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ADAPTATION OF THE IBQR VSF QUESTIONNAIRE TO THE CZECH ENVIRONMENT

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Abstract

The aim of this paper is to develop a functioning Czech language-based IBQR VSF as a tool to describe the child's temperament at the of age 3-12 months. The child's temperament is considered as a relevant personal variable in child developmental pathways. The purpose of the adaptation process was to modify and translate the IBQR VSF temperament assessment instrument into the Czech based on Rothbart's theoretical approach. The original translation was modified on the basis of feedback by professional translators, three bilingual psychologists, and a sample of 15 Czech mothers. A back-translation by a professional translator was then assessed by the authors of the original (English-language) instruments. For the final version of the measure, the authors of the original instrument judged that all of the items were consistent with the original items, and a second sample of 15 collaborating mothers identified no problems with the Czech items. The reliability of the adapted questionnaire was verified by calculation of the Cronbach's alpha, first calculated separately for the whole set of boys and girls and then individually for all the age and gender subgroups. The results obtained, as the functional tool IBQR-VSF, will be offered to psychologists specializing in diagnosing children in early age groups. We also expect interest on the part of specialists working with the parents of prematurely born or handicapped children.

Keywords: Assessment, Child, IBQR, Modification, Temperament.

1. Introduction

Temperament in early childhood suggests trends in the individual's behavioural development. The authors of this paper define temperament as the way individuals react to the social and emotional stimuli of their immediate environment. Features of the individual's temperament are already clearly identifiable

in infancy and are relatively stable in the course of the child's maturation. Temperament is a sum of characteristic or inborn personality features connected with excitability and hence with sensitivity to stimuli in both normal and pathological forms. A deviation from "normal" temperament in early childhood may be seen as a risk factor that may manifest itself at a later stage in behavioural problems. Temperament is described as biologically conditioned individual differences in behaviour and emotional reactions to stimuli from the surroundings (Rothbart, 2007). Temperament includes both reactivity, which means the intensity and duration of the reaction to a stimulus in terms of behavioural or emotional reaction, and regulation, which is the ability of the individual to modulate their response (Rothbart, 1988). Temperament as a complex phenomenon consists of the following parameters, described in detail below (Rothbart, 1981; Putnam et al., 2014, 2006; Gartstein & Rothbart, 2003): Activity Level, Distress to Limitations, Approach, Fear, Duration of Orienting, Smiling and Laughter, Vocal Reactivity, Sadness, Perceptual Sensitivity, High and/or Low Intensity Pleasure, Cuddliness, Soothability, and Falling Reactivity.

Many authors have studied and evaluated the temperament of infants, some of them through tools they developed themselves, and many of which are commonly used today. For example, "The Bayley Scales of Infant Development" (BSID) evaluate the cognitive, behavioural and motor development of the child from the first to the twenty-fourth month of age. Nancy Bayley developed a test allowing retardation in key developmental areas to be described with regard to functional role, which facilitates early diagnosis before the commencement of a psychological or other intervention. The test is a widespread tool for the comprehensive description of infant development. In the first half of the last century Charlotte Buehler introduced her "Buehler baby test". The test included items which the author considered crucial for the evaluation of the development of the child at the given age (sense reception, bodily movements, social behaviour, learning, manipulation of materials and mental productivity).

Ackerman (1942) assessed this test critically, but regardless of her results this assessment confirmed the importance of evaluation of the child's behaviour in infancy, including its temperament. Another very specific task, dictated by the increasing number of prematurely born babies, is diagnosis of the level of maturity and potential deviations in these children. One of the tools used for this purpose is the Neurobehavioural Assessment of the Preterm Infant by Anneliese Korner (Korner, 1996), where elements of temperament appear as items monitored for the purpose of the description of the development and maturation of prematurely born children.

Another tool deserving attention is the Infant Behaviour Questionnaire (Rothbart, 1981). The first version of the questionnaire by Mary K. Rothbart focused on six areas of baby temperament – activity level, soothability, fear, distress to limitations, smiling and laughter, and duration of orienting. The original version of the Infant Behaviour Questionnaire (IBQ) was revised by its author and by Maria A. Gartstein in the same year, with changes in the individual scale items and extensions of some of the scales. The latest revisions of the questionnaire were performed by Samuel Putnam (2014) and his team and are called IBQ-Revised (IBQ-R). There are Short (91 items; 14 scales) and Very Short (36 items; 3 broad scales) versions.

The fact that the IBQR questionnaire is based on cooperation with parents was the reason for its selection for our present study. The combination of the approaches of special pedagogy and psychology to infant temperament allows for the identification of children with signs of developmental retardation. The advantages are the possibility of more accurate targeting of the intervention programme and especially of encouragement of parental cooperation and support for their ability to observe their child's behaviour, describe its manifestations, and understand their child's reactions better. In the case of children with a handicap or developmental retardation the benefit takes the form of an informed parent as an effective collaborator in their child's diagnosis and therapy.

2. Problem Statement

Czech version of the temperament assessment instrument – IBQR VSF – based on Rothbart's theoretical approach**.**

3. Research Questions

Whether a functioning Czech language-based IBQR VSF can be adopted as a tool to describe the child's temperament at the age of 3-12 months.

4. Purpose of the Study

The main aim was to adapt the existing IBQR questionnaire for the specific environment of the Czech Republic. Our task was not only its translation but also modifications of the individual items to make them correspond to the specific cultural and linguistic features of the Czech environment (Gartstein, 2006). A similar process was described in detail in the case of the adaptation of the questionnaire to the Brazilian environment (Klein, Putnam, & Linhares, 2009). At present (June 2016) there are 21 national versions of the IBQR questionnaire**.**

5. Research Methods

In the first stage we used the IBQR 2000 created by Mary K. Rothbart and Maria A. Gartstein – a questionnaire with 191 items. A translation agency translated the questionnaire into Czech. The first version of the Czech translation with the original wording of the questionnaire was distributed to five paediatric psychologists fluent in the English language for comments and potential suggestions for adaptations of the Czech text towards increased comprehensibility and unambiguousness.

The second stage involved distribution of the questionnaire to 15 Czech mothers with children at the age of 3-12 months. The purpose was to obtain their views on the comprehensibility and adequacy of the individual items as an input for further modifications of the text part. The mothers made no substantial comments except for a complaint about the number of items to be filled out – 191.

The third stage was represented by back-translation of the questionnaire into English – again by an independent agency. This version was submitted to the author (S. Putnam) for assessment of the faithfulness of the meaning, clarity, and the content of the individual questionnaire items.

The kind support of Dr. Putnam signalled the commencement of our mutual cooperation in the fourth stage – formulation of the final wording of the questionnaire items. On the basis of his comments and recommendations the questionnaire was adapted to the specific linguistic and cultural environment of the Czech Republic. Considering cultural differences, the work with items 79 and 80 was particularly interesting as the concept of play is different in the two cultures and we had to arrive at a definition of play and the characteristics of the child's and the adult's activity in order to obtain approval.

Table 01. List of modifications

Item 23: The original states "settle down to sleep easily"; the back-translation states "easy to calm down". Since the original implies that the child goes to sleep soon, please ensure that the Czech version implies this as well.	Added – „snadno se utišilo a usnulo", which has a similar meaning in relation to "easy to calm down and get to sleep"
Item 31: The original states "becomes tearful"; the back-translation states "feels sad". Since a child could be mildly sad without actually shedding tears, the back-translation is a bit off. Please ensure that the Czech version indicates the presence of tears.	Added – „bylo plačtivé" in exact translation is "was tearful"
Item 43: The original reads "smile;' the back-translation is "laugh". Laughing is a stronger demonstration of happiness then mere smiling. Please ensure that the Czech version indicates laughter.	Changed to „usmívalo" – "smile"
Items 77/78: The original concerned the baby being "tossed around playfully" (presumably by a parent or other adult); the back-translation refers to the baby "gamesomely swinging". Please ensure that the Czech version refers to the child being engaged in very active play with an adult.	„Když se dítě rozpustile pohupovalo, jak často se…". In Czech it is an active expression, but in translation, the term used was "was", which describes it as a passive role of the child
Items 79/80: The original concerned "peek-a-boo", which in the U.S. is a different activity than "hide-and-seek" (a game played by older kids). Please ensure that the Czech version refers to the adult hiding their face behind their hands or something else, then showing their face to surprise their kids (not sure if adults in other countries play this with their infants!).	It was very difficult to find the same way of playing this game in the Czech cultural and geographic environment. In accordance with the definition (found below) it is a similar activity, but the hidden face is on the side of the child. I do not know whether it can be taken as the same as it is described in the original version. Cognitive involvement and activity are, in both cases, dependent on the child's performance. The definition says: Peekaboo is a game played primarily with a baby. In the game, one player hides his or her face, pops back into the view of the other, and says Peekaboo!, sometimes followed by I see you! There are many variations: for example, where trees are involved, "Hiding behind that tree!" is sometimes added.

	Another variation involves saying "Where's the baby?" while the face is covered and "There's the baby!" when uncovering the face.
Item 102: The original referred to whether the child "squeals or shouts" when excited; the back-translation refers to whether the baby "yells or cries". This item is part of the Vocal Reactivity scale, which measures positive or neutral vocalizations, not negative emotions. Please ensure that the Czech version does not suggest the baby is crying or otherwise expressing negative emotions.	Changed to „vřiská nebo křičí" with the meaning "squeal or shout" according to the note on the left
Items 120/121: The original referred to the baby being "upset"; the back-translation refers to it being "excited". 'Upset' refers to the baby being unhappy (frustrated, in this case), whereas the word "excited" typically refers to a happy and activated state. Please ensure that the Czech version suggests that the child is somewhat frustrated or irritated.	Changed to „rozzlobené", which is equivalent to "upset"
Item 136: The original referred to a cloud passing overhead; the back-translation refers to the weather becoming overcast. Whereas a cloud passing overhead creates a small but immediate change, the "weather becoming overcast" could refer to a slower change in the weather. This item is part of the Perceptual Sensitivity scale, which measures reactions to small changes in the environment. Please ensure that the Czech version refers to the child noticing a change that happens quickly.	Changed to „změny světla, když mrak zakryl slunce?", which is equal to the original meaning
Item 143: Similar to 120/121. The original referred to showing "distress"; the back-translation referred to "excited". Please ensure that the Czech version suggests that the child is sad.	Changed to „působilo sklíčeně", which is more relevant to "showing distress"
Items 154-156: The original referred to "several" people; the back-translation referred to a "couple" of people. The term 'couple' refers to only two persons. Please ensure that the Czech version refers to more than this.	The original Czech word „několika" means "several" in English and so it could stay as it is
Items 156, 157 and **158**. Same as 120/121.	Changed to „působilo sklíčeně", which is more relevant to "showing distress"
Item 159: There is NOT a problem with this item. I just wanted to point out that this item is part of the Approach scale, which measures positive reactions to pleasurable stimuli. In this case (but not in 120, 121, 143, 156, 157, or 158, items that make up the Negative Affectivity scale) the back-translation of "excited" is correct.	The meaning of „vzrušené" is relevant to "excited"

Stage five – Feasibility study. In this stage we created the IBQR – very short form (VSF) with 37 items – and sent it as a pilot version to 30 mothers of infants at the age of 3-12 months who were willing to cooperate. Its feasibility was confirmed by the pilot test, without any further comments or suggestions on the part of the mothers who were addressed.

In stage six we began the collection of data on the Czech infant population. We addressed paediatric surgeries, maternity centres, and other sites visited by mothers of healthy babies. The snowball method resulted in 450 filled-out questionnaires from the whole country, of which 24 questionnaires were excluded because of mistakes in the data – most often the age of the baby exceeded the limit of 12 months. As for the informative value of the data obtained, to define validity we needed to obtain 383 sets of source data, corresponding to the 100,000 newborns/year in the Czech Republic (Hague & Jungmann, 2003). This is how data can be obtained with a 5% level of significance. In the case of the present research the number of questionnaires needed for valid statistical processing was even exceeded.

6. Findings

6.1. Age and gender

The subsequent statistical processing included 426 babies at the age of 3-12 months. Out of the total number of 426 babies, there were 205 boys and 221 girls. In harmony with the procedure used by Rothbart (1981), the respondents were further subdivided into three age categories (Table no. 2):

Table 02. Age and gender

Age	Boys	Girls	Total
3-6	45 (22%)	50 (23%)	95
7-9	64 (31%)	57 (26%)	121
10-12	96 (47%)	114 (51%)	210
Total	205 (100%)	221 (100%)	426

The youngest boys were 3 months old and the oldest were 12 months old (M= 8.8; SD= 2.7; MOD =12). The same youngest and oldest age was applied to the subgroup of girls (M= 8.9; SD = 2.8; MOD= 12).

6.2. Reliability

The reliability of the adapted questionnaire was verified by calculation of the Cronbach's alpha, first calculated separately for the whole set of boys and girls and then individually for all the age and gender subgroups (Table no. 3):

Table 03. Reliability

Scale	Girls	3-6	7-9	10-12	Boys	3-6	7-9	10-12
Positive	.68	.78	.79	.50	.75	.92	.69	.41
Negative	.83	.89	.86	.80	.83	.82	.83	.82
Self-Regulation	.65	.53	.54	.67	.75	.90	.63	.75

Table 04. Values for Boys

Scale	3-6	7-9	10-12	Boys Total
Positive				
M	4.2	4.8	4.9	4.7
Sd	1.0	.64	.62	.77
Mod	3.4	4.3	4.8	5.0
Negative				
M	3.5	3.7	4.2	3.9
Sd	1.0	1.02	,99	1.05
Mod	2.1	4.0	3.8	3.8
Self-Regulation				
M	5.0	4.9	4.9	5.0
Sd	.86	.79	.74	.77
Mod	5.0	4.8	5.0	5.0

Table 05. Values for Girls

Scale	3-6	7-9	10-12	Girls Total
Positive				
M	4.3	4.9	5.1	4.8
Sd	.83	.63	.64	.75
Mod	3.3	4.5	4.4	4.4
Negative				
M	3.2	3.5	3.9	3.6
Sd	1.06	.94	1.0	1.04
Mod	2.7	3.0	3.7	3.0
Self-Regulation				
M	5.4	5.3	4.9	5.1
Sd	.59	.62	.73	.71
Mod	4.4	4.5	5.5	5.0

7.   Conclusion

Out of the total number of 426 respondents, 48% were boys and 52% girls. The mean ages of the two groups were 8.8 and 8.9 months, respectively. The most frequently occurring age in both groups was 12 months. This fact may be attributed to the snowball method used for respondent selection. Further

research will focus on respondents in other age groups to balance the numbers of respondents for all age categories.

The Cronbach's alpha values of the individual scales for boys and girls are sufficient for it to be possible to state that the adapted version of the questionnaire is reliable. The only exception is represented by the Positive scale for boys at the age of 10-12 months. For this scale the Cronbach's alpha value is low (0.41). This fact may be caused by the frequent occurrence of the variant "cannot be assessed". Attention will be paid to this fact in further research.

Mean values for the individual scales were calculated for the boys and the girls in the individual age categories. Because of the numbers of respondents in these categories, the most frequently occurring values (MOD) were also calculated, as these may show more accurate values in this case (see Tables. Nos. 4 & 5).

The Czech version of the final IBQR-VSF questionnaire will be available on the website of its authors.

The results obtained will be offered to psychologists specializing in diagnosing children in early age groups. We also expect interest on the part of specialists working with the parents of prematurely born or handicapped children. The purpose of the present study was not only to obtain a valid tool focused on paediatric psychologists but also to get a functional aid for work with the parents of infants with health or developmental risks. The feedback obtained from the parents who filled out the questionnaire in the main research wave reflects a positive approach to the "instructions" on what to observe in their own child and how and where to seek ways of activating and stimulating the child. In this connection a research project was commenced that focused on the babies of mothers treated for alcohol and other addictions. The expression of temperament of these children may be expected to be different from the healthy population, together with the maternal behaviour of their mothers – attention, sensitivity, reaction, or willingness to participate in joint activities – which will certainly also be different from the healthy population.

Acknowledgments

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