CULTURAL ADAPTATION OF A SCREENING INSTRUMENT TO DETECT DEVELOPMENTAL DELAYS IN ATIKAMEKW CHILDREN

Clinicians and researchers interested in screening for developmental delays among First Nations children face the lack of measuring instruments designed and validated for them. The use of measuring instruments not taking account of linguistic, cultural and social aspects characterizing a particular cultural group is an issue as to the validity of the results.

A study from Findlay and al., published in 2014, indicates the need to establish specific standards for children of Canadian First Nations rather than resorting to those developed for the Canadian children population in general. This study highlights the probability that the age of acquisition of certain developmental skills differs among First Nations children. Longitudinal studies and surveys of Canadian and Quebec children have excluded those of First Nations because of the lack of culturally appropriate instruments. What is known then about the development of these children? On a developmental aspect, what vulnerabilities do they have? With which measuring instruments can they be evaluated?

This article reports the translation and adaptation of Ages, Stages Questionnaires-3 (Squires and Bricker, 2009) with children aged 48 and 54 months (4 years and 4 years and 6 months) living in an Atikamekw community. The first part provides a general definition on developmental delays and screening. A description of the tool used is then proposed. The second part outlines the linguistic and cultural aspects to consider in a cross-cultural adaptation process of a measuring instrument. Finally, we will expose the method used to achieve cross-cultural adaptation and key adjustments that were made to the initial versions.

DEFINITIONS AND DESCRIPTION OF THE TOOL USED

Developmental delay and screening

Developmental delays are defined as a delay or slow acquisition of developmental skills and adaptive behaviours that appear within one or in many spheres of development. Development spheres concern communication (language), gross and fine motor skills, problem solving (cognitive development), and individual or social skills (autonomy and socio-emotional development). Delay are usually reversible.

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and their causes are often related to a lack of stimulation or organic disease disrupting children’s learning (Shevell, 2010).

Screening for developmental delays is achieved using an instrument designed for this particular purpose. This is a first step leading to early identification of children whose development is delayed or are at risk. The second step is to refer the children identified to professionals who will conduct further evaluation of their difficulties. The goal of screening is to identify vulnerable children as early as possible in their development. This early identification should lead to the establishment of an intervention fostering recovery or preventing the worsening of the problems (Pool Hourcade, 2011).

**Ages, Stages Questionnaires-3 (ASQ-3)**

A French version of *Ages, Stages Questionnaires, Third Edition* (Squires and Bricker, 2009) was used to perform the Atikamekw translation and adaptation. ASQ-3 is a screening instrument for developmental delays for children aged 1 to 66 months (from 1 month to 5 years and 6 months). Various cultural groups advocate its use provided that the necessary changes are made. Moreover, the Child and Family Center Step by Step (2015) recommends it to First Nations communities in the wake of its 2007 experiment. ASQ is the most used instrument by Aboriginal communities of Western Canada. It was also recommended as part of a study by The Maternal and Child Health Program for First Nations and Inuit Health Branch (Stout and Jodoin, 2006). The instrument is intended for parents and practitioners working with early childhood.

Each questionnaire consists of 30 items that focus on the children’s skills. The items are grouped into five areas. These areas or spheres of development are a) communication (language), b) gross motor skills, c) fine motor skills, d) problem solving (cognitive development), and e) individual and social skills (autonomy and socio-emotional development).

**Linguistic and cultural aspects**

The cross-cultural adaptation of measuring instruments is a complex process aiming to address language and cultural aspects distinguishing the two cultural groups given so that the adapted version of test is equivalent to the original version of the test. To achieve this equivalence, it is important to control, in the adaptation process, the items called “bias”, which are sources of interference. Van de Vijver and Tanzer (1997) distinguish three types of bias: construct bias, method bias, and item bias (differential item functioning). The first type of bias refers to the phenomenon or concept studied. The concept under consideration must have the same meaning for both cultures. The second type of bias concerns methodological items pertaining to the test. These include differences between the samples and the degree of familiarity of cultural groups with the test content, apparatus or type of administration. The third type of bias is related to items (questions). For example, it can be introduced because of the poor translation quality or the lack of cultural match.

Peña (2007) suggests paying attention to four types of equivalence when it comes to conducting cross-cultural adaptation of instruments for measuring child development. These types of equivalence are of linguistic, cultural, functional, and metric orders. The linguistic equivalence focuses on the consistency of words, sentences, meaning and language level used between the source language and the target language (Hambleton, 2001). Cultural equivalence is defined in terms of understanding and interpreting similar elements or concepts in both languages and both cultures. Functional equivalence refers to the ability of the instrument to offer the same opportunity to observe and measure a skill, behaviour or concept in both versions of the test. Finally, the metric equivalence refers to the degree of difficulty of items which must be comparable in both versions.
THE CROSS-CULTURAL ADAPTATION METHOD APPLIED

The method used for the purpose of this study was largely inspired by the one proposed by Vallerand (1989). This method involves seven steps of which the first three concern the translation and adaptation of the test.

Phase 1: Preparation of the Preliminary Version

The first step in cross-cultural adaptation was to translate and adapt the questionnaires from the source language (French) to the target language (Atikamekw). A committee composed of eleven people, consisting of ten educators from a childcare centre and the lead researcher, was organized to do the work. Guidelines were given to the committee. It was the adaptation of a guide developed by Hambleton and Zenisky (2011) which aims at supporting the adjustment process of tests. The elements contained in this guide focus on grammar and sentences, items’ format, the equipment used and other aspects of culture. The second stage of Phase 1 was to perform reverse translation (or back translation) of questionnaires (from Atikamekw to French). The four people involved were members of the educational services staff in the community. Their work was individual.

Phase 2: Assessing the preliminary version and preparing the experimental version

This step was to review the translated versions (French-Atikamekw) and reverse translations (Atikamekw-French) in order to compare the translated items and assess divergences. This work was achieved to create the experimental version. This step was completed through a committee-oriented approach. This committee was composed of four members. An adaptation of Hambleton and Zenisky’s guide (2011) cited earlier was also proposed to them.

Phase 3: Pre-testing the experimental version

This phase was to verify comprehension of the experimental version’s items (questions). This audit was conducted among parents, educators, and children. In total, three parents, two teachers, and three children participated in the validation of the 48 months and 54 months experimental version questionnaires.

CONCLUSION

This article described the methodology used for the translation and adaptation of Ages, Stages Questionnaires-3 for Atikamekw children aged 48 and 54 months. The linguistic and cultural aspects to be taken into account to promote equivalence between source and target versions were exposed. Items in the fields of communication, problem solving, and individual and social skills were adapted to be compatible with the Atikamekw culture. The adjustments made have also contributed to increase the equivalence between the two versions.
The work undertaken in the framework of the author’s doctoral study in partnership with community stakeholders has allowed the adaptation of a screening instrument to detect developmental delays in Atikamekw children. The adapted version of the instrument enables a more sensitive and specific identification of children difficulties. The availability of a suitable tool improves knowledge about the overall development of children.

Work is continuing to conduct psychometric validation of the screening tool’s adapted version. This validation will help establishing standards considering the specific characteristics of Atikamekw children living in a rural community.

REFERENCES


