

TRANSLATION AND ADAPTATION OF THE MIDDLE YEARS DEVELOPMENT INSTRUMENT. ROMANIAN VERSION

Alina BORA, Sebastian VAIDA*
Universitatea „Babeş-Bolyai”, Cluj
boraalina65@yahoo.com

Abstract: *The middle years' age is a period of changes and challenges, due to physical growth and motor skill development, cognitive development, and socio-emotional development (Harold & Hay, 2005). Cognitive development refers to how a person thinks and perceives his or her world through the action of genetic and learned factors. During middle childhood, children's vocabularies increase, and they also develop the ability to express intentions. Socio-emotional development refers to understanding and regulating emotions. Children's autonomy, their secure emotional development and psychological well-being are strongly influenced by parenting style and disciplinary practices (Harold, 2005). The purpose of this paper was the translation, adaptation, and validation of the Middle Years Development Instrument (MDI) from English to Romanian. The aim was to assess the factor structure of the scale. The methodology used was the Exploratory factor analysis and we identified three dimensions of the Instrument: Social and emotional development, connectedness, and school experiences of the MDI - Romanian version. We decided to validate this instrument on a Romanian sample, because of the good psychometric properties of the original scale, which recommend it as a reliable tool and thus helps the process of studying this age. Results suggest that the translated and adapted instrument is adequate and valid for evaluating aspects of cognitive and socio-emotional development of middle years' Romanian children.*

Keywords: *Middle Years Development Instrument (MDI), children's well-being, contextual and social assets; population assessment; validation.*

* „Babeş-Bolyai” University, Cluj Napoca, Faculty of Psychology and Educational Sciences, Republicii Street No 37, 400015, Cluj, România; e-mail: sebastianvaida@psychology.ro

INTRODUCTION

The importance and usefulness of this instrument has been demonstrated by the fact that it has been translated and adapted in several countries around the world. The original study validating the MDI Instrument was made by Kimberly et al. (2012). This tool collects data about important aspects of a child's life, such as thoughts, feelings, and experiences. The purpose to translate and adapt this instrument on a Romanian population is driven by the need of better understanding the lives of children and actively improve it. The MDI is a standardized measurement, it is sensitive to the complexity of development and so this can be a first step in this process of change. With this tool, we can assess the level of well-being and the factors that derive from it. It is important to discover these dimensions, to provide children with developmental opportunities and to understand their behavior which is constantly changing at this stage of development. In each country, there are different development characteristics that are dependent on the culture and attitudes promoted by the society.

Being a self-report questionnaire, The Middle Years Development Instrument collect answers from children about their thoughts, feelings, and experiences in school and in the community. This instrument is not an assessment, it just helps gain a deeper understanding of their health and well-being during middle childhood (Kershaw, Irwin, Trafford, & Hertzman, 2005).

There are five dimensions of information that are gathered by the MDI (Schonert-Reichl, Guhn, Gadermann, Hymel, Sweiss, & Herzmann, 2013): physical health and well-being, connectedness, social and emotional development, school experiences, and the use of after school time.

As a developmental period, middle childhood brings some important changes. Children develop their autonomy by this time; they can dress themselves or tie their shoes. They also start to ask for independence from family members because this period is important for social dimension, they start school and therefore, they will spend much more time with their mates.

Cognition

Socio-emotional development during the middle years highlights the acquisition of some abilities through which children are capable to express and regulate emotions. Friendships are also important (Perrier, Bernier, Dirks, Daspe, & Gregoire, 2020; Kershaw et al., 2005), because children spend more time in school and so they must interact, develop their autonomy, and respond adequately in different situations. With these major changes, they can feel stressed (Sachs, Rakow, Shepley, & Peditto, 2020), and for this matter, they experience different coping and emotional coping

strategies. During this process, they learn to control strong emotions (shame, guilt) by avoiding certain situations or by distracting others' attention. Children become aware that they may be in a state of emotional conflict (Verhees, Ceulemans, van IJzendoorn, Bakermans-Kranenburg & Bosmans, 2020), in which they have opposing feelings for the same person. For example, they may feel angry with a colleague, even if they are friends (Kenneth, 1998). The psychological well-being status of children is influenced by their ability to understand that other children have specific skills and deficits in the common areas (Kenneth, 1998).

Behavior

The concept of socio-emotional development is also defined as a process of developing and supporting skills and competences within a desirable environment, which includes active learning and the possibility of exploration (Vaida, 2016). The preschool period is a significant stage, as emotions are formed depending on the environment in which they were raised. Children that grow in a supportive environment, with responsive parents that are careful to their emotional changes, they will be able to recognize their emotions. In an environment where they are neglected and ignored, they will face emotional problems (Ulutas & Kanak, 2016).

As children grow more independent, it is essential for parents to be careful at injury risks. The highest cause of death from unintentional injury among children of this age are motor vehicle crashes (Centers of Disease and Control Central, 2016). Communication within the family is important for several reasons, the most important being that social interaction is the basis of the formation of a stable family. In fact, family communication is the mechanism of most early socializing experiences. By observing and interacting with family members, communication is formed for most children, and it is also how they begin to think about communication as a process (Bruner, 1990). By communicating with significant family members, children learn what they can and cannot anticipate from a person they are talking to, how social relationships work, and how they should behave within them.

Brain

A study by Ornaghi, Brockmeier & Grazzani (2014) shows that it is necessary to develop mental communication skills with schoolmates, as it helps to develop emotions and to understand false beliefs in the age range of 7-10 years old. According to this study, children who participate in mental conversations about stories show improvements in the theory of mind, as opposed to those who only listen to stories (Ornaghi, Brockmeier & Grazzani, 2014).

With these motivations in mind, Kimberly et al. (2012) designed the MDI instrument for children graded from 4 to 7. This instrument is not a test, there are no right or wrong answers, but it aims at finding the way children feel and think at school, at home, or with their friends. MDI assesses children's well-being and contextual assets during middle childhood (Kimberly, 2013). The original version consisted of 77 items on a Likert scale, and a few questions for demographic data. The revised version consisted of 30 items, and this is the version we decided to adapt for the Romanian population. There are five dimensions of the instrument:

1. Social and emotional development.
2. Connectedness to peers and adults at school, at home, and in the neighborhood.
3. School experiences.
4. Physical health and well-being.
5. Constructive use of time after school.

We have translated and adapted the instrument according to the scientific recommendations (Chavez & Canino, 2005; Sousa & Rojjanasrirat, 2011) for psychological instruments. The initial translation from English to Romanian was done by a group of five specialists, followed by a back translation.

METHOD

Participants

The Romanian version of the scale was administered to a total of 205 children, aged 6 to 10, with a mean age of 8.16 years. Of the 205, 50,7% (104) were girls and 49,3% (101) were boys, mainly from large urban areas. All the participants and their parents were informed about the purpose of the questionnaire, the fact that they could withdraw at any time, and that the information was confidential. The time for answering the 30 items was approximately twenty minutes.

Procedure

The original study validating the MDI Instrument was made by Kimberly et al. (2012) and we followed the steps from that study: we calculated the descriptive statistics, the internal consistency of the scale and the exploratory factor analysis.

Table 1:

Means and standard deviations of the scale items.

item	mean	SD	item	mean	SD	item	mean	SD
1	4.11	.849	11	2.90	1.21	21	3.09	.859
2	4.37	.739	12	2.60	1.18	22	3.05	.882
3	4.15	.783	13	1.03	.169	23	3.04	.877
4	2.14	1.19	14	3.18	.722	24	1.21	.609
5	2.10	1.12	15	3.26	.696	25	4.02	.826

6	2.32	1.21	16	3.24	.732	26	4.12	.826
7	3.23	1.22	17	3.38	.734	27	4.05	.922
8	3.33	1.33	18	3.45	.722	28	4.38	.767
9	3.61	1.15	19	3.40	.676	29	4.47	.744
10	3.28	1.25	20	3.47	.674	30	4.51	.757

Next, we calculated the KMO index, for sample adequacy, according to the recommendations of Tabachnick & Fidell (2006), followed by the Bartlett sphericity test, to verify if the correlation items are different from zero. The KMO value is recommended to be a minimum of .5 and a value of .9 represents an excellent adequacy of the sample (Kaiser, 1974). The results are represented in Table 2:

Table 2

KMO Index and Bartlett Sphericity

Test		Values
Keiser Meyer Olkin Test		.732
Bartlett Sphericity	Chi Square aprox.	2123.29
	Df.	465
	Sig.	.000

RESULTS

To determine the number of factors that the scale items are loading on, we did an exploratory factor analysis, which is the recommended when we are dealing with a translation and adaptation of a scale (Sava, 2004) and identified 7 factors that have an Eigenvalue over 1, as presented in figure 1, which is exactly as those obtained in the original scale. We calculated the total variance (table 5), which explains 55.9% of the total variance.

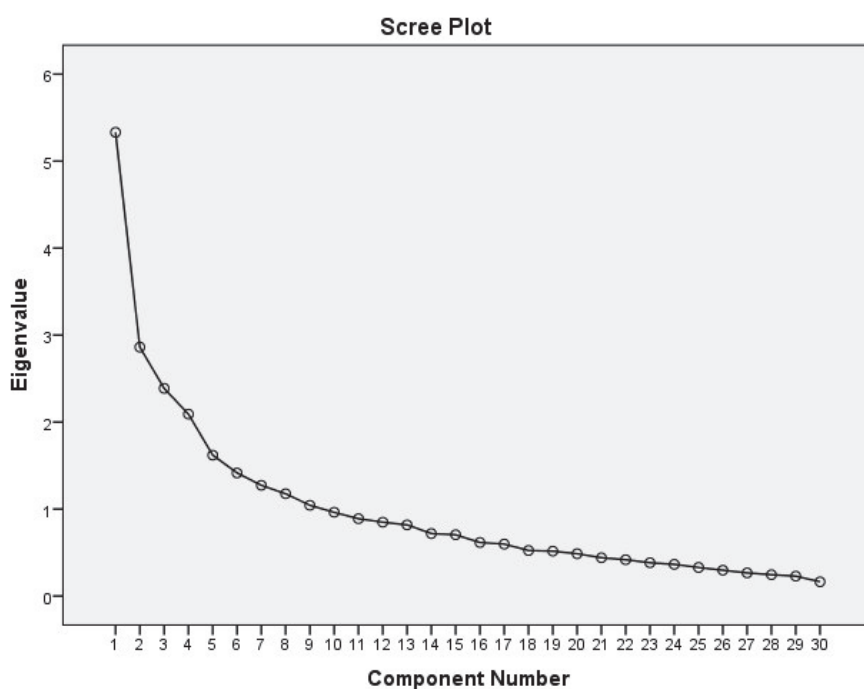
Table 5

Total Variance explained

Component	Total	% of Variance	Cumulative %
1	5.3	17.4	17.4
2	2.8	9.5	26.9
3	2.3	7.9	34.8

4	2.0	6.9	41.7
5	1.6	5.3	47.0
6	1.4	4.7	51.7
7	1.2	4.2	55.9

Figure 1
Graphic of the relevant factors



Confirming that the translated scale has 7 factors, as in the original version (Kimberley et al., 2012), we computed an analysis on the main components, with a varimax rotation, to establish which items load on which factors. For this sample size, we have suppressed the values that fall below .30, for a better and simpler interpretation of the results (Field, 2000).

Table 6
Item loadings on factors

ITEM	FACTOR						
	1	2	3	4	5	6	7
29	.75						

30	.72		
28	.63		
27	.62		
26	.61		
25	.54		
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18	.81		
17	.76		
19	.75		
20	.66		
<hr/>			
23		.73	
22		.72	
21		.69	
12		.60	
11		.54	
10		.44	
24		.40	
<hr/>			
5			.81
4			.71
6			.63
<hr/>			
14			.75
15			.68
16			.64
<hr/>			
8			.82
9			.76
7			.63
<hr/>			
2			.74
1			.71
3			.51
13			.42

In the last part of data analysis, we calculated the internal consistency for the entire scale with the Alpha Cronbach coefficient. The obtained value (table 7) is acceptable and recommends the scale as a valid instrument for the Romanian population.

Table 7

Alpha Cronbach value

Cronbach Alpha	Standardized Items	N of items
.70	.74	30

DISCUSSIONS

In this study, we aimed to translate and adapt the Middle Years Development Instrument and calculate the psychometric properties, to be used as a reliable tool for the Romanian population. We decided to adapt this instrument because its content is well integrated with the large dimensions of a child's development. It targets both the child's relationship with the parents and with the other relevant people in his life, such as teachers, mates, and neighbors. It is a tool that, following translation and adaptation, can be used to evaluate Romanian children, for screening and intervention purposes. It is also an easy tool to use by any parent.

The internal consistency of the scale of .70 is an acceptable one and we are confident that with a larger sample of respondents, the value will increase. The estimation of fidelity using methods of internal consistency is indicated only for homogeneous tests, and the scales translated and adapted by us are heterogeneous (it measures more than one feature). The scale has more than one feature, all of which are described in scale validation studies. For MDI, these dimensions are socio-emotional development, relationships with adults, colleagues, and neighbors ("connectedness"), experiences at school, physical health and well-being and time spent after school. Of these five, the translated scale covers only the first three dimensions. We chose to integrate only these dimensions because we considered that only they match our population, with our culture and habits; these are very important factors in the child's development, and we must consider that.

Based on the results obtained at the fidelity of the scale, we can identify some of the factors that probably influenced the score obtained. One of the factors is the test itself; there is a likelihood that some questions were ambiguous, misspelled, or too difficult for some respondents. Another factor may be the administration of the test; in the case of subjects who received the scale in physical format, error could be generated by disturbing factors or by the atmosphere itself in the classroom. The instructions may not have been understood or heard. In the case of subjects who responded to online questionnaires, error could have occurred due to the physical context in which they were when they completed or the psycho-physiological state in which they were. In fact, the psycho-physiological state is a specific factor that can influence fidelity - if the subject is tired, ill, or simply in a negative mood, biases can occur very easily. Future research should examine other relevant indices and apply the scale to a larger population.

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