deemed necessary by the clinician.

Both measures have been qualitatively piloted on student members of the target population, psychologists and other Xhosa speaking professionals in order to investigate general readability and ease of use of the tool, as well as administrative instructions, response formats and item content.

## **b) Scoring Guidelines**

During adaptation of the CORE-OM into Xhosa minimal changes were made to the questionnaire in its English language version in order to improve comprehension and grammar within the tool when it was adapted into Xhosa. Because such changes can have an impact on the linguistic and conceptual meaning of questionnaire items these changes have been noted for administrators of the tool in its Xhosa language version. These changes included:

- Adding an additional sentence within the initial instructions section (“nendlela ozive ngayo nge-”) accompanied by a tick box to clearly demonstrate the instruction “Then tick the box which is closest to this”.
- Restructuring questionnaire items 17 (“Ndizive ndigutyungelwe ziingxaki zam”) and 25 (“Ndizive ndigxekiwe ngabanye”) from the passive English phrase (“I have felt overwhelmed by my problems” and (“I have felt criticised by others”) into the active voice (“My problems have overwhelmed me” and (“It has felt like others have criticised me”) before translation into Xhosa, in order to achieve grammatical and syntactical equivalence.
- Providing a descriptive, conceptually equivalent Xhosa phrase for questionnaire item 28 (“Imifanekiso-ngqondweni, okanye iinkumbulo ezingafunekiyo zindinxunguphalisile”) because of the lack of linguistically equivalent Xhosa vocabulary to convey the concept of traumatic “unwanted images”.

Scoring for the CORE-OM and South African CORE-10 Xhosa versions is outlined on the questionnaires. However the CORE-OM was designed originally as a crude measure of distress and scores should be interpreted with this purpose in mind. It is recommended that clinicians utilise all four CORE-OM scoring domain means in combination with the total and non-risk mean scores, recognising that the problems or symptoms and life functioning domains demonstrated the highest reliability and validity within the referential samples. Clinicians are encouraged to collaborate in the development of a database of CORE-OM Xhosa version response questionnaires in order to improve the representativeness of the current referential data.

The CORE-OM Xhosa version has been validated using an independent set of referential data, and equivalence with the original CORE-OM English version has not been investigated. The elevated CORE-OM mean scores produced by participants within the Xhosa version may likely be a result of a different measuring scale that inflated these scores. As a result score comparison across the two versions is not meaningful, and is not recommended. The South African CORE-10 has demonstrated measurement equivalence across its English and Xhosa language versions and is therefore recommended for use in clinician and research settings that require score comparisons across these language groups, within student samples.

Current referential data available for the CORE-OM and South African CORE-10 Xhosa versions is drawn from an Eastern Cape, historically disadvantaged university where participants were all first language Xhosa speakers. This sample is not representative of all Xhosa speaking students across South African University contexts. The dialect used within the measures may as a result influence the comprehension of certain questionnaire items that could impact on score reliability and validity. Additional research regarding the transportability of the CORE-OM Xhosa version to other mental healthcare contexts like state hospitals would need to be conducted in order to establish the degree of representativeness of the current referential data within these samples. It is likely that the dialect of the measure may require further adaptation in order to meet the needs of populations less familiar with western psychotherapy practices.

## **CONCLUSION**

An investigation of the psychometric properties of the CORE-OM Xhosa version within the combined University of Fort Hare, Nelson Mandela Metropolitan and Rhodes University clinical samples, and University of Fort Hare non-clinical sample indicated acceptable usability of the CORE-OM within this student population demographic. Internal consistency was acceptable except within the subjective wellbeing domain across both samples, and the risk domain within the non-clinical sample. The psychometric structure of the CORE-OM Xhosa version demonstrated some overlap with that of the CORE-OM English version but also considerable

differences. Discriminant and convergent validity were high. These results suggest promising psychometric properties of the CORE-OM Xhosa version particularly within the problems or symptoms and life functioning domains, however the subjective wellbeing and risk domains proved less reliable.

The South African CORE-10 demonstrated metric measurement equivalence across the two language versions and an investigation of psychometric properties indicated very good reliability and validity of the South African CORE-10 within the first language English speaking student samples, and lower but still acceptable psychometric properties of the South African CORE-10 Xhosa version within the first language Xhosa speaking student samples. Administrative and scoring guidelines for both the CORE-OM and South African CORE-10 Xhosa versions have been developed in order to assist in the meaningful use of both tools across South African student population samples in order to improve access to psychotherapy services for this population demographic.

## **CHAPTER 9: DISCUSSION**

This thesis has presented the argument that access to psychological resources and services is currently limited for African language speaking South Africans due to the legacies of Apartheid governance. While fairly overt language barriers exist within state mental healthcare contexts, more covert limitations are present at university student counselling centres. In attempting to improve access to psychological services South African mental healthcare training facilities have focused on increasing the selection of African language speaking candidates for training as psychologists, while the translation and adaptation of well developed and researched psychometric tools into African languages has been suggested as an additional strategy.

This thesis aimed to adapt the CORE-OM into a valid Xhosa measure of general distress, using current CORE System Trust translation and normalising guidelines (Evans, 2008) supplemented by ITC guidelines for psychometric tool adaptation (Hambleton, 2005), in order to assist in improving access to psychological services for Xhosa speaking students, in Xhosa at university student counselling centres. Results of this adaptation process, presented in the three preceding chapters, demonstrate three key points.

### **9.1 The relevance of the CORE-OM English version domains and questionnaire items as valid indicators of distress for first language Xhosa speaking students**

Firstly, the CORE-OM English version showed little construct bias and considerable construct equivalence across a UK population and South African first language English speaking student clinical and non-clinical samples, evident in the psychometric properties of usability, internal reliability and discriminant validity. These results suggest that the CORE-OM domains of subjective wellbeing, problems or symptoms, life functioning and risk, and each of their corresponding items were relevant and meaningful depictions of general distress within this population demographic. However, while the same measure demonstrated acceptable

psychometric properties of usability, internal reliability and discriminant validity within the South African first language Xhosa speaking student clinical and non-clinical samples across the problems or symptoms, life functioning and risk domains, the subject wellbeing domain proved more problematic. This domain demonstrated low internal consistency (Xhosa clinical sample  $\alpha = 0.64$ , Xhosa non-clinical sample  $\alpha = 0.66$ ) that fell below the 0.70 benchmark recommended by Nunnally and Bernstein (1994) with large confidence intervals, suggesting that the first language Xhosa speaking students were responding to the four subjective wellbeing domain questionnaire items in an inconsistent manner. This finding suggests that these items were not measuring the same domain in a meaningful way.

The subjective wellbeing domain comprises four questionnaire items (4. "I have felt OK about myself"; 14. "I have felt like crying"; 17. "I have felt overwhelmed by my problems"; and 31. "I have felt optimistic about my future") that refer to an evaluation of wellbeing relating to the individual as an independent and autonomous self. Referring back to Kleinman's (1977) explanatory model of illness or distress, and the emphasis he places on the influence an individual's culture has on how distress is conceptualised, these inconsistencies in responses to the above mentioned CORE-OM English questionnaire items across first language Xhosa speaking students, in comparison with their first language English speaking counterparts, may be manifestations of differences in the way in which these two language groups conceptualise distress based on different cultural philosophies. As was highlighted in Chapter 2 of this thesis, the Xhosa culture draws from the philosophy of Ubuntu (Louw, 2001) with an emphasis on inter-relatedness. As a result the conceptualisation of self is likely to be more interdependent with a focus on the importance of being in successful relationship with others, as opposed to a more independent conceptualisation of self with a focus on successful autonomy (Markus & Kitayama, 1991).

As highlighted by Drennan et al., (1990) South African psychological services and resource material draw from a western psychiatric model of conceptualising distress in emotional or affective terminology, but this model also draws from a conceptualisation of self that is independent and striving for autonomy. The present assumption is that these conceptualisations are transportable across different South

African cultural groups. However the low internal consistency within the subjective wellbeing domain may likely be the result of first language Xhosa speaking students drawing from a culturally specific conceptualisation of distress that relies on a more interdependent self where descriptions of feeling “ok about myself”, “overwhelmed by my problems” and “optimistic about my future” are not as meaningful indicators of subjective wellbeing, and therefore distress, as descriptions that draw from a more inter-related conceptualisation of self.

During reduction of the CORE-OM into the South African CORE-10, only items that demonstrated similar item-total correlations within domains, across both first language English and Xhosa speaking students were selected for inclusion in the questionnaire resulting in a general measure of distress that demonstrated scalar equivalence across first and second language English speakers, allowing for meaningful score comparison across these two language groups. However full structural equivalence was not achieved within this English language version, suggesting that despite this preventative step, there were once again differences in the conceptualisation and understanding of distress as indicated by the 10 items included within the measure, across the two language groups (Van de Vijver & Leung, 1997). This finding further supports Drennan et al.’s (1991) observation that the current conceptualisation of distress, drawing from a western psychiatric model, is not necessarily applicable across all South African language groups.

In addition this finding highlights a limitation of this current research project in that the investigation of construct bias and equivalence conducted in this thesis was not typical of standard investigations of this type. Van de Vijver and Leung (1997) recommend a qualitative piloting process whereby individuals from the target language are asked to comment on their experiences of the construct under investigation, how this construct manifests and is spoken about, and what would be meaningful ways of measuring this construct within that target population. The qualitative investigation within this research project focused predominantly on the relevance and meaningfulness of the CORE-OM English version as a measure of distress within the South African first language Xhosa speaking student population samples. This investigation did not focus on exploring other domains of distress and their manifestations that may be relevant in a Xhosa speaking student population

sample, and therefore need consideration and inclusion in a measure like the CORE-OM.

During preliminary discussions exploring the adaptation of the CORE-OM into Xhosa, translators in the committee meetings, as well members of the qualitative reviews (students and lecturers from the Xhosa III class, and the psychologists) identified the considerable need for psychological measures of distress that improved accessibility to psychological services for Xhosa speaking individuals. As a result the translation of the CORE-OM into Xhosa was received with enthusiasm, as well as positive feedback about its relevance and meaningfulness within this population sample.

In addition, feedback from translators, noting their ability to find conceptually equivalent Xhosa phrases for the CORE-OM English items, was considered as evidence of the overlap of the construct of distress, as measured by these items, across the South African English and Xhosa speaking population samples. As a result, the researcher did not explore other potential manifestations of distress that may be considered meaningful within this population demographic.

This negation resulted in Kleinman's (1987) category fallacy whereby a western conceptualisation of psychological distress embodied in the CORE-OM as a measure of distress drawing from the domains of subjective wellbeing, problems or symptoms, life functioning and risk in line with Howard et al.'s (1993) phase model of psychotherapy outcome, was imposed onto a first language Xhosa speaking student demographic negating alternative conceptualisations and manifestations of psychological distress that may have been more meaningful to this group. This limitation has implications for the sensitivity (ability to correctly detect psychological distress) and specificity (ability to minimise the false detection of distress in its absence) of the measure (Connell et al., 2007b). The CORE-OM will only detect distress as described within the domains theoretically drawn from to establish the measure.

However because the CORE-OM English version is a measure of general distress comprised of these four broad domains, investigation of all 34 items allowed for the

identification of a core set of items that did demonstrate consistency across language use. Further research is required in order to establish additional domains of conceptualising distress from the perspective of Xhosa speaking students that could be added to these core items to develop a measure that is adequately sensitive to the manifestation of distress within this particular Xhosa language group.

For example, in line with Van de Vijver and Leung's (1997) recommendations, a more qualitative and ethnographic methodological approach may be helpful in investigating how psychological distress is experienced by first language Xhosa speaking students in terms of the experiences identified as distressing, using the English and Xhosa vocabulary naturally drawn from to describe these experiences. The aim of the exercise would be to generate alternative domains of conceptualising and measuring distress that are more culturally relevant, thus improving the sensitivity and specificity of the current CORE-OM and SA CORE-10 as measures of general distress within this population demographic. It must be noted though that students are a specific population group and that the results of this research may not generalise to less educated, older or younger, poorer socio-economic groups or groups of Xhosa speaking people living in more rural contexts, and additional cross validation studies would be necessary to examine the transportability of these domains.

## **9.2 Developing a Xhosa psychological language**

Secondly, during the translation process numerous changes were made to vocabulary selected at each stage of the translation design, as is demonstrated in tables 7.1.1 and 7.3.3, of Chapter 7. These tables illustrate the influence of the history of the Xhosa language as an oral dialect, lacking the standardisation that languages with prolonged written histories enjoy. In addition they highlight the lack of a standardised Xhosa psychological language. As a result it was very difficult to obtain consensus across the translation team for vocabulary selection. This observation was reported in previous translation research conducted by Drennan et al. (1991), Smit et al. (2006) and Steel and Edwards (2008a), highlighting the lack of linguistically equivalent vocabulary available in the Xhosa language to support the current western psychiatric model of conceptualising and describing distress using

emotive or affective terminology within the English language. It also highlights the considerable difficulties Xhosa speaking psychologists and their clients face when attempting to apply this western psychiatric model of conceptualising distress within psychotherapy interventions conducted in Xhosa.

Referring back to Flaherty et al.'s (1988) different forms of equivalence or validity that require attention during translation work, it is evident from tables 7.1.1 and 7.3.3 that semantic equivalence or consistency in word meanings across the English and Xhosa language was difficult to obtain. As noted previously semantic equivalence is closely related to Sechrest et al.'s (1972) concepts of linguistic, idiomatic and grammatical and syntactical equivalence. Idiomatic equivalence only pertained to two questionnaire items (items 10. "Talking to people has felt too much for me", and 20. "My problems have been impossible to put to one side"), because of the decentring process that had occurred during the development of the CORE-OM initially (Barkham et al., 2001; Evans et al., 2000) resulting in the use of only two idioms within the questionnaire. Finding the equivalent English descriptions for the idioms generated some debate during each translation step (as is evident in the changes that were made to these items in each column of table 7.3.3) however once consensus was obtained relating to the English explanations of the idioms, adequate Xhosa translations were obtained.

Initially the idiom "has felt too much for me" was replaced with the English description "too heavy" during the committee meetings and then translated into the Xhosa "Ukuthetha nabantu kuvakele". However this translation choice was challenged during the first qualitative review and the English descriptions of "overwhelming" or "very difficult" were considered more appropriate, resulting in the Xhosa translation "Bekunzima ukuthetha nabantu". This sentence was then changed in the second qualitative review from the past ("Bekunzima") into the present ("Kunzima") tense. While the idiom "impossible to put to one side" was initially replaced with the English "putting the problem out of my way" ("Kubenzima ukubeka iingxaki zam ecaleni") during the second committee meeting, and then to "my problem has overwhelmed me" ("zam ndawonye") during the third committee meeting. Although this translation choice was challenged during the first qualitative review and replaced with the initial Xhosa "ecaleni" again.

Grammatical and syntactical equivalence was also fairly easily obtained due to the short, simple phrases used within the CORE-OM English version questionnaire that were predominantly phrased in the active voice. Only two questionnaire items (items 17. “I have felt overwhelmed by my problems”, and 25. “I have felt criticised by others”) required rephrasing into the active voice (“My problems have overwhelmed me” and “It has felt like others have criticised me”) before translation into Xhosa. This rephrasing took place during the first qualitative review accounting for the changes made to these items in table 7.3.3.

However, linguistic equivalence was more challenging to achieve across the English and Xhosa languages as was evident in both the initial forward translations of the CORE-OM into Xhosa, documented in table 7.1.1 and in the summary of all changes made during the translation process, in table 7.3.3. For example translators found it difficult to reach consensus on the most appropriate Xhosa vocabulary choices for “isolated” in item 1 (ndingenabomi – “do not have a life”, ndingahoyekanga – “uncared for”, ndililolo – “lonely” or ndilikheswa – “alone”); “enthusiasm” in item 5 (nenzondelelo – “concentration”, nochilimanco – “energy” or ndingenamdla – “power”); “panic” in item 15 (ndinophaphazela – “fright”, ndinoloyiko – “very scared”, or ndinongxunguphalo – “very frightened”); “warmth” in item 19 (ubushushu – “warmth”, ndinothakazelelo – “caring”, or ndinomdla – “excitement”); “despairing” and “hopeless” in item 23 (ndaziva ndingenathemba – “hopeless”, ndingento – “useless”, ndiphelelwe – “hopeless” or ndinikezele – “hopeless”); “optimistic” in item 31 (ndilindele – “waiting for the best”, Bendibona ingomso lam lilihle – “see myself with a bright future” or ndinethemba – “hope for the future”); and “humiliated” and “shamed” in item 33 (ndithotyelwe – “looked down on”, ndiyintlekise – “like a joke”, ndingeyonto – “useless”, or ndiphoxiwe – “disgraced”; and ndinodano – “disapproved of”, ndinyunyezwa – “to be laughed at” or ndinyeliswa – “embarrassed”).

These examples highlight the lack of directly equivalent emotional or affective vocabulary easily accessible within the Xhosa language, that conceptualises and describes distress within a similar way as the English language. Through continued discussion and debate, translators were eventually able to find consensus on appropriate Xhosa translation choices for all the CORE-OM questionnaire items, however it was a lengthy and complicated process. The challenges highlighted

during this translation process again emphasise the difficulties faced by Xhosa speaking psychologists and their clients when attempting to apply this western psychiatric model of conceptualising distress.

Currently Xhosa speaking psychologists continue to be trained within a western psychiatric model of conceptualizing distress in emotional vocabulary, which is clearly not always well supported in the Xhosa language. Adapted measures like the CORE-OM and South African CORE-10 Xhosa versions can provide these psychologists and their clients with tools that conceptualise distress within this western psychiatric model using Xhosa vocabulary. Continued use and development of such tools could lead to a psychological Xhosa language that could become more standardized and therefore improve access to psychotherapy services for these clients.

However continued research is necessary in order to develop more culturally sensitive measures that align more closely with the Xhosa language and related conceptualizations and descriptions of distress, in order to avoid Kleinman's (1987) category fallacy. In particular Flaherty et al.'s (1988) content validity, referring to the use of questionnaire items that are relevant and meaningful within the life experiences of the target population, akin to Sechrest et al.'s. (1972) experiential equivalence, is of critical importance. As highlighted in section 9.1 the subjective wellbeing domain of the CORE-OM English version demonstrated low internal consistency within the first language Xhosa speaking student samples suggesting low content validity of these items. This finding indicates that different depictions of wellbeing may be more meaningful within the Xhosa language, or that additional or different domains may be more relevant in conceptualising distress within this language and cultural group.

Flaherty et al. (1988) go on to highlight that questionnaire items should elicit responses that are meaningful in light of the construct those items have been designed to measure, in the target population. However the use of an independent conceptualisation of self to evaluate distress in a language and culture that does not support this conceptualisation has implications for the criterion validity of these questionnaire items. Essentially the items selected to measure subjective wellbeing

may not be conceptualising the domain in the most meaningful way for this language and cultural group. This observation has implications for the conceptual equivalence of distress across the English and Xhosa language (Flaherty et al., 1988).

Cross-cultural personality research has recently begun to draw on the lexical approach in conceptualising personality across different cultural groups (Ashton & Lee, 2005). Ashton and Lee (2005) explain that by identifying personality related descriptive words or adjectives within a particular language, that are familiar to the mother tongue speakers of the language, researchers have been able to identify personality structures that are most dominant and therefore of most importance within that language and cultural group. Instead of imposing a conceptualisation of personality onto a language and culture, this approach identifies domains of personality that are relevant and meaningful within a culture, indicated by the language used to conceptualise and describe that construct.

A similar approach to identifying conceptualisations of distress within the Xhosa language would allow for the identification of additional, meaningful domains for conceptualising distress for Xhosa speaking clients. This research would complement the CORE-OM and South African CORE-10 Xhosa versions and provide tools that would further assist Xhosa speaking psychologists and clients in conceptualising and describing distress in ways that are complementary and supported by the Xhosa language and culture. These tools would also improve access to psychological services within state mental healthcare contexts.

However, as indicated by the translation team in Chapter 6, psychometric measures contain particular response formats that are familiar to students but may well be difficult to use within less educated or literate population groups. In addition the Xhosa language comprises of numerous dialects that change depending on geographic region and rural or urban contexts, influencing vocabulary selection. Finally, while students may be familiar with psychological services and the discourse associated with this form of health intervention, individuals from lower socio-economic strata, or older and younger groups may be less familiar with and find this way of conceptualising and describing distress difficult to relate to. As a result psychometric measures would likely require additional adaptation in order to ensure

their relevance within Xhosa groups of varying education levels, ages, socio-economic levels and rural or urban living contexts.

### **9.3 The influence of the Xhosa language and culture on the conceptualisation and descriptions of distress**

Thirdly, the quantitative piloting of the CORE-OM Xhosa version revealed good psychometric properties of the measure in terms of readability and ease of use, as well as high discriminant and convergent validity. However, while internal consistency across the problems or symptoms and life functioning domains was high, the subjective wellbeing and risk domains proved more problematic. Within the first language Xhosa speaking samples internal reliability for the subjective wellbeing domain ( $\alpha = 0.51$  for the clinical sample, and  $0.62$  for the non-clinical sample) fell well below Nunnally and Bernstein's (1994)  $0.70$  benchmark with large confidence intervals, as did the internal reliability for the risk domain within the non-clinical sample ( $\alpha = 0.59$ ).

These results highlight that despite a rigorous translation design, utilising different translation methods, implemented by multiple translators, skilled across Xhosa linguistics and psychology, it was not possible to obtain linguistically and conceptually equivalent Xhosa translations for all CORE-OM questionnaire items, specifically items within the subjective wellbeing domain as is evident in tables 7.1.1 and 7.3.3 in Chapter 7. For example item 4 ("I have felt OK about myself") was translated into "Ndizive ndilungile ngesiqu sam" (I felt right about myself, I was content with myself) and "Bendizithanda" (I loved myself). While item 17 ("I have felt overwhelmed by my problems") was translated into "Ndikhe ndaziva ndisindwa zingxaki zam" (I felt overloaded by my problems), "Ndizive ndoyisiwe zingxaki zam" (My problems and burdens were too much for me), "Bendixakene neengxaki zam" (I couldn't solve my problems). Item 31 ("I have felt optimistic about my future") was translated into "Ndikhe ndaziva ndilindele okuhle kwikamva lam" (I am waiting for the best in my future), "Ndizive ndinethemba ngengomso lam" (I have hope for the future), "Bendibona ingomso lam lilihle" (I see myself with a bright future"). These difficulties impacted on the linguistic equivalence of these items

As highlighted by Westermeyer and Janca (1997) language supports the expression of certain descriptions of distress while obstructing other descriptions. The vocabulary available within a language determines how a construct is conceptualised and described. Because culture shapes the way language is used to conceptualise feelings, thoughts and behaviours, the terms and experiences used to describe psychological distress vary considerably across languages making it difficult to find linguistically and conceptually equivalent terminology. These conceptualisations and descriptions are further influenced by the cultural context that determines acceptable manifestations and experiences of distress and the suppression of less unacceptable manifestations (Kleinman, 1987).

The interdependence of the Xhosa culture emphasised through the Ubuntu philosophy has shaped the development of the Xhosa language, providing vocabulary that promotes the conceptualisation and descriptions of experiences in line with this philosophy. However the items included within the subjective wellbeing domain of the CORE-OM Xhosa version may be incongruent with the underlying cultural ideology of the Xhosa people and their conceptualisation of subjective wellbeing. As a result it was difficult to find appropriate vocabulary choices to achieve linguistic and conceptual equivalence of these items across English and Xhosa language versions, accounting for the low internal consistency of these items across both the first language Xhosa speaking clinical and non-clinical samples who responded to the CORE-OM Xhosa version.

In comparison, translators were eventually able to produce linguistically and conceptually equivalent descriptions of distress for many items within the problems or symptoms domain despite the use of emotional or affective terminology in majority of these items. Previous research has indicated that more concrete examples and descriptions of distress or physical and somatic manifestations have proved more successful during translation from English into Xhosa than more abstract, emotional vocabulary (Drennan et al., 1991). Many items within the problems or symptoms domain of the CORE-OM draw from these concrete examples of distress (e.g.: I have felt tense, anxious or nervous; Tension or anxiety have prevented me from doing things; My problems have been impossible to put to one side; I have felt totally lacking in energy and enthusiasm; I have thought I am to blame for my problems and

difficulties ), as well as more physical or somatic manifestations (e.g.: I have been troubled by aches, pains or other physical problems; I have difficulty getting to sleep or staying asleep) which may account for the high internal reliability of these items across both the clinical and non-clinical samples. Although, as noted in section 9.2, it took considerable discussion and debate to find appropriate Xhosa phrases for questionnaire items that contained more emotional or affective English terminology.

Internal consistency within the life functioning domain of the CORE-OM Xhosa version was also high. Items within the life functioning domain deal predominantly with social relationships (e.g.: I have felt terribly alone and isolated; I have felt I have someone to turn to for support when needed; I have thought I have no friends; I have felt humiliated or shamed by other people; I have felt criticised by other people). A review of tables 7.1.1 and 7.3.3 indicate that while changes were made to many of the life functioning domain items throughout the translation process the initial Xhosa translations generated for each item in table 7.1.1 were fairly similar in content and meaning, showing far more consensus for these items across the two language versions.

For example item 3 (“I have felt I have someone to turn to for support when needed”) was translated into “Ndizive ndinaye umntu onokundixhasa xa ndidinga” (I felt like I have someone who can support me when I need it), “Ndizive ndinomntu endikubhenela kuye ukuze ndifumane inkxaso xa ndiyifuna” (I have someone to rely on and get the support I want), “Ndibenomntu wokundinceda” (I have someone to help me). Item 12 (“I have been happy with the things I have done”) was translated into “Ziyandivuyisa izino endizenzileyo” (I am happy about the things I have done), “Bendonwabile zizinto endizenzileyo” (I was happy with the things I had done). Item 26 (“I have thought I have no friends”) was translated into “Ndikhe ndacinga ukuba andinazo izihlobo” (I have thought that I don’t have friends), “Ndicinge ukuba andinabahlobo” (I felt like I did not have friends), “Ibingathi andinabahlobo” (It was as if I had no friends”). The relational connectedness emphasised within the life functioning items, as indicators of personal distress through the quality of social relationships with others aligns very well with the philosophy of Ubuntu and the cultural ideology underpinning the Xhosa language. As a result items within this

domain demonstrated high internal reliability across both the clinical and non-clinical samples.

Within the risk domain, items describe intense feelings of self hatred and self harm (e.g.: I have thought of hurting myself; I have made plans to end my life; I have thought it would be better if I were dead; I have hurt myself physically or taken dangerous risk with my health) in addition to harm towards others (e.g.: I have been physically violent to others; I have threatened or intimidated another person). Within the Ubuntu philosophy spirituality, and the interplay between spiritual, mental and physical wellbeing in influencing psychological functioning, is fundamental (Laher, 2008, Louw, 2001). These intense descriptions of self hatred and harm towards others are incongruent with the cultural ideology of the society and are not socially acceptable conceptualisations and descriptions of distress, which may be a reason for the low internal reliability recorded for this domain within the non-clinical sample.

In his work in sub-Saharan Africa De Jong (2011) noted the taboo surrounding suicidality within African cultures. He explains that the act of suicide prevents a soul from joining the ancestors preventing the possibility of reincarnation in future generations. The soul may react by becoming a revengeful spirit that attacks the living. This belief frames the act of suicide and suicidal ideation as culturally unacceptable, influencing how it is spoken about and reported. Patel (2001) notes that globalisation has resulted in the integration of many different cultures and that individuals are free to choose to what extent they wish to incorporate particular cultural beliefs and practices within their daily lives. This is particularly relevant for university students who are exposed to a multitude of cultures and beliefs on campus, however language remains intertwined within a particular culture, supporting the culturally specific conceptualizations and expressions of distress within that culture, while suppressing culturally unacceptable expressions. As a result, while the taboo of suicidality may be embedded in traditional beliefs, the social unacceptability of the action remains embedded in the language of the culture. However the high internal reliability demonstrated by this same domain within the clinical sample highlights its relevance as a depiction of distress for this sample and the need to acknowledge and validate this manifestation of distress.

## **IN SUMMARY**

A review of the internal reliability demonstrated across each of the CORE-OM Xhosa version domains highlights the considerable influence that language and culture has in shaping the conceptualisation and descriptions of distress, even within a university student sample who are familiar with and acculturated to a more western, individualistic, university institutional culture. The Xhosa language, influenced by the Ubuntu philosophy that underpins its cultural ideologies, dictates socially acceptable conceptualisations and descriptions of distress while suppressing less acceptable depictions, incongruent with the philosophical underpinnings of the culture. While the problems or symptoms, and life functioning domains have been shown to be meaningful indicators of distress within the samples used for this study, continued research is required in order to identify additional, culturally relevant domains of distress that are meaningfully supported by the Xhosa language, in order to assist clinicians and clients in negotiating a shared discourse of distress in Xhosa that will improve access for Xhosa speaking clients to psychotherapy resources and services.

## CHAPTER 10: CONCLUSION

This thesis presented the argument that within university student counselling centres access to psychological services are limited for first language Xhosa speaking students. The culturally sensitive adaptation of self report inventories like the CORE-OM into Xhosa was proposed as one method of improving access to these services. The adapted CORE-OM Xhosa version would also provide a means of evaluating the effectiveness of psychotherapy interventions conducted at these centres in Xhosa. As a result this thesis aimed to adapt the CORE-OM into a valid Xhosa measure of general distress, using current CORE System Trust translation and normalising guidelines (Evans, 2008) supplemented by ITC guidelines for psychometric tool adaptation (Hambleton, 2005). A mixed method approach was used whereby the construct bias and equivalence of the original CORE-OM English version was first investigated. The tool was then translated into Xhosa using a five-step translation design that included forward- and back-translation, a committee approach, three qualitative reviews and a quantitative piloting process. A large, bilingual translation team was used, including professional translators, Xhosa linguists, first language Xhosa speaking psychologists and university students.

The results indicate that while the CORE-OM English version showed excellent transportability, evident in sound psychometric properties of usability, internal reliability and discriminant validity across a first language English speaking student sample, problems were evident with regards to internal reliability within the subjective wellbeing domain when responded to by first language Xhosa speaking students. This finding suggests some construct equivalence of the CORE-OM English version across a first language Xhosa speaking student sample, but also some areas of difference. This finding was further confirmed when the CORE-OM was reduced to the South African CORE-10 and only achieved measurement equivalence across first and second language English speaking students.

During the translation process translators demonstrated difficulty finding linguistically and conceptually equivalence Xhosa phrases for CORE-OM items, particularly those within the subjective wellbeing domain, and those containing emotional or affective English terminology. During the quantitative piloting of the CORE-OM Xhosa version

the measure demonstrated very good transportability with regards to sound psychometric properties of usability, discriminant and convergent validity, particularly within the problems or symptoms and life functioning domains, however internal reliability proved problematic within the subjective wellbeing and risk domains.

These results highlight the current assumption underpinning the conceptualisation of distress using a western psychiatric model that utilises emotional or affective terminology and an independent conceptualisation of self. However the process of translating the CORE-OM into Xhosa has highlighted the difficulty in finding linguistically and conceptually equivalent Xhosa vocabulary to support this western psychiatric model of distress, emphasising the difficulties faced by Xhosa speaking psychologists and their clients when attempting to access psychological services that draw from this model, in the Xhosa language. While the CORE-OM and South African CORE-10 Xhosa versions are valuable tools that will assist clinicians and clients in conceptualising distress within this western psychiatric model using the Xhosa language, and hopefully assist in establishing a more standardised Xhosa psychological language in the future, more culturally appropriate conceptualisations and descriptions of distress are necessary in order to improve access for Xhosa speaking students to psychological services.

As a result future research is recommended applying a lexical approach to understanding how distress is spoken about, conceptualised and described within the Xhosa language by university students. This qualitative data could then be used to identify additional domains of conceptualising distress that are culturally sensitive and relevant to this population demographic, that would complement the current CORE-OM and South African CORE-10 Xhosa versions as measures of general distress, increasing the sensitivity and specificity of these tools. The resultant inventories could then be cross-validated on different age groups, socio-economic strata, education levels and rural and urban contexts. Furthermore the translation design used to adapt the CORE-OM into Xhosa could be applied in developing other African language versions of the tool. However the current limitations of this study should be noted and used to improve the research design applied in future research.

The most significant limitation within this study is the category fallacy that occurred as a result of the lack of sufficient qualitative, ethnographic investigations of the construct equivalence of the CORE-OM within the first language Xhosa speaking student samples initially. As emphasised by Van de Vijver & Leung (1997) the adaptation process should begin with a thorough qualitative investigation of how the construct is conceptualised, experienced and described within the target population and language group in order to establish the degree of adaptation necessary in order to produce an equivalent language version of that tool with the necessary clinical sensitivity and specificity in order to be clinically useful.

In addition the data used to substantiate these research findings was limited to a cross-sectional study of a sample of university students registered at Rhodes University, the Nelson Mandela Metropolitan University and the University of Fort Hare. These universities are not representative of all universities in South Africa, although they do represent an historically white, advantaged university, an historically black and disadvantaged university and a bilingual institution. However further research in different university student samples, across different university contexts would be needed in order to further generalise these results.

Furthermore the target population for this adaptation was a university student population comprising of a group of young individuals who, although having lived with the legacies of Apartheid, have also been exposed to improved educational opportunities that have assisted in literacy and language skills. As a result this South African CORE-10 Xhosa version may well be valid within this student population but may not be transportable to older generations who have not received the same level of education or been exposed to the same urban dialects. In addition age was not explored as a demographic during this adaptation process because a student sample is restrictive in age, however it would be an essential element to investigate in exploring the transportability of the measure in other contexts and population demographics.

The South African CORE-10 Xhosa version produced from the thesis would benefit from use in other student counselling centres in provinces outside of the Eastern Cape in order to investigate its transportability across geographical regions. In

addition it would be valuable to investigate the transportability of the measure across different population demographics that extend beyond student population samples. In terms of its use as an outcome measure, it would be necessary to evaluate the effectiveness of the South African CORE-10 Xhosa version in measuring the effects of different psychotherapies conducted in Xhosa. Following this investigation it would be beneficial to begin establishing which psychotherapies are most effective when conducted in Xhosa.

In conclusion Swartz (1998, pp.41) emphasises that an adapted psychometric tool must “serve the clinical purpose [the psychometric tool was designed for] as well as it can.” Evans (2008, pp.1) agrees, adding that the adaptation of the CORE-OM for international use should focus on “capturing the heart” of the measure and thus improving accessibility to mental healthcare services by a varied group of mental healthcare users who experience the psychometric tool as a medium through which clearer communication about personal psychological distress is possible.

The purpose of adapting the CORE-OM into Xhosa was to provide a self report measure that would improve access for Xhosa speaking students to psychological resources in Xhosa within university student counselling centres, and to provide an outcome measure to evaluate the effectiveness of psychological interventions conducted in Xhosa at these centres. The South African CORE-10 Xhosa version provides such a measure.

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(Appendix A)

**REGISTERED NURSES WITH SPECIALIST SKILLS IN MENTAL HEALTHCARE**  
**WANTED FOR PRIVATE TRANSLATION WORK**

- TWO FIRST LANGUAGE ISIXHOSA SPEAKING NURSES NEEDED WHO ARE ALSO BILINGUAL ENGLISH SPEAKERS

TASK:

- TO TRANSLATE A 34-ITEM QUESTIONNAIRE FROM ENGLISH INTO ISIXHOSA AND THEN FROM ISIXHOSA BACK INTO ENGLISH
- TO TYPE OUT THE TRANSLATION AND EMAIL THE FINISHED PRODUCT THROUGH TO ME
- TO ATTEND A TWO HOUR GROUP DISCUSSION AFTER THE TRANSLATION HAS BEEN COMPLETED, ON A DAY AND TIME CONVENIENT TO ALL MEMBERS

PLEASE CONTACT MEGAN CAMPBELL ON **076 318 2739** IF INTERESTED

**C**LINICAL  
**O**UTCOMES in  
**R**OUTINE  
**E**VALUATION

**OUTCOME  
MEASURE**

Site ID	<input type="text"/>	Age	<input type="text"/>	Male	<input type="checkbox"/>
letters only	<input type="text"/>	numbers only	<input type="text"/>	Female	<input type="checkbox"/>
Client ID	<input type="text"/>	Therapist ID	<input type="text"/>	Stage Completed	
	<input type="text"/>	numbers only (1)	<input type="text"/>	S Screening	Stage
	<input type="text"/>	numbers only (2)	<input type="text"/>	R Referral	<input type="checkbox"/>
Sub codes	<input type="text"/>			A Assessment	
D D / M M / Y Y Y Y	<input type="text"/>			F First Therapy Session	
Date form given	<input type="text"/>			P Pre-therapy (unspecified)	
				D During Therapy	
				L Last therapy session	Episode
				X Follow up 1	<input type="checkbox"/>
				Y Follow up 2	

**IMPORTANT - PLEASE READ THIS FIRST**

This form has 34 statements about how you have been **OVER THE LAST WEEK**.  
Please read each statement and think how often you felt that way last week.  
Then tick the box which is closest to this.  
*Please use a dark pen (not pencil) and tick clearly within the boxes.*

**Over the last week**

	Not at all	Only Occasionally	Sometimes	Often	Most or all the time	OFFICE USE ONLY
1 I have felt terribly alone and isolated	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> F
2 I have felt tense, anxious or nervous	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> P
3 I have felt I have someone to turn to for support when needed	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/> F
4 I have felt O.K. about myself	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/> W
5 I have felt totally lacking in energy and enthusiasm	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> P
6 I have been physically violent to others	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> R
7 I have felt able to cope when things go wrong	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/> F
8 I have been troubled by aches, pains or other physical problems	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> P
9 I have thought of hurting myself	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> R
10 Talking to people has felt too much for me	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> F
11 Tension and anxiety have prevented me doing important things	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> P
12 I have been happy with the things I have done.	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/> F
13 I have been disturbed by unwanted thoughts and feelings	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> P
14 I have felt like crying	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> W

**Please turn over**

Over the last week

Not at all    Only Occasionally    Sometimes    Often    Most or all the time    OFFICE USE ONLY

15	I have felt panic or terror	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
16	I made plans to end my life	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
17	I have felt overwhelmed by my problems	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	W
18	I have had difficulty getting to sleep or staying asleep	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
19	I have felt warmth or affection for someone	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
20	My problems have been impossible to put to one side	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
21	I have been able to do most things I needed to	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
22	I have threatened or intimidated another person	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
23	I have felt despairing or hopeless	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
24	I have thought it would be better if I were dead	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
25	I have felt criticised by other people	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
26	I have thought I have no friends	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
27	I have felt unhappy	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
28	Unwanted images or memories have been distressing me	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
29	I have been irritable when with other people	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
30	I have thought I am to blame for my problems and difficulties	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
31	I have felt optimistic about my future	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	W
32	I have achieved the things I wanted to	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
33	I have felt humiliated or shamed by other people	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
34	I have hurt myself physically or taken dangerous risks with my health	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R

THANK YOU FOR YOUR TIME IN COMPLETING THIS QUESTIONNAIRE

**Total Scores**

**Mean Scores**  
(Total score for each dimension divided by number of items completed in that dimension)

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	→	<input type="text"/>	→	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		<input type="text"/>		<input type="text"/>
(W)	(P)	(F)	(R)		All items		All minus R

(Appendix E: Translation Guidelines)

Dear translator,

Thank you for participating in this translation project. Your involvement will improve the quality and validity of the resultant, final translated version of the CORE-OM in isiXhosa, allowing for its application in student counselling centres across the Eastern Cape that cater for first-language isiXhosa speaking students.

Attached to this letter is a copy of the original CORE-OM English version. Using this copy please perform a forward translation into isiXhosa, maintaining the structure and layout of the CORE-OM questionnaire. Please include the translation of instructions.

While translating, please adhere to the following guidelines that will assist in standardising the translation process.

1. Use short, simple sentences, choosing specific terms as opposed to vague descriptions, while applying the active as opposed to the passive voice and avoiding pronouns, metaphors and colloquialisms.
2. Focus on achieving word to word equivalence wherever possible using vocabulary that is widely applicable across isiXhosa dialects, drawing from written as opposed to more colloquial, spoken versions of the language.

Kind regards

Megan Campbell



**RHODES UNIVERSITY**  
Grahamstown • 6140 • South Africa

7<sup>th</sup> July 2011

DEPARTMENT OF PSYCHOLOGY

P O Box 94, Grahamstown, 6140

Tel: +27 (0)46 603 8500/1

Fax: +27 (0)46 622 4032

Web page: <http://www.rhodes.ac.za/academic/department/psychology>

TO WHOM IT MAY CONCERN

This document certifies that the proposal detailed below was granted ethical clearance by the Rhodes University Psychology Department's *Research Projects and Ethics Review Committee (RPERC)* on 18<sup>th</sup> March 2010. This committee is constituted of senior researchers in the Psychology Department, and each proposal is independently reviewed by three reviewers who recommend amendments to ethics documentation and the scientific arguments presented in the research proposal.

The proposal was also subsequently approved by the Rhodes University Humanities Faculty *Higher Degrees Committee* on the 20<sup>th</sup> April 2010. This is the final institutional stamp of approval for the study to proceed.

**Title:** Translation and validation study of the Clinical Outcomes in Routine Evaluation - Outcomes Measure (CORE-OM) into *isiXhosa*

Research proposal submitted by

**Megan M Campbell**

G98c1197 (Rhodes University registration number)

For a thesis in fulfilment of the requirements of the degree of  
**Doctorate of Philosophy in Psychology**

**Supervisor:** Dr. Charles Young

Furthermore, Ms Campbell is a registered counselling psychologist with the *Health Professions Council of South Africa (HPCSA)* (Registration: PS 011 0892 and Practice Number: 037 0061). This means that her research practice is governed by the ethical code of that professional body.

Please do not hesitate to contact me should you require further information on our procedures to uphold ethical standards in research.

Yours sincerely,

**Professor Lindy Wilbraham**

**Chair: RPERC**

**L.Wilbraham@ru.ac.za**

(Appendix E)

Dear Participant (Clinical sample)

Thank you for taking the time to complete this questionnaire. The contents of this questionnaire will be used for research purposes to develop an isiXhosa version that can be used to assist first language isiXhosa speakers who make use of psychological services. **Your participation is voluntary and your identity will remain anonymous.** This research is being conducted as a study independent of the RU student counselling centres and **your decision not to complete this form will have no influence on the care you receive at the student counselling centre.** Completion of this form indicates informed consent for this information being used for research purposes. This research proposal is supported by the Rhodes University Psychology Department's Research Ethics and Proposal Review Committee.

Please indicate:

Age:

Sex:

Race:

First language:

Dear Participant (Non-clinical sample)

Thank you for taking the time to complete this questionnaire. The contents of this questionnaire will be used for research purposes to develop an isiXhosa version that can be used to assist first language isiXhosa speakers who make use of psychological services. **Your participation is voluntary and your identity will remain anonymous. If after completing this form you feel you would benefit from psychological support please approach the student counselling centre.** Completion of this form indicates informed consent for this information being used for research purposes. This research proposal is supported by the Rhodes University Psychology Department's Research Ethics and Proposal Review Committee.

Please indicate:

Age:

Sex:

Race:

First language:

Undergraduate:

Postgraduate:

Faculty:

Yes

I am presently making use of psychological services (e.g.: attending psychotherapy or taking prescription psychopharmacological medication)

No

OFFICE OF THE DEPUTY VICE-CHANCELLOR:  
ACADEMIC AFFAIRS AND RESEARCH  
Private Bag X1314, Alice 5700  
Tel: 04060 22403  
Fax: 0866282944  
[tsnyders@ufh.ac.za](mailto:tsnyders@ufh.ac.za)



UFH/UREC, 01 - REC-270710-028

## Application for clearance from the University of Fort Hare's Ethics Committee

**Project title:** Translation and validation study of the Clinical Outcomes in Routine Evaluation – outcomes Measure (CORE-OM) into isiXhosa

**Chief Researcher:** Megan M Campbell

**Supervisor/Co-supervisor:** Dr Charles Young

**Date of application:** 26 July 2011

Having consulted the Dean of Research, I hereby grant permission to conduct the research.

A handwritten signature in black ink, appearing to read 'J R Midgley', is located below the text of the grant permission.

**Professor J R Midgley**  
**Deputy Vice-Chancellor**  
**Chairperson of the interim Ethics Committee**

19 August 2011

# University of Fort Hare

OFFICE OF UNIVERSITY REGISTRAR

**Alice (main) Campus:**

Private Bag X1314, King William's Town Road, Alice, 5700, RSA  
Tel: +27 (0) 40 602 - 2501 • Fax: +27 (0) 40 602 - 2577  
Email: nmabindisa@ufh.ac.za



September 02, 2011

Ms. Megan M Campbell  
Rhodes Psychology Department

Dear Ms. Campbell

**Application for approval from the University of Fort Hare's Registrar to conduct research**

Having consulted the Chairperson of the Interim Ethics Committee, I hereby grant permission to conduct the research.

Kind regards.

N Mhwetyana (PhD)  
University Registrar

**Bhisho Campus:**

P. O Box 1153, KWT 5600, Independence Avenue , Bhisho, 5600, RSA  
Tel: +27 (0) 40 608 - 3407 • Fax: +27 (0) 40 608 - 3408

**East London Campus:**

Private Bag X9083, EL 5200, 50 Church Street, East London, 5201, RSA  
Tel: +27 (0) 43 704 - 7000 • Fax: +27 (0) 43 704 - 7095  
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**Chairperson of the Research Ethics Committee (Human)**  
**NMMU**

Tel . +27 (0)41 504-2538 Fax. +27 (0)41 504-2778

Ref: [H11-HED-SCC-001/Approval]

Contact person: Mrs U Spies

30 January 2012

Dr AC de Jager  
NMMU  
Embizweni - Room 067  
South Campus

Dear Dr De Jager

**VALIDATION AND TRANSLATION OF THE CLINICAL OUTCOMES IN ROUTINE EVALUATION: OUTCOME MEASURE (CORE-OM) INTO isiXHOSA**

Your above-entitled application for ethics approval served at the Research Ethics Committee (Human).

We take pleasure in informing you that the application was approved by the Committee.

The ethics clearance reference number is **H11-HED-SCC-001**, and is valid for three years. Please inform the REC-H, via your faculty representative, if any changes (particularly in the methodology) occur during this time. An annual affirmation to the effect that the protocols in use are still those for which approval was granted, will be required from you. You will be reminded timeously of this responsibility, and will receive the necessary documentation well in advance of any deadline.

We wish you well with the project. Please inform your co-investigators of the outcome, and convey our best wishes.

Yours sincerely

**Dr B Pretorius**  
**Chairperson: Research Ethics Committee (Human)**

cc: Department of Research Capacity Development

**CORE-OM isiXhosa Translation**

PILOT STUDY: NOT FOR CLINICAL USE

**KUBALULEKILE- NCEDA FUNDA APHA KUQALA**

Le fomu inenkcazelo ezingama-34 zokuba ubuziva njani na KULE VEKI IPHELILEYO.  
Nceda funda inkcazelo nganye uze ucinge ukuba uzive njalo kangakanani na kwiveki ephelileyo.  
Phawula ibhokisi ekufutshane nendlela ozive ngayo nge-

**Kule veki iphelileyo**

		Khange konke konke	Kancinci	Ngamaxesha athile	Kakhulu	Phantse ngamaxesha onke/Rhoqo	Isetyenziswa e-ofisini	
1	Ndizive ndindedwa ndililolo	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
2	Bendibambe umzimba, ndinexhala okanye ndiphaku-phaku	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
3	Ndizive ndinaye umntu onokundixhasa xa ndidinga inkxaso	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
4	Ndizive kakuhle ngesiqu sam	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	W
5	Ndizive ndithyafile ndingenamandla akwenza nto	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
6	Bendindlongo-ndlongo kwabanye abantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
7	Ndizive ndikwazi ukumelana nezinto xa zingahambi kakuhle	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
8	Bendikathazwa ziintlungu, iingqaqambo okanye ezinye iingxaki zomzimba	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
9	Bendinengcinga yokuzenzakalisa	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
10	Bendizitsala ukuthetha nabantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
11	Ukubamba umzimba nonxunguphalo kundithintele ukwenza izinto ezibalulekileyo	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
12	Zindonwabisile izinto endizenzileyo	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
13	Bendiphazanyiswe ziingcinga neemvakalelo ezingafunekiyo	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
14	Ndizive ndifuna ukukhala	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	W

Nceda uguqule iphepha

## Kule veki iphelileyo

		Khange konke konke	Kancinci	Ngamaxesha athile	Kakhulu	Phantse ngamaxesha onke/Rhoqo	Isetyenziswa e-ofisini	
15	Bendinongxunguphalo noloyiko	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
16	Ndiye ndenza amalungiselelo okuzibulala	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
17	Ndive iingxaki zam zindongamele	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	W
18	Andilali kakuhle okanye ndiyaphuthelwa	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
19	Ndive ubushushu okanye uthando komnye umntu	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
20	Bekungakwazeki ukubeka iingxaki zam ecaleni	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
21	Ndikwazile ukuzenza izinto ezininzi ebendinga ukuzenza	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
22	Ndigrogrise okanye ndoyikisa omnye umntu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
23	Ndizive ndinikezele okanye ndiphelelwe lithemba	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
24	Ndicinge ukuba bekunokuba ngcono ukuba bendifile	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
25	Ndive ngathi abanye abantu bayandigxeka	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
26	Ndicinge ukuba andinabahlobo	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
27	Ndizive ndingonwabanga	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
28	Imifanekiso engafunekiyo yezinto ezenzekayo, okanye iinkumbulo ezingafunekiyo bezindihlupha	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
29	Bendikruquka xa ndinabanye abantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
30	Ndicinge ukuba ndizenzile ngeemeko neengxaki zenzima zam	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
31	Ndizive ndinethemba ngengomso lam	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	W
32	Imizamo yam iphumelele	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
33	Ndizive ndiyintlekisa ndiphoxekile kwabanye abantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
34	Ndizenzakalisile okanye ndenze izinto ukubeka impilo yam emngciphekweni	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R

**SIYABULELA NGOKUGCWALISA ELI PHETSHANA LEMIBUZO**

(Appendix J)

Dear Participant (Clinical sample)

Thank you for taking the time to complete this questionnaire. The contents of this questionnaire will be used for research purposes to develop an isiXhosa version that can be used to assist first language isiXhosa speakers who make use of psychological services. **Your participation is voluntary and your identity will remain anonymous.** This research is being conducted as a study independent of the RU/UFH/NMMU student counselling centres and **your decision not to complete this form will have no influence on the care you receive at the student counselling centre.** Completion of this form indicates informed consent for this information being used for research purposes. This research proposal is supported by the Rhodes University Psychology Department's Research Ethics and Proposal Review Committee.

Please indicate:

Student:  Yes

No

Age:

Sex:

Race:

First language:

isiXhosa

English

Other

Dear Participant (Non-clinical sample)

Thank you for taking the time to complete this questionnaire. The contents of this questionnaire will be used for research purposes to develop an isiXhosa version that can be used to assist first language isiXhosa speakers who make use of psychological services. **Your participation is voluntary and your identity will remain anonymous. If after completing this form you feel you would benefit from psychological support please approach the student counselling centre.** Completion of this form indicates informed consent for this information being used for research purposes. This research proposal is supported by the Rhodes University Psychology Department's Research Ethics and Proposal Review Committee.

Please indicate:

Age:

Sex:

Race:

First language:

isiXhosa

English

Bilingual isiXhosa/Eng

Other

Undergraduate:

Postgraduate:

Faculty:

Yes I am presently making use of psychological services (e.g.: attending psychotherapy or taking prescription psychopharmacological medication)

No

# XBDI-II XHOSA

Igama/Name: \_\_\_\_\_ Utshatile/Marital Status: \_\_\_\_\_ Iminyaka/Age: \_\_\_\_\_ Ubumi/  
Gender: \_\_\_\_\_

**Imigaqo:** Le fomu yemibuzo inamaqela eentetho ezingamashumi amabini ananye 21. Nceda fundisisa iqela ngalinye lentetho, uze ukhethe intetho ibe nye kwiqela ngalinye enokuthi ichaze indlela obe uziva ngayo **kwiveki ezimbini ezidluliyeyo udibanisa nonamhlanje**. Yenza isangqa kwinombolo esecaleni kwentetho oyikhethileyo. Ukuba iintetho ezahlukeneyo kwiqela ngalinye zibonakala zikuchaphazela ngokufanayo yenza isangqa kuleyo inenani eliphakamileyo kwiqela elo. Qiniseka ukuba akukhethi ngaphezulu kwentetho enye kwiqela ngalinye, ngokuquka no 16 (Umehluko Kwindlelayokulala) okanye u18 (Umehluko Kokucacelo Ukutya).

<p><b>1. ANDONWABANGA</b></p> <ul style="list-style-type: none"> <li>0 Andiziva ndigonwabanga.</li> <li>1 Ndiziva ndigonwabanga amaxesha amaninzi.</li> <li>2 Andonwabanga ngalo lonke ixesha.</li> <li>3 Andonwabanga kangangokuba andikwazi ukunyamezela.</li> </ul> <p><b>2. UKUTHANDA UKUBONA UBUBI KUYO YONKE INTO</b></p> <ul style="list-style-type: none"> <li>0 Andiziva ndingakhuthazekanga ngekamva lam.</li> <li>1 Ndiziva ndityhafile kakhulu ngekamva lam ngaphezulu kunokuba bendinjalo ngaphambili</li> <li>2 Andilindelanga ukuba izinto zindihambele kakuhle.</li> <li>3 Ndiziva ndingenathemba kwikamva lam kananjalo izinto ziya zisiba mandundu.</li> </ul> <p><b>3. UKUNGAPUMELELI OKUDLULILEYO</b></p> <ul style="list-style-type: none"> <li>0 Andiziva ndingenampumelelo.</li> <li>1 Andiphumelelanga nangaphezulu kunokuba bekufanele.</li> <li>2 Xa ndikhangela emva ndibona ukungapumeleli okuninzi.</li> <li>3 Ndiziva ndingumntu ongenampumelelo ngokupheleleyo.</li> </ul> <p><b>4. UKUPHULUKANA NOLONWABO</b></p> <ul style="list-style-type: none"> <li>0 Ndifumana ulonwabo ngokufanayo kwizinto endizithandayo.</li> <li>1 Andizonwabeli izinto njengesiqhelo.</li> <li>2 Ndifumana ulonwabo oluncinci kakhulu kwizinto endaye ndizonwabela.</li> <li>3 Andifumani lonwabo tu kwizinto endaye ndizonwabela.</li> </ul> <p><b>5. ISAZELA</b></p> <ul style="list-style-type: none"> <li>0 Andiziva ndinesazela.</li> <li>1 Ndiziva ndinesazela malunga nezinto ezininzi endizenzileyo okanye ebekufanele ndibe ndizenzele.</li> <li>2 Ndiziva ndinesazela ixesha elininzi.</li> <li>3 Ndiziva ndinesazela ngalo lonke ixesha.</li> </ul>	<p><b>6. UKUZIVA USOHLWAYWA</b></p> <ul style="list-style-type: none"> <li>0 Andiziva ndisoahlwaywa.</li> <li>1 Ndiziva ngathi ndingohlwaywa.</li> <li>2 Ndikulindele ukohlwaywa.</li> <li>3 Ndiziva ndingowohlwayiweyo.</li> </ul> <p><b>7. UKUNGAZITHANDI</b></p> <ul style="list-style-type: none"> <li>0 Ndiziva njengesiqhelo ngesiqu sam.</li> <li>1 Ndiphelelwe kukuzithemba ngesiqu sam.</li> <li>2 Ndidanile ngesiqu sam.</li> <li>3 Andizithandi.</li> </ul> <p><b>8. UKUZIGXEKA</b></p> <ul style="list-style-type: none"> <li>0 Andizigxeki okanye ndizisole ngaphezulu kunesiqhelo.</li> <li>1 Ndizigxeka ngaphezulu kunokuba ndandinjalo.</li> <li>2 Ndizigxeka ngazo zonke iimpazamo zam.</li> <li>3 Ndizisola ngazo zonke izinto ezimbi ezenzekayo.</li> </ul> <p><b>9. IINGCINGA OKANYE IMINQWENO YOKUZIBULALA</b></p> <ul style="list-style-type: none"> <li>0 Andinazo tu iingcinga zokuzibulala.</li> <li>1 Ndinazo iingcinga zokuzibulala, kodwa andingekhe ndiziphumeze.</li> <li>2 Ndingathanda ukuzibulala.</li> <li>3 Bendingazibulala ukuba bendinganethuba.</li> </ul> <p><b>10. UKULILA</b></p> <ul style="list-style-type: none"> <li>0 Andilili ngaphezulu kunesiqhelo.</li> <li>1 Ndilila ngaphezulu kunesiqhelo.</li> <li>2 Ndililela yonke into nokuba incinci.</li> <li>3 Ndiziva ndifuna ukulila, kodwa andikwazi.</li> </ul>
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**11. UKUYALUZELA**

- 0 Andiziva ndingazinzanga okanye ndibambekile ngaphezulu kunesiqhelo.
- 1 Ndiziva ndingazinzanga okanye ndibambekile ngaphezulu kunesiqhelo.
- 2. Ndiziva ndingazinzanga okanye ndiyaluzela kakhulu kangangokuba kunzima ukuhlala ndizole.
- 3. Ndiziva ndingazinzanga okanye ndiyaluzela kakhulu kangangokuba kufuneka ndijikeleze okanye kubheko into endiyenzayo.

**12. UKUPHELELWA NGUMDLA**

- 0 Andiphelelwanga ngumdlwa kwabanye abantu okanye kwizinto endiqhele ukuzenza.
- 1 Uhlile umdlwa wam kwabanye abantu okanye izinto kunangaphambili.
- 2 Ndiphelelwe ngumdlwa omkhulu kwabanye abantu okanye izinto.
- 3 Kunzima ukuba nomdlwa nakweyiphipha into.

**13. UKUNGAFIKELELI KWISIGQIBO**

- 0 Ndenza izigqibo njengaphambili.
- 1 Ndiva kunzima kakhulu ukwenza izigqibo kunesiqhelo.
- 2 Ndinobunzima obugqithileyo ukwenza izigqibo kunangaphambili.
- 3 Ndinengxaki yokwenza naziphina izigqibo.

**14. UKUNGAXABISEKI**

- 0 Andiziva ndingaxabisekanga.
- 1 Andiziboni njengomntu oxabisekileyo oluncedo njengohlobo endandilulo.
- 2 Ndiziva ndingaxabisekanga ngaphezulu xanandizithelekisa nabanye abantu.
- 3 Ndiziva ndingaxabisekanga ngokupheleleyo.

**15. UKUPHELELWA NGAMANDLA**

- 0 Ndinamandla kangangoko njengesiqhelo.
- 1 Ndimandla amancinci kunohlobo endandinawo ngalo.
- 2 Andinamandla aneleyo okwenza okuninzi.
- 3 Andinamandla aneleyo okwenza nantonina.

**16. UMEHLUKO KWINDLELAYOKULALA**

- 0 Andiboni mehluko kwindlela endilala ngayo.

- 
- 1a Ndilala ngaphezulu kunesiqhelo noko.
  - 1b Ndilala ngaphantsi kunesiqhelo noko.
- 

- 2a Ndilala ngaphezulu kakhulu kunesiqhelo.
  - 2b Ndilala ngaphantsi kakhulu kunesiqhelo.
- 

- 3a Ndiyilala ixesha elininzi emini.
- 3b Ndivuka phambi kwexesha kangangeyure enye okanye ezimbini (1hr-2hrs) ndingakwazi ukuphinde ndilale.

**17. UKUCAPHUKA**

- 0 Andicaphuki kunesiqhelo.
- 1 Ndicaphuka ngaphezulu kunesiqhelo.
- 2 Ndicaphuka kakhulu ngaphezulu kunesiqhelo.
- 3 Ndicaphuka ngalo lonke ixesha.

**18. UMEHLUKO KOKUCACELO UKUTYA**

- 0 Andikazifumanisi ndinomehluko kwindlela yam yokutya.

- 
- 1a Umdla wam wokutya noko ungaphantsi kunesiqhelo.

- 1b Umdla wam wokutya noko ngaphezulu kunesiqhelo.
- 

- 2a Umdla wam wokutya ungaphantsi kakhulu kunangaphambili.

- 2b Umdla wam wokutya ngaphezulu kakhulu kunesiqhelo.
- 

- 3a Andinamdlwa wokutya kwaphela.

- 3b Ndibawela ukutya ngalo lonke ixesha.

**19. UBUNZIMA BOKUZIKISA-INGQONDO**

- 0 Ndiyakwazi ukuzikisa ingqondo kakuhle njengesiqhelo.
- 1 Andikwazi ukuzikisa ingqondo kakuhle njengesiqhelo.
- 2 Kunzima ukugcina ingqondo yam nakwintoni na ngaphezulu kwexesha elingephi.
- 3 Ndifumanisa ndingakwazi ukuzikisa ingqondo nakwintoni na.

**20. UKUZIVA UKUDINWA**

- 0 Andiziva ndidiniwe ndidinwe ingqondo kunesiqhelo.
- 1 Ndidinwa okanye ndidinwe ingqondo lula kakhulu ngaphezulu kunesiqhelo.
- 2 Ndidinwe okanye ndidinwe ingqondo kangangokuba andikwazi nokwenza inkoliso yezinto ebendiqhele ukuzenza.
- 3 Ndidinwe okanye ndidinwe ingqondo kangangokuba andikwazi ukwenza ezininzi yezinto ebendiqhele ukuzenza.

**21. UKUPHELELWA NGUMDLA KWISONDO**

- 0 Andikaphawuli nguqulelo isandula ukwenzeka kumdlwa wam kwisondo.
- 1 Uhlile umdlwa wam kwisondo kunesiqhelo.
- 2 Uhle kakhulu umdlwa wam kwisondo ngoku.
- 3 Ndiphelelwe tu ngumdlwa kwisondo.

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Subtotal Page 2

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Subtotal Page 1

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Total Score

**First Amended CORE-OM isiXhosa Translation**

PILOT STUDY: NOT FOR CLINICAL USE

**KUBALULEKILE- NCEDA FUNDA APHA KUQALA**

Olu xwebhu luneenkcazelo ezingama-34 zokuba ubuziva njani na KULE VEKI IPHELILEYO.  
Nceda funda inkcazelo nganye uze ucinge ukuba uzive njalo kangakanani na kwiveki ephelileyo.

Phawula ibhokisi ekufutshane nendlela ozive ngayo nge-

*Sebenzisa ipeni emnyama (hayi ipensile) uze uphawule ngokucacileyo ebhokisini.*

**Kule veiki iphelileyo**

		Khange konke konke	Ngoko nangoko	Ngamaxesha athile	Rhoqo	Phantse ngamaxesha onke	Isetyenziswa e-ofisini	
1	Ndizive ndindedwa ndilikheswa	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
2	Bendibambe umzimba, ndinexhala okanye ndiphaku-phaku	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
3	Ndizive ndinaye umntu onokundixhasa xa ndidinga inkxaso	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
4	Ndizive kakuhle ngesiqu sam	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	W
5	Ndizive ndiswele amandla, ndingenamdlawanto	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
6	Bendindlongo-ndlongo ndibetha kwabanye abantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
7	Ndizive ndikwazi ukumelana nezinto xa zingahambi kakuhle	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
8	Bendikhathazwa ziintlungu, iingqaqambo okanye ezinye iingxaki zomzimba	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
9	Bendinengcinga yokuzenzakalisa.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
10	Bekunzima ukuthetha nabantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
11	Ukubamba umzimba nonxunguphalo kundithintele ukwenza izinto ezibalulekileyo	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
12	Zindonwabisile izinto endizenzileyo	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
13	Bendiphazanyiswe ziingcinga neemvakalelo ezingafunekiyo	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
14	Ndizive ndifuna ukukhala	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	W

**Nceda uguqule iphepha**

## Kule veki iphelileyo

		Khange konke konke	Ngoko nangoko	Ngamaxesha athile	Rhoqo	Phantse ngamaxesha onke	Isetyenziswa e-ofisini	
15	Bendinophaphazelo noloyiko	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
16	Ndiye ndenza amalungiselelo okuzibulala	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
17	Ndive iingxaki zam zindongamele	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	W
18	Bendiphuthelwa okanye ubuthongo bungehli	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
19	Ndive ndinomdla okanye uthando komnye umntu	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
20	Bekungakwazeki ukubeka iingxaki zam ecaleni	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
21	Ndikwazile ukuzenza izinto ezininzi ebendinga ukuzenza	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
22	Ndigrogrise okanye ndoyikisa omnye umntu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
23	Ndizive ndiphelelwe lithemba	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
24	Ndicinge ukuba bekunokuba ngcono ukuba bendinokufa	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
25	Ndive ngathi abanye abantu bayandigxeka	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
26	Ndicinge ukuba andinabahlobo	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
27	Ndizive ndingonwabanga	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
28	Imifanekiso engafunekiyo yezinto ezenzekayo, okanye iinkumbulo ezingafunekiyo zindinxunguphalisile	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
29	Bendikruqula xa ndinabanye abantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
30	Ndicinge ukuba ndim omakazisole ngeengxaki neenzima zam	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
31	Ndizive ndilindele okuhle ngengomso lam	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	W
32	Ndizifumene izinto ebendizifuna	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
33	Ndizive ndiyintlekise okanye ndiny ngabanye abantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
34	Ndizenzakalisile okanye ndenze izinto ukubeka impilo yam emngciphekweni	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R

**SIYABULELA NGOKUGCWALISA ELI PHETSHANA LEMIBUZO**

**Second Amended CORE-OM isiXhosa Translation**

PILOT STUDY: NOT FOR CLINICAL USE

**KUBALULEKILE- NCEDA FUNDA APHA KUQALA**

Olu xwebhu luneenkcazelo ezingama-34 zokuba ubuziva njani na KULE VEKI IPHELILEYO.  
Nceda funda inkcazelo nganye uze ucinge ukuba uzive njalo kangakanani na kwiveki ephelileyo.

Phawula ibhokisi ekufutshane nendlela ozive ngayo nge-

Sebenzisa usiba olumnyama (hayi ipensile) uze uphawule ngokucacileyo ebhokisini.

**Kule veiki iphelileyo**

		Khange konke konke	Ngoko nangoko	Ngamaxesha athile	Rhoqo	Phantse ngamaxesha onke	Isetyenziswa e-ofisini	
1	Ndizive ndindedwa ndilikheswa	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
2	Bendibambe umzimba, ndinexhala okanye ndiphaku-phaku	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
3	Ndizive ndinaye umntu onokundixhasa xa ndidinga inkxaso	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
4	Ndizive kakuhle ngesiqu sam	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	W
5	Ndizive ndiswele amandla, ndingenamdlawanto	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
6	Bendindlongo-ndlongo kwabanye abantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
7	Ndizive ndikwazi ukumelana nezinto xa zingahambi kakuhle	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
8	Bendikhathazwa ziintlungu, iingqaqambo okanye ezinye iingxaki zomzimba	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
9	Bendinengcinga yokuzenzakalisa	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
10	Kunzima ukuthetha nabantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
11	Ukubamba umzimba nonxunguphalo kundithintele ukwenza izinto ezibalulekileyo	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
12	Zindonwabisile izinto endizenzileyo	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
13	Bendiphazanyiswe ziingcinga neemvakalelo ezingafunekiyo	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
14	Ndizive ndifuna ukukhala	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	W

**Nceda uguqule iphepha**

## Kule veki iphelileyo

		Khange konke konke	Ngoko nangoko	Ngamaxesha athile	Rhoqo	Phantse ngamaxesha onke	Isetyenziswa e-ofisini	
15	Bendinongxunguphalo noloyiko	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
16	Ndiye ndenza amalungiselelo okuzibulala	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
17	Ndive iingxaki zam zindongamele	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	W
18	Ubuthongo bebungehli okanye ndiphuthelwa	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
19	Ndive ubushushu okanye uthando komnye umntu	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
20	Bekungakwazeki ukubeka iingxaki zam ecaleni	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
21	Ndikwazile ukuzenza izinto ezininzi ebendinga ukuzenza	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
22	Ndigrorise okanye ndoyikisa omnye umntu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
23	Ndizive ndinikezele okanye ndiphelelwe lithemba	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
24	Ndicinge ukuba bekunokuba ngcono ukuba bendifile	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R
25	Ndive ngathi abanye abantu bayandigxeka	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
26	Ndicinge ukuba andinabahlobo	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
27	Ndizive ndingonwabanga	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
28	Imifanekiso engafunekiyo yezinto ezenzekayo, okanye iinkumbulo ezingafunekiyo zindinxunguphalisile	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
29	Bendikruquka xa ndinabanye abantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
30	Ndicinge ukuba ndim omakaziso ngeengxaki neenzima zam	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	P
31	Ndizive ndilindele okuhle ngengomso lam	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	W
32	Ndizifumene izinto ebendizifuna	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/>	F
33	Ndizive ndiphoxiwe okanye hlaziwe ngabanye abantu	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	F
34	Ndizenzakalisile okanye ndenze izinto ukubeka impilo yam emngciphekweni	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/>	R

**SIYABULELA NGOKUGCWALISA ELI PHETSHANA LEMIBUZO**