RESEARCH PROTOCOL: THE CZECH VERSION OF PARCA-R

Aim: The aim of this research is to translate and validate the PARCA-R questionnaire into Czech language. The following research protocol will summarize the steps that need to be taken in order to translate and validate PARCA-R.

During the adaptation of PARCA-R into Czech language, we will follow the guidelines of **Beaton et al. (2000) - Beaton, D.E., Bombardier, C., Guillemin, F., & Ferraz, M.B. (2000). Guidelines for the process of cross-cultural adaptation of self-report measures.** *Spine, 25*(24), 3186-3191.

The adaptation process will proceed in the following steps:

1) **STEP 1:** The first translation (T1) of PARCA-R into Czech language should be done by a professional from the field - e.g. psychologist/pediatrician/developmental psychologist etc. who has a good knowledge of English language and is also a Czech native speaker.

2) **STEP 2:**The second translation (T2) should be done by a person, who is not a professional from the field of medicine/psychology, has a good knowledge of English and is also a Czech native speaker

3) **STEP 3:** For the purpose of this study, we will also do a translation made by a professional translator, in order to make sure that the translation is grammatically correct.

4) **STEP 4:** The three translations (mentioned above) will be reviewed and merged in order to avoid poor syntax, poor word choices, poor word order etc. One translation (T 1 2) should emerge during this process.

5) **STEP 5:** There is a need to acknowledge the slightly different language development in Czech children compared to the British children. For example, typically developing Czech child will not say the word "rip/tear" (as it is included in the vocabulary part of PARCA-R) because the Czech version of this word is too difficult to pronounce. Also, there will be some differences in the development of grammar. The language part of PARCA-R should be therefore done with a different approach, which is described below:

ADAPTATION OF THE LANGUAGE PART OF PARCA-R INTO CZECH LANGUAGE

As it is stated in the PARCA-R manual, the part that tests language development was originally adapted from the MCDI questionnaire (Mac-Arthur Bates Communicative Development Inventory) - for more detail see https://mb-cdi.stanford.edu/.

The MCDI questionnaire was, in turn, adapted into Czech language by professor Filip Smolik from the Czech Academy of Sciences. The Czech version of the MCDI questionnaire is called "DOVYKO".
We therefore decided to take a similar approach and take some parts of the DOVYKO questionnaire (which is basically MCDI questionnaire adapted into Czech) and put it into the Czech version of PARCA-R.

For this reason, we contacted professor Smolik (the author of DOVYKO) to get a permission to take over some parts of the questionnaire. He granted this permission.

We also contacted Professor Dale (the author of the MCDI questionnaire) in order to get permission of the advisory board to adapt the language part from DOVYKO (which is the Czech version of MCDI questionnaire). We obtained this permission and so we can now adapt the language part of PARCA-R with the use of the Czech version of MCDI questionnaire.

The process of adaptation of the language part of PARCA-R has following objectives:

1) To create a **vocabulary checklist of 100 words** based on the MCDI:UKSF
2) To create a **list of six "general" questions** assessing language development
3) To create a list of **twelve pairs of example sentences** assessing the development of grammar.

The method will be slightly different for each of the above mentioned parts. This is in detail described below:

a) The vocabulary checklist of 100 words
The Czech version of the vocabulary checklist will be generated using the WordBank (the database of childrens' vocabulary) - for more information visit: http://wordbank.stanford.edu/.

We will generate the item trajectory for each word from the English version of PARCA-R vocabulary checklist. We will then find 100 Czech words which occur at around 24 months of age with the same probability (The WordBank also provides probabilities for Czech words that are included in the DOVYKO questionnaire).

We will also include items that are "easier" (occur earlier than at 24 months) and "harder" (occur later in development) to avoid floor and ceiling effects.

It needs to be noted that the words from the vocabulary checklist of 100 words in PARCA-R come from different categories (for example family members - sister, brother…; food, activities etc.). It is therefore important to keep in mind that the Czech words need to be chosen with respect to those categories.

b) List of "general" questions assessing language development
PARCA-R language part also includes "general" questions that assess the development of language. These include questions such as: "Does your child ever talk about past events or people who are not present?". These questions will be translated into Czech from the PARCA-R questionnaire.

c) Twelve pairs of example sentences assessing the development of grammar
The language part of PARCA-R also includes twelve pairs of example sentences that assess the development of grammar. This is also part of the DOVYKO questionnaire (Czech version of MCDI). We will therefore choose twelve pairs of sentences from DOVYKO that cover some important aspects of the grammatical development of Czech children.

NEXT STEPS AFTER THE CZECH VERSION OF PARCA-R IS CREATED:

After steps 1-5 (see page 1 of this research protocol), the following steps should be taken:

a) The questionnaire will go through back translation (BT). The BT should be done by a translator, who is an English native speaker. The translator should also be without medical background. There should be a minimum of two BT.

b) The BT will be sent to the authors of PARCA-R, in order to get their approval with the content. Possible changes will be made based on the feedback of the authors.

c) Validation of the Czech version of PARCA-R should be done in order to see how Czech children perform on the questionnaire. This process is described below:

<u>**Validization of Czech version of PARCA-R**</u>
The Czech version of PARCA-R will be tested on the two following groups of children:

1) **Typically developing children**
   The language part will be tested on a sample of typically developing Czech children at 24 months of age. For this reason, we will create an online version of the questionnaire and a link will be sent to all recruited participants.

2) **Premature children**
   The questionnaire will also be tested on children with birth weight below 1 500g. This will be done in the Developmental center for Children with perinatal risks that is part of The Institute for the care of mother and child (a perinatological center in Prague). The developmental center does a long-term follow-up of children with perinatal risks and the children undergo a routine psychological assessment at 24 months of age. The questionnaire will be administered to parents just before the psychological assessment (which is done using Bayley- III). *We will then correlate the results of the questionnaire with relevant scales on Bayley III, in order to test for congruent validity.*

We also plan to conduct a couple of interviews with parents who filled in the questionnaire in order to get some feedback (e.g. whether they understood the wording, etc.)

All participants will sign an informed consent designed specifically for this purpose.

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