Cross-cultural adaptation of the Intelligibility in Context Scale for South Africa

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Abstract
The Intelligibility in Context Scale (ICS) is a screening questionnaire that focuses on parents’ perceptions of children’s speech in different contexts. Originally developed in English, it has been translated into 60 languages and the validity and clinical utility of the scale has been documented in a range of countries. In South Africa, there are 11 official languages, yet few assessment materials are available in languages other than English. In this article we describe the cross-cultural adaptation of the ICS into a screening tool encompassing all South Africa’s official languages in addition to English. Objectives were: (1) to describe the linguistic and conceptual equivalence of the 10 translated versions compared to the original ICS; and (2) to evaluate speech-language therapists’ (SLT) perceptions of the usability and value of the ICS translations in the languages of South Africa. Twenty-five participants translated the ICS into 10 official languages of South Africa using forward and back translation and community checking. Next, a survey of 23 SLTs practicing in South Africa, and semi-structured interviews with five SLTs working in Cape Town, took place. The conceptual and linguistic equivalence of the adapted materials for each language was considered. Concepts that were challenging to translate from English into many of the Bantu languages included those relating to immediate/extended family, acquaintances, strangers and hearing/understanding. Linguistic challenges in translation related to dialectal differences and the use of pronouns. The SLTs in the sample found the ICS easy to use and saw it as a useful component of assessment especially when working with families who do not share a language with the SLT. Overall the study contributes to the development agenda of SLTs working in South Africa by creating and trialing the ICS in all the countries’ official languages to improve access and quality of services offered to all the families they serve.

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I Introduction

Intelligibility is the degree to which speech is understood by others (Flipsen, 2006). To be intelligible is a primary goal of communication, and has been reported by speech-language therapists (SLTs) to be one of the most important considerations when evaluating a child’s speech and considering the need for intervention (Baker, 2010; Pascoe et al., 2006). When children do not acquire intelligible speech in the typical way, they are at risk of difficulties with literacy, academic success and psychosocial functioning (McCormack et al., 2010). In South Africa, the prevalence of speech sound disorders has not yet been determined; however, a considerable proportion of many SLTs’ caseloads includes children with speech difficulties. Evaluating intelligibility in this context is complex because intelligibility necessarily includes environmental and subjective listener factors.

The Intelligibility in Context Scale (ICS) is a subjective rating scale developed by McLeod et al. (2012a). It can be used to evaluate children’s intelligibility through considering parents’ estimates of their child’s intelligibility when talking to various communication partners in daily life. The ICS was developed based on the International Classification of Functioning, Disability and Health for Children and Youth (ICF-CY) (World Health Organization, 2007), a holistic framework that conceptualizes Body Structures and Functions, Activities and Participation and Contextual factors, including the different contexts and communication partners to which a child is exposed. The ICS consists of seven items rated by parents or caregivers using a five-point Likert scale. Its aim is to obtain information about how well a child is able to convey their message to different conversation partners in a range of contexts. Each item focuses on relevant contexts identified in the ICF-CY, namely support and relationships, immediate and extended family, friends, acquaintances, peers, colleagues, neighbours and community members, people in positions of authority (e.g. teachers) and strangers (World Health Organization, 2007). The original English version of the ICS has a high internal reliability ($\alpha = .93$), construct validity and sensitivity (McLeod et al., 2012b). Criterion validity was established through correlations of the ICS and percentage phonemes correct (PPC) ($r = .54$), percentage consonants correct (PCC) ($r = .54$) and percentage vowels correct (PVC) ($r = .36$) using the Diagnostic Evaluation of Articulation and Phonology (DEAP; Dodd et al., 2002). It has been translated into 60 languages to date (see www.csu.edu.au/research/multilingual-speech/ics; accessed March 2016), including Arabic, Finnish, German, Russian and Welsh, and checked via back translations being undertaken by professionally accredited translators. Ng, To and McLeod (2014) describe the validation process that was undertaken with the Traditional Chinese version of the ICS, and suggest that its satisfactory psychometric properties may make it a valuable screening tool for SLTs working in Hong Kong. The ICS has also been validated in Slovenia (Kogovšek and Ozbič, 2013), Croatia (Tomić and Mildner, 2014) and Jamaica (Washington et al., 2015) and normed on 803 children in Australia (McLeod et al., 2015). In this article we focus our attention on the challenges of translation and clinical application, rather than on validation (Lam and Tjaden, 2013).

Cross-cultural adaptation of clinical instruments is important to ensure they are linguistically and culturally appropriate for the context in which they will be used, while still measuring the same concept as the original (Carter et al., 2005). According to Hambleton and Kanjee (1995) there are three main reasons for adapting tests cross-culturally: (1) to allow fairness of assessment since a person should be allowed to participate in his/her own language; (2) to allow for comparative studies across all cultures or ethnic groups since the test should be equivalent in all languages; (3) to save costs and time of creating a new test, because adjusting a respected and established test creates a
sense of security for the user. In order to achieve cross-cultural adaptation, there are at least three steps that need to be followed. These include translating the test, achieving equivalence and making cultural adaptations, and determining the usability of the test by piloting it (Bornman et al., 2010).

Equivalence of adapted materials includes two main types: linguistic and conceptual equivalence (Beaton et al., 2000; Matias-Carrelo et al., 2003). Linguistic equivalence refers to semantic and technical equivalence. Semantic equivalence refers to the requirement that the same meaning of the words used between the original and translated languages is maintained, and technical equivalence refers to the situation when the translated version is comparable to the original in terms of format and layout. Conceptual equivalence takes into account theoretical meaning and includes idiomatic equivalence and content/experiential equivalence (Beaton et al., 2000). Idiomatic equivalence is concerned with the translation of colloquialisms, idioms and jargon. Content/experiential equivalence is when nuances of daily life relevant to the specific population are considered (e.g. food, clothing and transport items).

Biases that may arise in translations are construct, item and method bias. Construct bias occurs when the meaning of the concept being measured differs cross culturally (e.g. intelligence) (Egisdóttir et al., 2008). Item bias occurs when items show discrepancies by not appropriately meeting the description of the concept being investigated. Method bias occurs when the procedures and tools used to analyse a construct are unfamiliar to the researcher, and may be culturally inappropriate (Smit et al., 2006).

South Africa is a diverse multilingual, multicultural country with a progressive constitution that recognizes 11 official languages. English and Afrikaans are West Germanic languages. The other nine languages are indigenous to South Africa and form part of the large family of Bantu languages. isiZulu is the first language of the majority of the population (22.7%), followed by isiXhosa (16.0%), Afrikaans (13.5%), Sepedi (9.1%), English (9.6%), Setswana (8.0%), Sesotho (7.6%), Xitsonga (4.5%), siSwati (2.5%), Tshivenda (2.4%), and isiNdebele (2.1%) (Statistics South Africa, 2011). Other languages are spoken by 1.6% of the population.

In contrast to the population demographics, most SLTs in South Africa speak English and/or Afrikaans (Pascoe and Norman, 2011; Van der Merwe and Le Roux, 2014). This is a challenge since ethical guidelines (South African Speech Language Hearing Association, 2015) suggest that intervention cannot be refused due to a language mismatch between a child/family and the clinician. However SLTs may not have the necessary abilities to offer services in all languages, resulting in an underservice of indigenous language speakers (Pascoe and Norman, 2011). A further complication is that assessment and intervention resources used by SLTs are mainly developed in English-speaking countries such as the UK, USA and Australia and may not be culturally or linguistically appropriate to the South African context. Assessment of children in a language that is not their first language may lead to inaccurate diagnoses (Carter et al., 2005). Van der Merwe and Le Roux (2014) emphasize the notion of language-specific communication disorders, that is, aspects of a communication disorder that are specific to a particular language, in addition to showing the more universal characteristics of the particular disorder. In their article outlining the sound system features of isiZulu and Setswana that do not occur in the Germanic languages, they note that as SLTs:

we have to be aware that an inability to accurately produce [language-specific] features during speech production will affect the intelligibility of a message … The inability to hear or understand these features will affect the accurate reception of a message (p.2).

Thus, traditional definitions of intelligibility, which refer to the degree to which speech is understood by others (Flipsen, 2006), need to be applied in a culture-specific way. Intelligibility challenges may occur when a child has a speech sound disorder, and/or when language and cultural
differences arise between speaker and listeners. It may be difficult to separate out what constitutes a speech sound disorder and how this is affected by linguistic and cultural factors. The diagnosis of speech sound disorder may not be straightforward and, coupled with a backdrop of poverty and often inadequate basic health care, ultimately, a large proportion of the population may perceive SLT services as having little or no relevance to their lives, especially if assessment and management do not consider these issues in a sensitive and meaningful way. According to the Sapir-Whorf Hypothesis (Sapir, 1958) there are some ideas, concepts and thoughts that cannot be understood by an individual who does not share the same language. Linguistic relativity states that the structure of a particular language influences cognition. Linguistic determinism suggests that language structure can influence one’s worldview (Kay and Kempton, 1984). Whether or not one subscribes to the strong or weaker view of this theory, it is clear that language and culture are deeply intertwined, and that one’s culture influences the way one thinks and speaks.

One way in which SLTs can start to meet these challenges is through the development and adaptation of resources, which are tailored and contextually relevant to the given population. While the development of valid and reliable standardized assessments for all local languages can be considered a ‘gold standard’ towards which SLTs should strive, this involves stringent procedures, extensive resources and is time consuming (Pascoe and Norman, 2011). Cross-cultural adaptation of a subjective rating scale such as the ICS will take considerably less time and require fewer resources than developing or adapting a norm-referenced standardized assessment. Although the ICS cannot replace comprehensive standardized assessments, such work may support SLTs working with children with speech sound disorders in the South African context by providing a tool that could be used with speakers of any of the official languages.

The aim of the study was to translate the English version of the ICS (McLeod et al., 2012a) into 10 of South Africa’s official languages (Afrikaans, isiZulu, isiXhosa, Sesotho, Tshivenda, isiNdebele, Sepedi, Setswana, siSwati, and Xitsonga; the eleventh being English) and to describe its usability for SLTs in South Africa. The two study objectives were: (1) To describe the linguistic and conceptual equivalence of the 10 translated versions compared to the original ICS; and (2) to evaluate SLTs’ perceptions of the usability and value of the translations of the ICS in the languages of South Africa.

II  Method

I  Study 1

a  Participants. Twenty-five participants were recruited as volunteer translators based on their first language proficiency in one of the languages in question. They were also required to be proficient English speakers, either attending or having graduated from a university where English is the main language of teaching. Ten of the translators were SLT students and two were qualified SLTs. The remaining translators were students (undergraduate or postgraduate) or staff of the university affiliated with departments that were not linked to Communication Sciences at the University of Cape Town, South Africa. At least two translators were required for each of the 10 languages. For some of the languages three translators participated. Each language had a forward translator (translating from English to one of the other official languages), a back translator (translating back into English), and some of the languages were assigned a third translator for checking or clarification purposes. The translators were recruited by means of personal contacts.

b  Materials. Copies of the original English ICS, a template from McLeod et al. (2012a) to guide the translation, and copies of the translated versions of the ICS in the 10 official languages for the back translation were used.
Procedure. The protocol from the World Health Organization (2012) for the translation and adaptation of instruments was used as a guideline. Four main steps were followed:

- **Step 1:** The first author liaised with the translators to establish a partnership (Morso et al., 2011). This partnership was important because we needed the translation team to understand what was required of them, that the engagement may be prolonged if clarification was needed about translations and that they should carry out the translations to the best of their abilities based on the materials available to them.

- **Step 2:** Ten forward translators (one for each language) were asked to translate the English version of the scale into their first language. They were required to translate the scale in its entirety (i.e. including instructions, headers and footers) using the template provided. The translators were instructed to consider linguistic and cultural factors throughout the translation process, to use acceptable language for a broad audience and to strive to ensure that the meaning and concepts behind the original scale were preserved in the translated versions (following the guidelines from the World Health Organization, 2012).

- **Step 3:** Ten back translators (one for each language) were asked to translate the adapted version back into English without having seen the original English version. This was done to show any discrepancies or inconsistencies that may have arisen between the original ICS and the original forward translated version.

- **Step 4:** The back-translated versions were returned to the first author who looked for discrepancies between the original English version and the back-translated versions. The back translators were then requested to make any necessary changes to eliminate the identified discrepancies. This involved meeting with the translator and showing them the original ICS. The discrepancies were discussed and the translators asked to explain why the discrepancies may have occurred as well as giving solutions for how to overcome them. For five of the translations a third additional translator was asked to independently check the translation or resolve specific queries.

d Analysis. We aimed for the translated versions of the ICS to be as conceptually close to the original scale as possible, while at the same time ensuring that the scale would be linguistically appropriate for the users and understood by the greatest range of speakers of each language. This is one of the guidelines from the World Health Organization (2012). Conceptual equivalence is concerned with whether the theoretical meaning, the idea or concept underlying the message, has been achieved in the translation. If the idea or concept behind the message is consistent then conceptual equivalence is achieved even if the words appear outwardly different. A comparison of the linguistic and conceptual equivalence of the translations and the original English version was undertaken. Where the research team lacked the necessary expertise in a particular language, translators were called upon for help. A questionnaire (Appendix 1) consisting of eight open-ended questions was used to guide the analysis. Of the eight questions comprising the checklist, questions 1–6 focused the translators’ attention on specific components of the ICS (title, rating scale, footnotes, etc.), ensuring that these were all translated in an acceptable way for the target language and the broadest possible audience. Questions 7 and 8 specifically asked about conceptual equivalence and whether translators felt that the scale would achieve what it sets out to do in the original form. The translations were compared in order to explore and reach consensus about any conceptual or linguistic differences. The first author recorded and noted any discrepancies in order to describe the conceptual and linguistic equivalence of the scale. In some cases further refinements were made to the translations.
2 Study 2

a Participants. Twenty-three SLTs participated in the second study (and these participants were not participants in Study 1). They all worked with children in different regions of South Africa, including the Western Cape \( (n = 12) \), KwaZulu-Natal \( (n = 3) \), Northern Cape \( (n = 3) \), Eastern Cape \( (n = 3) \) and Gauteng \( (n = 2) \). The electronic survey allowed access to SLTs working in different regions of the country. Of the 23 participants who completed the electronic survey, five SLTs, all based in the Western Cape agreed to be individually interviewed using a semi-structured format, which aimed to obtain more detailed information about the experiences of the SLTs. These interviews were limited to SLTs working in the one region where the research team was based because of budgetary constraints that prevented travel further afield.

b Procedure. Email contact was made with 121 SLTs working with children in South Africa. Contact details were obtained from national databases. Thirty-two (26.4%) agreed to participate and were sent copies of the ICS translated into all of the official South African languages. They were given a brief set of guidelines and links to relevant literature, and invited to use the ICS in their clinical practice as they saw fit over the following three-week period. Any of the 11 versions of the ICS could be administered in the preferred language of a family. We were deliberately non-prescriptive in our approach so that the clinicians had the opportunity to use the ICS with any family and in situations (assessment, therapy, outcomes evaluation) that they felt were appropriate. Twenty-three SLTs returned the required information (19% response rate). Additionally SLTs working in Cape Town were invited to participate in individual interviews, and five of them consented to this.

c Materials. The materials used were the copies of the ICS translated into all official South African languages, a checklist, and questionnaire (Appendix 2) to determine the usability of the ICS in the languages of South Africa. The checklist required SLTs to detail which ICS translation they used and on how many occasions. The questionnaire contained open and closed questions regarding the perceived value and usability of the ICS adapted for use in the languages of South Africa. For the semi-structured interviews, a schedule, based on the questionnaire was used to guide the conversations, and an audio recorder (Olympus VN-713PC) was used to record the discussion for later transcription and analysis.

d Analysis. The data from each completed questionnaire was entered into a Microsoft Excel spreadsheet for analysis. The open-ended questions were analysed using thematic content analysis following Terre-Blanche et al. (2006). Responses to closed questions and demographic descriptors were described, and frequency counts were recorded. Responses on the checklist component of the questionnaire were analysed to determine the number of administrations of the ICS and the languages used. Due to the small sample size, individual opinions regarding the usability of the ICS translations, and trends common in the data, were also identified.

III Results

Study 1

Despite the ICS being based on contexts and conversational partners that had been included in the World Health Organization’s ICF-CY (2007), some words and phrases in the original ICS refer to concepts that proved challenging to translate into many of the languages. These difficulties arose for both conceptual and linguistic reasons: some English words do not have equivalents in other languages (linguistic reasons), and underlying this is the fact that the concepts referred to are not part of the culture or world view of the people who speak the languages (conceptual reasons). There were four main issues stemming from a lack of conceptual equivalence, and two issues that were primarily linguistic. The nature of these difficulties and the solutions that were used are discussed in the following sections.

a  Conceptual challenge 1: Immediate and extended family. The original ICS has questions that refer to varying degrees of closeness in the family circle (‘immediate family’ and ‘extended family’). For nine of the 10 languages (and their linked cultures) studied in this project, the notion of different degrees of family does not seem to occur. For example, in isiXhosa ‘immediate family’ was translated into ‘family’ (‘amalungu usapho’). This then meant that the same term was used to refer to ‘extended family’, which would then create ambiguity in the scales. ‘Family’ in most of the South African cultures is the family that one lives with but might also encompass distant relatives. Similar conceptual difficulties were noted for all the other Bantu languages. Afrikaans, from the same language family as English, does distinguish between immediate family (‘gesin’) and extended family (‘familie’). The translators were consulted about ways to address these conceptual discrepancies. One suggestion was that the terms ‘other’ (‘amanye’ in isiXhosa) and ‘some’ (‘amanaya’ in isiZulu) were used in conjunction with the term ‘family’ to describe extended family. In isolation, these terms did not indicate the meaning behind extended family; however, when used after item 2 ‘Does your family understand your child?’ the distinction was made clearer. Another way of addressing the conceptual discrepancy was using the terms ‘close family’ and ‘people who aren’t close family’ as alternatives to the terms immediate family and extended family as used in the original ICS. Asking whether ‘people who are not close family understand your child’ may not be specific when used in isolation. However, when read in succession with the other linked family questions, the ambiguity is cleared up.

b  Conceptual challenge 2: Acquaintances. In most of the languages in this study, there was not a direct equivalent term for the English word ‘acquaintances’. This may reflect inherent cultural differences: the notion of an acquaintance as somebody one may know (even if only by name), may be foreign to people in many cultures (Naude, 2005). For most of the languages, the translators dealt with this by using phrases that conveyed a similar meaning (‘other people’). For example, ‘abanye abantu’ in isiZulu and ‘batho ba bang’ in Sesotho. For Tshivenda, a phrase meaning ‘people that meet up with your child’ was used. There is a word for the term acquaintances in Afrikaans: the word ‘kennis’ is a direct translation of the term.

c  Conceptual challenge 3: Strangers / unfamiliar people. A footnote in the original English version of the ICS (McLeod et al., 2012a) reads: ‘The term “strangers” may be changed to “unfamiliar people”’. For five of the languages, difficulties arose as translators reported that there was no single word that could appropriately be used to convey the meaning of ‘strangers’ or ‘unfamiliar people’. Phrases that were used equated to ‘people who are not known to you’ or ‘people that your child is not used to’. In some of the languages, like Setswana, there is a word for stranger: ‘diseterenjara’ is a loanword adaptation from the English word ‘stranger’. Often loanwords adopt the surface
structure of the foreign word in order to fit in with the phonological structure of the borrowing language (Peperkamp, 2004), as seen in this example. A concern raised by the translators was that this loanword may not be understood by all speakers of Setswana.

d  **Conceptual challenge 4: Hear and understand.** In several of the languages, one word is used for both ‘hear’ and ‘understand’ rather than distinguishing between these two different abilities as in English. For example, ‘uyamva’ is used in isiXhosa and ‘uyayizwa’ in isiZulu. Intelligibility is a complex concept, and for a child to make his or her meaning understood they must be both heard and understood. SLTs in South Africa should be mindful of this general meaning of the words: they may need to probe further as to the nature of a child’s intelligibility.

e  **Linguistic challenge 1: Dialect issues.** Dialects differ widely and need to be carefully considered in the translation process. Translators in this study were urged to translate for as broad an audience as possible. Nevertheless factors such as setting and age group can influence formality of the chosen dialect. For example, in the Xitsonga translation, it was noted that the language used was more formal than the way most Xitsonga speakers would talk on an everyday basis. The two translators could not agree on a translation that would be widely understood and accessible to everyone. A third translator was asked for his opinion of the translation and explained that the formal Xitsonga language would not be used by younger people, but they would understand it and might actually expect a formal dialect in a clinical setting.

f  **Linguistic challenge 2: Pronouns (him/her and he/she).** Grammatical difficulties arose in some cases. For example, in Afrikaans the terms ‘he/she’ and ‘him/her’ were used in place of ‘your child’ because it is considered grammatically incorrect to repeat the phrase ‘your child’ in the same sentence.

**Study 2**

During the three-week study period, SLTs offered therapy in a total of seven languages, namely Afrikaans \((n = 16)\), English \((n = 21)\), isiXhosa \((n = 5)\), isiZulu \((n = 3)\), Sesotho \((n = 1)\), Setswana \((n = 2)\), and other non-official South African languages such as Portuguese and French \((n = 1)\). Three SLTs worked in one language, 11 were bilingual, seven worked in three languages, one SLT worked in four languages and one SLT’s language profile was unknown. The median number of languages spoken per SLT was two. Languages not offered by SLTs in this sample were isiNdebele, Sepedi, siSwati, Tshivenda and Xitsonga.

Tables 1 and 2 summarize the way in which the ICS was used by the 23 SLTs in our sample over the three-week period. It was administered a total of 63 times to 63 different families: 34 times verbally by the SLTs themselves and 29 times in the written form by parents/caregivers. Of the 11 different language versions, seven were administered by the SLTs. Afrikaans and English were administered the most, 26 and 22 times respectively. The ICS was not administered in Sepedi, siSwati, Tshivenda and Xitsonga. The average number of administrations per SLT was 2.4 times over the three-week period.

Many SLTs \((n = 9; 39.1\%)\) described using the ICS as part of an assessment battery. In its role as part of an assessment, the participants commented that the ICS assists in acquiring a baseline \((n = 3; 13.4\%)\), tracking progress \((n = 3; 13.4\%)\), obtaining a better understanding of a child’s intelligibility \((n = 5; 21.7\%)\), gaining further understanding of parental attitudes and understanding of intelligibility \((n = 5; 21.7\%)\), obtaining case history information \((n = 9; 39.1\%)\) and allowing for a holistic view of the child in their context \((n = 3; 13.4\%)\). Some participants noted that it was useful
for showing parents that therapy is necessary (n = 3; 13.4%), and because there are no other intelligibility assessments for the South African population (n = 3; 13.4%).

The ICS was described as ‘easy to use’ by 60.8% (n = 14) of participants. They noted that a minimum amount of time was needed to obtain information regarding speech intelligibility. Over a quarter (n = 6; 26.1%) found the ICS ‘very easy to use’, and some (n = 3; 13.1%) were neutral towards the tool’s usability. It was generally found that the tool assisted the SLTs to obtain a better understanding of the child’s intelligibility in different contexts. They valued having a resource available in all official languages. It assisted them with their goals while using a holistic approach, based on the ICF-CY (World Health Organization, 2007). However, some found the scale redundant in practice when information had been previously obtained.

Table 1. Overview of SLT participants and their use of the Intelligibility in Context Scale over a three-week period.

<table>
<thead>
<tr>
<th>Participant</th>
<th>Languages that SLT can speak/offers therapy in</th>
<th>Frequency of ICS administration during three-week period</th>
<th>Languages in which ICS was administered</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>English</td>
<td>2</td>
<td>Afrikaans</td>
</tr>
<tr>
<td>B</td>
<td>English</td>
<td>5</td>
<td>English, Afrikaans</td>
</tr>
<tr>
<td>C</td>
<td>Afrikaans</td>
<td>1</td>
<td>English</td>
</tr>
<tr>
<td>D</td>
<td>English, Afrikaans</td>
<td>0</td>
<td>–</td>
</tr>
<tr>
<td>E</td>
<td>English, Afrikaans</td>
<td>9</td>
<td>English, Afrikaans, isiNdebele, isiZulu, Sesotho, Setswana</td>
</tr>
<tr>
<td>F</td>
<td>English, Afrikaans</td>
<td>3</td>
<td>Afrikaans, Setswana</td>
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<td>G</td>
<td>English, Afrikaans</td>
<td>5</td>
<td>English, Afrikaans, isiXhosa</td>
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<td>H</td>
<td>English, Afrikaans</td>
<td>2</td>
<td>English</td>
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<td>I</td>
<td>English, Afrikaans</td>
<td>0</td>
<td>–</td>
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<tr>
<td>J</td>
<td>English, Afrikaans</td>
<td>0</td>
<td>–</td>
</tr>
<tr>
<td>K</td>
<td>English, isiZulu</td>
<td>2</td>
<td>Afrikaans, isiZulu</td>
</tr>
<tr>
<td>L</td>
<td>English, isiXhosa</td>
<td>3</td>
<td>English, Sesotho</td>
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<tr>
<td>M</td>
<td>English and isiXhosa</td>
<td>0</td>
<td>–</td>
</tr>
<tr>
<td>N</td>
<td>English, Afrikaans, Portuguese</td>
<td>3</td>
<td>English, Afrikaans</td>
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<tr>
<td>O</td>
<td>English, French</td>
<td>2</td>
<td>English</td>
</tr>
<tr>
<td>P</td>
<td>English, Afrikaans and isiZulu</td>
<td>8</td>
<td>English, Afrikaans, isiZulu</td>
</tr>
<tr>
<td>Q</td>
<td>English, Afrikaans and isiZulu</td>
<td>3</td>
<td>English, Afrikaans, isiZulu</td>
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<tr>
<td>R</td>
<td>English, Afrikaans and isiXhosa</td>
<td>0</td>
<td>–</td>
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<tr>
<td>S</td>
<td>English, Afrikaans and isiXhosa</td>
<td>3</td>
<td>English, Afrikaans, isiXhosa</td>
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<td>T</td>
<td>English, Afrikaans, Sesotho</td>
<td>0</td>
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<td>U</td>
<td>English, Afrikaans, Setswana</td>
<td>4</td>
<td>English, Afrikaans</td>
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<td>V</td>
<td>English, Afrikaans, Setswana, isiXhosa</td>
<td>5</td>
<td>English, Afrikaans, Setswana</td>
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<tr>
<td>W</td>
<td>unknown</td>
<td>3</td>
<td>English, isiZulu, Setswana</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>63</td>
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</table>
SLTs noted that questions used in the translated versions of the ICS were understood by most families. One parent struggled with the concept of a rating scale and needed support with this aspect. Others were unable to make use of the written form due to the parents’ limited literacy abilities. In these cases the SLTs helped parents complete the scale by reading it aloud and noting their response. One SLT noted that parents did not always know how to answer the questions as they reported not to know how other communication partners understood their child. In such cases they generalized their own understanding of their child’s intelligibility, which may have reduced the reliability of the scale.

SLTs were asked to comment on the translations, especially regarding the languages they knew and the opportunity they had to administer the different versions. They suggested that the translations were clear and easily understood and experienced no difficulties with them. They liked the fact that English was included in parentheses for all the translated versions. There was some difficulty with the word ‘acquaintance’ in the English version, which had to be clarified in some instances for parents who were not sure exactly what it meant. In addition, the meaning of ‘understand the child’ needed to be explained to some parents. Another SLT reported that the ICS was more suitable for SLTs who are fluent speakers of the specific languages. Where an SLT is not familiar with a language they may need the assistance of an interpreter to understand responses given.

SLTs made suggestions on how to improve the usability of the ICS. Three participants suggested that context, for example home and school environments, should be mentioned more explicitly. One participant from Johannesburg, who offers therapy in English, Afrikaans and Portuguese, suggested that the tool should be extended to cover language areas too (e.g. syntax and vocabulary). An SLT from the Western Cape, who offers therapy in English, Afrikaans and isiXhosa, recommended that further instructions explaining the rating scales should be provided on the ICS forms to give more detail to the parents in their home language.

Five SLTs met with the first author for one-to-one semi-structured interviews about their experiences of using the ICS. They were all based at tertiary institutions (teaching hospitals) and worked with the Afrikaans, isiXhosa and isiZulu versions of the scale only. All five of the SLTs were fluent in English and Afrikaans. Four of the five SLTs were first language English speakers; and one was a first language Afrikaans speaker. They all had limited ability to speak and understand isiXhosa.

<table>
<thead>
<tr>
<th>Language in which ICS was administered</th>
<th>Total number of administrations</th>
<th>Number of times clients were able to self-administer the scale</th>
<th>Number of times the scale was read out loud to the family by either the SLT or an assistant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afrikaans</td>
<td>26</td>
<td>8</td>
<td>18</td>
</tr>
<tr>
<td>English</td>
<td>22</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>isiZulu</td>
<td>5</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Setswana</td>
<td>4</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>isiXhosa</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Sesotho</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>isiNdebele</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Sepedi</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>isiSwati</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Tshivenda</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Xitsonga</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Many of the themes emerging from the semi-structured interviews were similar to those that had emerged already from the electronic survey. They indicated that the ICS was user-friendly and that it was useful to have a screening tool in the first language of speakers (e.g. isiXhosa). Some indicated that the ICS did not provide any more information than would be obtained during a case history interview, and that it did not contribute additional information to assessment or management in their urban setting, but may be more useful in a community clinic or rural setting with younger children. SLTs who participated in the interviews were all based in teaching hospitals and some of their uncertainty regarding the tool’s value may have reflected that context. They were most likely to have access to interpreters, and work with children with a range of severe difficulties (feeding, swallowing, language, etc.), which may have meant the ICS was less useful to them than SLTs working in the community.

IV Discussion

The ICS is a subjective rating scale developed by McLeod et al. (2012a) to describe the intelligibility of children in various contexts through a parent-focused questionnaire. Given the need for more culturally appropriate assessments in South Africa, and the close link between intelligibility and context, we focused on describing the translation of the ICS and its usability in South Africa. The first objective of this study was to develop translations of this scale and compose a set of culturally appropriate translations for all official languages in South Africa. The second objective was to describe the usability of the ICS translations by means of questionnaires and semi-structured interviews with SLTs.

The translation and adaptation process of the scale proved more challenging than its short and simple appearance suggested. There were four main conceptual aspects that proved problematic (immediate/extended family; acquaintances; strangers/unfamiliar people; hear and understand) and two linguistic areas (dialects, pronoun usage). In the Bantu languages the distinction between ‘immediate family’ and ‘extended family’ is not deemed necessary: they are all family. Similarly, the words ‘acquaintance’ and ‘stranger’ do not have equivalents in all the Bantu languages focused on in this study. These apparent linguistic issues reflect underlying different worldviews about the cultures in question.

Ubuntu is an African concept concerned with the expression of human dignity, compassion and collectiveness (Nussbaum, 2003). It is a social philosophy whereby ethical considerations between individuals, be it friends or strangers, are highly regarded. Kamwangamalu (1999) refers to Ubuntu from a sociolinguistic perspective, explaining that it is considered a collective solidarity, in which the individuals’ perspective is based on the perspective of others. In many traditional African cultures Ubuntu can be seen as a manifestation of ‘collectivism’ and interdependence, which stands in contrast to more individualistic cultures often exemplified by the competitiveness of Western society (Msila, 2014; Lanigan, 2012). Knowing about the different cultural perspectives and worldviews of the speakers of the different languages in South Africa may account for some of the challenges that arise in a translation task such as the one undertaken here. The lack of distinction between the various family terms in most of the Bantu languages in this project may indicate that Ubuntu is embedded in many of these cultures, and that these principles influence individuals’ use of language. Our findings suggest that culture-specific factors must be considered together with the language-specific features detailed by Van der Merwe and Le Roux (2014).

Ultimately it was important to make sure that all translated versions of the ICS conveyed the original, conceptual intent of the tool as much as possible while achieving cultural relevance. Each of the languages and cultures were different from one another, and from the population for which the original tool was developed. The challenging process of cross-cultural adaptation ultimately
led to the development of 10 new versions of the ICS, which seem to achieve conceptual equivalence with the original (e.g. as evidenced by the forward and back translation process, and appropriate responses from the participants with whom it was trialed), whilst attempting to approximate semantic equivalence for every item.

The participants in Study 2 were from a range of areas in South Africa and offered therapy in multiple languages. Many SLTs administered the tool verbally, mostly in Afrikaans and English. Most found the tool easy to use, and suggested that it assisted them, and that they would use it again. SLTs reported that parents easily understood the tool, and that the translations were useful. Some noted that most of the information the ICS seeks to obtain had already been obtained using the case history form. These were mostly SLTs working in the tertiary hospital setting where children’s difficulties tend to be severe and SLTs already have access to detailed case history information and interpreters.

The ICS was administered in fewer of the Bantu languages than might be expected given South Africa’s demographics. This may be because even with translated resources available in the clinical setting, SLTs may have still used their first language to administer assessments and provide therapy (Jordaan, 2008; Williams and McLeod, 2012). Children need to be assessed in all their languages and treated accordingly with awareness of the relationship between the languages (De Lamo White and Jin, 2011; McLeod, Verdon, Bowen and the International Expert Panel on Multilingual Children’s Speech, 2013). When the ICS was administered in written form, it was used in English more than any other language, possibly owing to the fact that the language of learning and teaching in a majority of South African schools is English and Afrikaans (Department of Basic Education, 2010). Many first language speakers of the Bantu languages prefer to read in English because that is what they have been exposed to most at school (O’Connor and Geiger, 2009). In cases where families could not read, SLTs may have experienced difficulties in reading the translated scales in languages in which they are not proficient. Accurate reading of the different versions will require practice and guidance from a first language speaker. A recent study in Jamaica validated the use of an audio-recorded version of the ICS (Washington et al., 2015), and validation of an audio-recorded version of the ICS may be appropriate for the South African context as well.

Clinical implications

For SLTs working in South Africa, the ICS is now available in all 11 official languages. These versions of the ICS could be used to evaluate a child’s intelligibility at the initial meeting with the family. There are few resources of this nature available in South Africa, and this preliminary study suggests that SLTs may find it a valuable tool. As in all projects of this nature, the tool is likely to require further refinement, and will be enhanced by the development of complementary tools to assess South African children’s speech and language skills in greater depth.

It is recommended that the original English ICS (McLeod et al., 2012a) be evaluated in the South African context in order to be validated and normed on this population. McLeod et al. (2012b, 2015) established criterion validity through correlations of the original ICS with the Diagnostic Evaluation of Articulation and Phonology (DEAP) (Dodd et al., 2002), and Ng et al. (2014) established criterion validity through correlations of the original ICS with the Hong Kong Cantonese Articulation Test. However, establishing criterion validity of the ICS within the South African context may be challenging as there are few, if any, standardized speech assessments for the population. Further research needs to be conducted in order to standardize speech assessments in this context. Our focus in this article was on translation and clinical usefulness rather than validation.
2 Limitations

Only seven of the 11 ICS versions for South Africa (Afrikaans, English, isiNdebele, isiXhosa, isi-Zulu, Sesotho and Setswana) were trialed by SLTs in Study 2. The remaining four translated scales (Sepedi, siSwati, Tshivenda and Xitsonga) have not yet been trialed for usability in clinical practice. The majority of speakers of these languages live in or close to Limpopo and Mpumalanga (Statistics South Africa, 2011). SLTs in these regions were not available to participate in the study; therefore conclusions cannot be made about the usability of these four translations.

Participants in Study 2 comprised a small sample of SLTs with the majority situated in the Western Cape. According to Statistics South Africa (2011) Afrikaans and English are two of the most predominant home languages in the Western Cape. This reduced the generalizability of the current research to the South African population. The majority of the participating SLTs had graduated from the same university where the first author was based. This may have contributed to sample bias. Although no SLTs reported the scales difficult to use, participants who found it challenging or perceived that it would be difficult, may not have consented to participate. The interviews that took place with locally based SLTs will have further resulted in a geographical bias. Further evaluation is required by a larger sample of SLTs using all of the translations developed.

V Conclusions

Ensuring adequate services for all children and their families, irrespective of language, must entail more than just translation of resources. SLTs should strive to ensure they develop the necessary abilities and resources to offer services in all languages to a range of people. It may be that many more families access SLT services more willingly, if the profession can show more relevance and understanding of the lives, languages and cultures of all the diverse people they serve.

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Declaration of Conflicting Interest

The authors declare that there is no conflict of interest.

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References


Appendix 1

Translation checklist

1. Do you feel that the translated ICS (Intelligibility in Context Scale) as a whole makes use of appropriate language and structure?
2. Is appropriate language and structure used for the title of the tool (the Intelligibility in Context Scale)?
3. Is appropriate language and structure used for all case history questions (name, birth date etc.)?
4. Is appropriate language used for the rating scale options (i.e. always, usually, sometimes, rarely, never)?
5. Is appropriate language and structure used for all 7 questions?
6. Is appropriate language and structure used for the footnote?
7. Do you feel that the dialect being used in the translated version of the ICS is one that would be understood by all speakers of that language across the South African regions?
8. Does the translated version of the ICS achieve the same aim as the English version of the ICS?

Appendix 2

Instructions and questionnaire/checklist given to SLTs

Instructions:

In the pack (attached) you will find:

1. Copies of the Intelligibility in Context Scale (McLeod et al., 2012a) in each of the 11 official languages of South Africa;
2. A checklist on which you should indicate which translations of the ICS you administer during the time period; and
3. A questionnaire.

We ask that you consider using the ICS in your routine clinical work with clients. The scale has been designed so that parents (or guardians or family members) can fill it in based on their knowledge of their child’s speech. They can be given the ICS that is in their home language. Alternatively you or one of your colleagues or a family member could read out the questions and the ICS could be verbally completed in this way. For each administration we ask that you note the language used, whether the tool was self-administered or read out aloud verbally or written and for what purpose it was administered. We ask that you administer this tool over a period of three weeks (15 working days) and record the administrations on the given checklist. Even if you only use the tool once (or not at all) we would still appreciate your comments. At the end of the given time frame we request that you fill in the questionnaire regarding the tool’s usability. Finally it is requested that you return the completed checklist and survey to us in a manner that best suits you (e.g. email, fax, post).

Name:
Town/City:
Number of times ICS administered in total over study period:
Languages in which therapy is offered:
<table>
<thead>
<tr>
<th>Languages</th>
<th>Number of times administered</th>
<th>Administration: Verbal/Written (V/W):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afrikaans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>English</td>
<td></td>
<td></td>
</tr>
<tr>
<td>isiNdebele</td>
<td></td>
<td></td>
</tr>
<tr>
<td>isiXhosa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>isiZulu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sepedi</td>
<td></td>
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<tr>
<td>Sesotho</td>
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<tr>
<td>Setswana</td>
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<tr>
<td>Siswati</td>
<td></td>
<td></td>
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<tr>
<td>Tshivenda</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xitsonga</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL:</td>
<td>V = W =</td>
<td></td>
</tr>
</tbody>
</table>

Diagnosis/reason for referral (note for all clients that were administered ICS):
Reason for use of ICS tool (note for all clients):
How do participants view ICS (note any comments, difficulties):
Your comments on usefulness of the tool:

<table>
<thead>
<tr>
<th>Did the tool assist you?</th>
<th>Yes</th>
<th>No</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Would you use the ICS again?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Suggestions for improving the usability of the tool: