

# The translation and cultural adaptation of the Child Behavior Checklist for use in Israel (Hebrew), Korea, the US (Spanish), India (Malayalam and Kannada), and Spain

Diane Wild<sup>1</sup>  
Tamzin Furtado<sup>1</sup>  
Mallik Angalakuditi<sup>2</sup>

<sup>1</sup>Oxford Outcomes, Oxford, UK;

<sup>2</sup>Eisai Inc., Woodcliff Lake, NJ, USA

**Background:** The Child Behavior Checklist (CBCL) is a caregiver rating scale for assessing the behavioral profile of children. It was developed in the US, and has been extensively translated and used in a large number of studies internationally.

**Objective:** The objective of this study was to translate the CBCL into six languages using a rigorous translation methodology, placing particular emphasis on cultural adaptation and ensuring that the measure has content validity with carers of children with epilepsy.

**Methods:** A rigorous translation and cultural adaptation methodology was used. This is a process which includes two forward translations, reconciliation, two back-translations, and cognitive debriefing interviews with five carers of children with epilepsy in each country. In addition, a series of open-ended questions were asked of the carers in order to provide evidence of content validity.

**Results:** A number of cultural adaptations were made during the translation process. This included adaptations to the examples of sports and hobbies. An addition of “milk delivery” was made to the job examples in the Malayalam translation. In addition, two sexual problem items were removed from the Hebrew translation for Israel.

**Conclusion:** An additional six translations of the CBCL are now available for use in multinational studies. These translations have evidence of content validity for use with parents of children with epilepsy and have been appropriately culturally adapted so that they are acceptable for use in the target countries. The study highlights the importance of a rigorous translation process and the process of cultural adaptation.

**Keywords:** epilepsy, multinational studies, content validity

## Background

The Child Behavior Checklist (CBCL) is a caregiver rating scale for assessing a child’s overall behavioral profile. The measure assesses anxiety, depression, and aggressive, noncompliant, and undercontrolled behaviors. Several sub-areas are measured including social withdrawal, somatic complaints, destructive behavior, social problems, thought problems, attention problems, and delinquent behaviors. The first section consists of 20 competence items and the second section consists of 120 items on behavioral and emotional problems during the past 6 months. The CBCL was developed in the US and has been translated into 85 different languages including nine Indian languages,<sup>1</sup> using a variety of translation methods.

Correspondence: Mallik Angalakuditi  
Robinson School of Business, Georgia  
State University, Atlanta, GA, USA  
Tel +1 203 798 5150  
Email hydmallik02@hotmail.com

The CBCL has been used extensively internationally as is evidenced by reports of large multinational studies where data has been compared across countries.<sup>2</sup> In addition there are a number of papers which focus on the translation and psychometric properties of the CBCL in a particular country.

For example, Syed et al<sup>3</sup> translated the CBCL into Urdu using a seven-step translation methodology which included translation and back-translation as well as focus groups with parents in Pakistan in order to obtain a better cultural understanding of difficult concepts. Senaratna et al<sup>4</sup> translated the CBCL into Sinhala for use in Sri Lanka using a rigorous translation, back-translation, expert review, and pilot testing method. Similarly, Albores-Gallo et al<sup>5</sup> translated the CBCL into Mexican Spanish using a forward and back-translation methodology, and quantitatively tested the translation by administering the questionnaire to parents of children in the community as compared with those at a psychiatric children's hospital. Their findings showed that the CBCL translation was suitable for use in Mexico.

Carter et al<sup>6</sup> were involved with a study which adapted the measure into Russian, using a forward and back-translation process employed by "professional linguists, psychologists, and psychiatrists", and further measured the psychometric properties of the adapted Russian version. Carter et al reference two items which required cultural adaptation, notably item 72 ("Sets fires"), which was altered to read "Often plays with fire, sets fires," and item 111 ("Withdrawn, doesn't get involved with others"), which was adapted to read "Does not maintain contact with children or adults".

Beaton et al<sup>7</sup> developed a set of guidelines for the process of cross-cultural adaptation of self-report measures. They describe cross-cultural adaptation as the process that looks at both language (translation) and cultural adaptation issues in the process of preparing a questionnaire for use in another setting. Beaton and colleagues suggest that there are four areas where equivalence should be sought between the source and target versions of a measure during the process of translation and cultural adaptation:

- Semantic equivalence  
Do the words mean the same thing? Are there multiple meanings to a given item? Are there grammatical difficulties in the translation?
- Idiomatic equivalence  
Colloquialisms, or idioms, are difficult to translate. An equivalent expression may have to be created in the target language.

- Experiential equivalence  
Items are seeking to capture the experience of daily life. In some cultures, a given task may not be experienced (even if it is translatable), in which case the item needs to be replaced by an item capturing a task that is experienced, which is of a similar nature to the original task.
- Conceptual equivalence  
Often words hold different conceptual meanings between cultures (for example, the concept of family may be different) and the translation needs to ensure that the concepts are equivalent across translations.  
Given that the existing and new translations of the CBCL are currently used and will be used in future studies where the data will be pooled across countries, it is important that the translations have equivalence. This paper describes the translation and cultural adaptation process undertaken in six languages (five countries) to produce translations with equivalence across the languages and with the original CBCL so that the data collected in future multinational studies using the translations can be pooled with confidence. Although the CBCL was developed for use in the general population, it has been validated with children with epilepsy<sup>8</sup> and this study utilized a sample of parents of children with epilepsy to ensure that the measure has content validity with this population so that it can be used with this group in future studies.

## Methods

The CBCL was translated and linguistically validated into six languages (Spanish for Spain, Spanish for the United States, Kannada, Malayalam, Hebrew, and Korean) using the standard industry methodology.<sup>9</sup> The method comprises dual forward translations, one of which is performed by a lead language consultant ("investigator") in the target country – these individuals were recruited for their expertise and experience in the translation and validation of patient-reported outcomes measures and cognitive debriefing. The other translator was chosen for their experience in the translation of medical and quality of life measures. Each translator completed their translation separately, with the aid of an item definition report (a document that explains and elaborates on the items in the source questionnaire).

The two forward translations were then presented to the in-country investigator, who was asked to reconcile the two versions by choosing the best of each translation, to create one optimized translation. Subsequently, the reconciled translation was back-translated by two individuals who had no contextual knowledge of the file and were not aware of the source English CBCL.

The project manager was then able to use these back-translations as a window into the translated version, to check the accuracy and detail of the translation against the source text. Any discrepancies were discussed and resolved with the in-country investigator.

The back-translation review report was then sent to the instrument developer for review. Any further comments were again discussed with the investigator until a satisfactory resolution was found.

To ascertain the content validity, cultural relevance, suitability for the target audience, and comprehensibility of the translation, cognitive debriefing interviews were then conducted in each country with five parents of children with epilepsy (aged between 6 and 17 years). Parents were mainly recruited through advertisements, and were required to sign an informed consent form prior to the interview. Their right to withdraw from the interview, and confidentiality, were fully explained prior to their taking part in the process.

Parents were individually interviewed in a face-to-face meeting with the in-country investigator. Investigators were given an interview guide, which standardized the interview procedure across the countries. The procedure was as follows:

1. Initially, the interview procedure was explained to the interviewees, their confidentiality was established and their consent to proceed with the interview sought.
2. Interviewees were then asked twelve open-ended questions about their child's behavior and quality of life. The questions were aimed at establishing content validity by investigating the themes important to the parents. Optional prompt questions were provided to obtain further information from interviewees, if necessary.
3. On completion of these questions, the interviewee was given the CBCL document and asked to fill it in, thinking about their child's behavior and development.
4. Subsequently, the interviewer went through the CBCL with the interviewee, using retrospective probing questions to determine whether the respondents found the wording suitable for use in the context, understandable, and clear. Respondents were also asked to explain each item in their own words, so that the project managers could use these wordings to ascertain their level of understanding in comparison with other countries.

Throughout the translation process, cultural adaptation was encouraged and in-country investigators were asked to adapt items in order to ensure that semantic, idiomatic, experiential, and conceptual equivalence was reached. Given the fact that the CBCL is essentially a list of behaviors,

the primary concern for equivalence lay in the experiential category. Cognitive debriefing interviews played a key role in establishing whether or not further adaptation was required.

## Results

All of the interviewees were parents of children with epilepsy and the children were of varying ages (ranging between 6 and 17 years) and had been diagnosed with epilepsy for between 1 and 16 years. In each country a mixture of mothers and fathers were interviewed. Eighteen of the children reported by the respondents were male, and twelve female. Diagnoses ranged from absence seizures (petit mal/idiopathic partial or generalized) to myoclonic and atonic seizure types.

Data was freely provided by study participants, who had consented to the interview process and understood that they were at liberty to discontinue the interview at any time. Respondents were assured that their responses were anonymized and that data relating to their child's illness was also entirely anonymous – no further personal data (eg, names, addresses, or contact details) were provided to the researchers, but were retained only with the individual interviewers in each country so as to further preserve respondent confidentiality.

During the translation process a number of cultural adaptations were made. As expected, given the nature of the CBCL, these cultural adaptations were made in order to ensure that the translations had experiential equivalence with the original US English source version of the CBCL.

The CBCL was completed in an average of 28 minutes. In general, cognitive debriefing interviews showed that the translations of the questionnaire were straightforward and well understood. Open-ended questioning showed that parents mentioned a number of issues which were itemized in the CBCL, highlighting its relevance for the target population of this study and its cultural validity.

## Sports

Question 1 of the CBCL asks the parent to list the sports their child most likes to participate in and lists some examples as follows: swimming, baseball, skating, skate boarding, bike riding, and fishing. In terms of the open-ended questioning on this issue, swimming was mentioned in Israel, the US, and Spain. Baseball was mentioned in the US and Korea. None of the other sports were mentioned which is not surprising because the sports listed in the CBCL are very US-focused.

There was a wide variety in terms of the sports that the parents reported that their children participated in. In the US three of the five parents reported that their children did not enjoy any sports at all. In Korea all of the parents mentioned that their children were active in sports including table tennis and martial arts. In Israel there was an emphasis on the social aspect of sport and on being members of sporting clubs.

Some experiential equivalence-focused cultural adaptation was conducted on this item, particularly for baseball and skateboarding which are quite culturally specific to the country of origin of the questionnaire (the US). For example in India (Kannada) one of the respondents did not understand what baseball was, although he had heard of it. This was replaced with “football”, and “skateboarding” was replaced with “cricket” which is more popular in India. Also in India (Malayalam), “swimming” was changed to “football”. The reason for this is that although children do go swimming in India, it is less common than playing football. The Malayalam investigator also chose to remove “baseball”, “skating”, and “skateboarding”. Similarly, the Hebrew investigator chose to replace these items with “football” and “basketball”, which are more common for Israel. “Skateboarding” was removed for Korea also. The resulting examples for each country were therefore culturally specific which means that respondents were better able to relate to the items and respond appropriately.

## Other sorts of hobbies or activities

Question 2 of the CBCL asks the parent to list their child’s favorite hobbies, activities, and games other than sports. The examples listed are as follows: stamps, dolls, books, piano, crafts, cars, computers, singing, etc.

A wide variety of other hobbies and activities were mentioned by the parents of the children in the various countries, with the Israeli parents again mentioning the social aspect of hobbies and leisure activities. Singing and dancing, and playing the guitar were only mentioned in Spain, and drawing was only mentioned in India and US Spanish.

Some experiential focused cultural adaptation was done on this item. For example, in India (Kannada) one of the respondents did not understand what a piano was. This was replaced with flute playing in the final Kannada CBCL. However, in general, investigators reported that the examples were cross-culturally valid and could be translated literally without problems.

## Organisations, clubs, teams, groups

The child’s engagement in organizations, clubs, teams, and other groups is referenced in the CBCL, with question 3 asking

parents to list any organizations, clubs, teams, or groups their child belongs to, as well as rating their degree of involvement in comparison with others of a similar age. Open-ended questioning showed that this was cross-culturally less common as a concept than the other hobbies and activities, though two respondents in Korea listed specific clubs that their child belonged to (a church group and bicycle club, respectively).

Experiential equivalence-focused cultural adaptation was necessary for Hebrew, for which the term for organization had to be removed because of connotations of the military and/or cults. It was decided that the concepts “clubs, teams, and groups” amply covered the range of organizations that the children may be involved with and therefore the concept of “organizations” could be removed without impacting scoring.

## Jobs or chores

Question 4 of the CBCL asks about jobs and chores performed by the child, as well as asking about their capabilities in terms of how well they perform the responsibilities in comparison with others of a similar age. The examples used in the US original version are as follows: paper route, babysitting, making bed, working in a store, etc).

Many of the children had general tidying and other household chores to do but there did not seem to be any differences between the countries here, though the US respondents reported significantly fewer responsibilities and chores than other countries. The variety of responsibilities given to the child was consistent across cultures; most included tidying the bedroom and living areas, folding clothes, and so on. However, in the Malayalam translation “milk distribution” was added to the list of example jobs or chores to aid in the cultural relevance of the item.

## Relationships

Questions 5 and 6 of the CBCL relate to communication with others and social competency, with specific reference to how the child gets on with their brothers and sisters, as well as asking about how well they get on with other children and the number of close friends the child has.

In the open-ended questioning phase, it was apparent that the children generally seem to be sociable and have no problems relating and getting on with other children and there seemed to be no differences between the countries.

For item 6 some cultural adaptation was required to establish conceptual equivalence with a term. it was necessary to pay careful attention to the translations used for items such as “get along with” and “behave”, since these can be

expressed differently across cultures (for example, “obey” was suggested for “behave” in Korean and was kept because the meaning of the term “obey” is broader than the meaning in English and was the closest wording available to convey the meaning of the source text).

## Schooling

In the “Performance in academic subjects” category (Question 7), the CBCL lists common academic subjects in school and asks the respondent to rate the child’s performance on a four-point rating scale. Respondents are then asked whether their child has received special educational services, has repeated grades, or has had academic or other problems at school.

In order to achieve experiential equivalence, cultural adaptation was necessary for the examples of lessons: for example, “arithmetic” was removed from the Korean translation since this is referred to as math only. Similarly, the references to non-academic subjects (in the original US English measure, gym, shop, and driver’s education) required adaptation for each country; for example, the Spanish utilized the example of “citizenship” classes, while others used art as a more common example of a non-academic subject than “shop”.

## Other areas of cultural adaptation

Some other examples of cultural adaptation were necessary: notably, items 59 and 60 which relate to sexual behavioral abnormalities in the child had to be removed entirely in the Hebrew versions since they would have been considered unacceptable for inclusion in a questionnaire. The removal of items from a validated measure is not usually recommended but in this case it was considered to be an essential step in ensuring that the remainder of the CBCL was completed.

Terminology had to be altered in Hebrew for the item “Does your child have any illness or disability (either physical or mental)?” In this language “mental” has negative connotations in this context and was replaced with the term “intellectual”.

Finally, some alterations were necessary in the wording for Korea, for example the item “smokes, chews, or sniffs tobacco” had to be altered to “smokes tobacco” since chewing and sniffing are not culturally valid concepts. Similarly, item 98 is about thumb sucking, but had to be worded as “finger sucking” to be idiomatically rendered in Korean.

## Discussion

This study aimed to translate and culturally adapt the CBCL in six languages (five countries) so that it can be used in

multinational studies and so that the data can be pooled across countries. The rigorous translation procedure aimed to ensure that the translations are culturally applicable and conceptually equivalent. In addition, using open-ended questions was used to provide evidence of content validity. During the translation and cultural adaptation process a number of adjustments were made to the translations which are forms of cultural adaptation. However, despite the fact that some people in India may not know what baseball is, it is likely that they will know that it is a sport and similarly someone who doesn’t know what a piano is may be able to assume that it is some form of hobby. Therefore, if cultural adaptation had not taken place and a translation of an unfamiliar behavior or object remained as an example as part of a question, it is unlikely that it would stop a respondent being able to understand the item. However, it is possible that it might distract them and they will certainly be aware that the questionnaire had been developed in another country or culture and had been translated. When cultural adaptation has taken place, respondents are more likely to be able to relate to the questions they are being asked and more likely to continue to complete a long measure such as the CBCL. Other examples of cultural adaptation may have a more significant impact on the respondents, for example, the military connotations of the term “organization” and the concern about the sexual behavioral abnormality questions amongst Hebrew speakers in Israel.

It is interesting to note, however, that there are currently 85 translations of the CBCL available and, with the exception of the Carter et al paper<sup>6</sup> describing the translation and cultural adaptation of the Russian version of the measure, there has been no mention of any cultural adaptations having taken place during the translation process. This does not mean that cultural adaptation has not taken place during the translation process or that if it hasn’t taken place there is a problem with the translation. It would be useful to have more information about the translation process utilized and about any cultural adaptations that have been done in order to assist with harmonizing translations with each other as well as with the source version in the future.

## Conclusion

The CBCL is an extensive checklist, and this study found that it amply covers the range of behaviors and the impact of epilepsy on the children’s behavior. The rigorous translation and emphasis on content validity and cultural adaptation have produced six translations of the CBCL that are culturally valid and can be used in multinational studies. In addition,

this study serves to highlight the importance of a rigorous translation methodology, including an emphasis on cultural adaptation where necessary.

However, as has been carried out with many of the other existing translations of the CBCL, quantitative evaluations of the translated versions obtained from a larger sample size would be helpful.

## Acknowledgments

The authors would like to thank Dr Thomas Achenbach and Ramani Sunderaju at ASEBA for their assistance and cooperation with the translation and adaptation procedure.

## Disclosure

The authors report no conflicts of interest in this work. The funding for this study was provided by Eisai Inc.

## References

1. Achenbach T. Achenbach System of Empirically Based Assessment (ASEBA), 2010. <http://www.aseba.org/index.html>. Accessed April 5, 2012.
2. Rescorla L, Achenbach T, Ivanova MJ, et al. Behavioral and Emotional problems reported by parents of children ages 6–16 in 31 societies. *Journal of Emotional and Behavioural Disorders*. 2007;15(3):130–142.
3. Syed EU, Hussein SA, Azam SI, Khan AG. Comparison of Urdu version of the strengths and difficulties questionnaire (SDQ) and the Child Behaviour Checklist (CBCL) amongst primary school children in Karachi. *Jo J Coll Physicians Surg Pak*. 2009;19(6):375–379.
4. Senaratna BC, Perera H, Fonseka P. Sinhala translation of child behaviour checklist: validity and reliability. *Ceylon Med J*. 2008;53(2):40–44.
5. Albores-Gallo L, Esperón-Vargas C, Cárdenas Zetina JA, Pérez Soriano AM, Villanueva Colin G. Validity and reliability of the CBCL/6–18. Includes DSM Scales. *Actas Esp Psiquiatr*. 2007;35(6):393–399.
6. Carter AS, Grigorenko EL, Pauls DL. A Russian adaptation of the child behavior checklist: Psychometric properties and associations with child and maternal affective symptomatology and family functioning. *J Abnorm Child Psychol*. 1995;23(6):661–684.
7. Beaton D, Bombardier C, Guillemin F, Ferraz MB. Guidelines for the process of cross-cultural adaptation of self-report measures. *Spine (Phila Pa 1976)*. 2000;25(24):3186–3191.
8. Gleissner U, Fritz NE, Von Leheb M, Sassen R, Elger CE, Helmstaedter C. The validity of the child behaviour checklist for children with epilepsy. *Epilepsy Behav*. 2008;12:276–280.
9. Wild D, Grove A, Martin M, et al; for the ISPOR Task Force for Translation and Cultural Adaptation. Principles of Good Practice for the Translation and Cultural Adaptation Process for Patient-Reported Outcomes (PRO) Measures: Report of the ISPOR Task Force for Translation and Cultural Adaptation. *Value Health*. 2005;8(2):94–104.

### Psychology Research and Behavior Management

Dovepress

### Publish your work in this journal

Psychology Research and Behavior Management is an international, peer-reviewed, open access journal focusing on the science of psychology and its application in behavior management to develop improved outcomes in the clinical, educational, sports and business arenas. Specific topics covered include: Neuroscience, memory & decision making; Behavior

modification & management; Clinical applications; Business & sports performance management; Social and developmental studies; Animal studies. The manuscript management system is completely online and includes a quick and fair peer-review system. Visit <http://www.dovepress.com/testimonials.php> to read real quotes from published authors.

Submit your manuscript here: <http://www.dovepress.com/psychology-research-and-behavior-management-journal>