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Adolescent Mental Health Literacy in Romania: A Cross Cultural Adaptation of Mental Health Literacy Measures and Intervention

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Abstract

Mental health literacy (MHL) is a four-component concept that includes mental health and mental illness knowledge and understanding, information about mental illness treatments, decreased stigma towards mental illness and improved help-seeking efficacy. The MHL intervention programs and MHL measures in the present literature focus on adult populations; MHL measures and interventions for adolescents need more attention from developing and undeveloped non-Western countries. We aim to analyze the psychometric properties of some MHL measures using factor analysis and reliability tests. We also present the cultural adaptation of the Mental Health and High School Curriculum Guide – a MHL intervention proposed by Kutcher, Wei, McLuckie, and Bullock (2013) – using some guidelines presented in literature. Our initial sample size consisted of 319 adolescents. Due to missing data the number of cases we used for each measurement's analysis fluctuates between 252 and 302. Results show adequate construct validity and internal consistency for most of the MHL measures included in the study, but we conclude that more research is needed, especially for the MH knowledge measure, which indicated mixed results.

Key words: Adolescent MHL measures; mental health literacy (MHL) intervention; MHL knowledge; MHL stigma; MHL help-seeking school

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1. Introduction

1.1. Defining mental health literacy

A recent approach indicates that mental health literacy (MHL) represents a combination of four factors: (a) understanding how to obtain and maintain a good mental health, (b) understanding mental illnesses and their treatments, (c) decreasing stigma, and (d) improving help-seeking efficacy (Kutcher, Wei and Coniglio, 2016; Kutcher, Bagnell & Wei, 2015; Kutcher et al., 2013). With this clearer definition, MHL gained more understanding, being operationalized in a more detailed way which, eventually, may have an impact on the quality of research studies. An observation just as important is made by Kutcher et al. (2016) regarding the importance of three other elements when evaluating MHL: context specificity, developmental aspects and the structure of the society or organization. In support of previous affirmations, good MHL has often been associated with decreased stigma towards people with a mental illness (Kitchener & Jorm, 2002; Griffiths, Christensen & Jorm, 2008; Perry et al, 2014; Kutcher et al., 2015; Milin et al., 2016) and more efficient help-seeking strategies (Evans-Lacko, Brohan, Mojtabai & Thornicroft, 2011; Rüsch, Evans-Lacko, Henderson, Flach & Thornicroft, 2011).

1.2. Mental health literacy interventions

It has previously been stated that school based mental health literacy interventions are effective in creating better knowledge about mental health and mental illness, better help-seeking strategies and more positive attitudes towards mental health issues in teachers (Kutcher, Wei, Gilberds et al., 2016) and adolescents (Kutcher, Wei & Morgan, 2015). However, literature reviews on this topic emphasize that most interventions showed inconsistency in changing attitudes towards mental health and help-seeking behavior over time (Wei, Kutcher, Zygmunt et al., 2013). Based on that, we decided to adapt one intervention that had positive outcomes and proved better applicability for the adolescent population, the Mental Health and High School Curriculum Guide (Kutcher, Wei, McLuckie & Bullock, 2013).

1.3. Mental health literacy measures

Although the interest in improving mental health knowledge led to an increased number of studies, and the number of preventive approaches is still growing, some authors (Kutcher et al., 2016) reported the inadequate evaluation of MHL components (mostly by omission), the use of questionable psychometric properties, and the perpetuation of the same sample characteristics (usually university students).

Wei, McGrath, Hayden and Kutcher presented in 2016 the results of a systematic review of the measurement properties of 16 tools assessing mental health knowledge. The most important conclusions indicated that most of the studies developed, evaluated and validated the measures on adult populations; measures are specific to the Western culture, many of the studies did not use pre-designed hypothesis. Thus, a consensus needs to be made on the relevant psychometric properties of the measures in order to facilitate comparison and a well-informed choice.

1.4. Aim of the study

In this paper we will focus on evaluating the psychometric properties and adaptation process of a number of scales used to assess mental health literacy related concepts: mental health knowledge of symptoms and treatments, mental illness related stigma, help-seeking intentions and behaviors. We also present the adaptation process of a mental health literacy intervention.

2. Method

2.1. Participants

Adaptation of the mental health literacy intervention. A team of four clinical psychologists and/ or psychotherapists, six educators – two school counselors, one English teacher, one pre-university special education teacher also teaching in university, and two university teachers – participated in a two-day mental health literacy training held by Dr. Kutcher in 2017, in Romania. *Adaptation of the mental health literacy measures.* The study implied the application of a series of mental health literacy measures and the mental health literacy intervention mentioned in this paper, the Guide, on a number of 325 participants. We eliminated six questionnaires because they had one or more sections incomplete, or had more than one checks per item for several items or all of the instruments' sections.

Data was collected from two urban high schools from a north-eastern region of Romania. All of the participants in this study are high school students in ninth grade. 43.9% (N=140) of the participants are male, while 56.1% (N=179) are female.

2.2. MHL measures and the intervention

MHL intervention – The Guide. The school based mental health literacy resource we decided to adapt is a Canadian Mental Health & High School Curriculum manualized Guide (*The Guide*) developed by mental health experts collaborating with educators and the Canadian Mental Health Association (CMHA). The Guide consists of six modules and a series of attached complementary materials (videos, Power Point presentations). The modules cover the next topics: *The Stigma of Mental Illness, Understanding Mental Health and Mental Illness, Information on Specific Mental Illnesses, Experiences of Mental Illness and the Importance of Family Communication, Seeking Help and Finding Support, The importance of Positive Mental Health.* The modules have a school curriculum specific structure, which makes it easier for educators to implement it in the classrooms. The resource and complementary materials can be found by accessing http://teenmentalhealth.org/.

Mental Health Knowledge Questionnaire (Kutcher, 2016). The MH knowledge questionnaire is a 30-item instrument with true/false/don't know response choices. In our analysis we coded 1 for correct responses and 0 for incorrect and all don't know choices. Therefore, the participants got 1 for answering with 'true', and 0 for 'false' choices for items 1, 2, 4, 6, 7, 8, 9, 14, 17, 18, 22, 25, 28 and 30; similarly, we coded with 1 all responses that stated 'false' and 0 all that stated 'true' for items 3, 5, 10, 11, 12, 13, 15, 16, 19, 20, 21, 23, 24, 26, 27, and 29. A total score is obtained by summing up all the reported values, higher scores indicating higher knowledge.

Stigma measure - Attitudes towards people with a mental illness (Revised from Youth Opinion Survey, Milin et al., 2015). This is a scale designed specifically for students that measures personal stigma, intended behaviors and information participants have about the causes and treatment of mental illness. The twelve-item scale has 10 reverse items: 1, 2, 3, 4, 5, 6, 7, 8, 9 and 12. Total score ranges from 12 to 84. Higher scores mean better attitudes and less stigma towards people who live with a mental illness.

Help seeking (Milin and Kutcher, 2009). For all sections, higher scores show high actual or intentional help-seeking for a mental health problem, better attitudes towards seeking help for a mental health problem, and seeing help-seeking for a mental health problem as a useful and helpful behavior.

a. *Past help-seeking behaviors.* This section comprises six items that assess the actual behavior of help-seeking on a scale from 0 to 3, feeling the need to seek help on a scale from 0 to 4, and pointing others to help-seeking on a scale from 0 to 2. Scores range from 0 to 19, higher scores showing more help-seeking behaviors.

b. *Finding support.* This section assesses the actual, intentional or absent help-seeking with regard to the persons that may provide some support for a mental health problem. Participants choose the person relevant for them and check the box that describes their behavior the most: 'asked for help' (actual help-seeking), 'wanted, but didn't ask for help' (intentional), and 'didn't feel the need to ask for help' (absent need for help-seeking). Persons they may choose from fall into five categories: family, friends, specialized/non-specialized school staff, religious leaders, mental/physical health specialist outside of school. Higher scores show actual help-seeking, while lower scores show lower need for help-seeking.

c. *Utility of help-seeking.* Comprised of three items, this section evaluates participant's perception over the utility of help-seeking on a scale from 1 to 7; scores range from 3 to 21, higher scores showing higher utility of help-seeking.

d. *Attitudes towards help-seeking.* This scale assesses the attitudes participants and persons relevant to them have towards seeking help for a mental health problem. Participants respond to the ten direct items on a scale from 1 to 7, higher scores meaning better attitudes towards help-seeking for a mental health problem. Scores range from 10 to 70.

Perceived Stress Scale (Cohen, Kamarck and Mermelstein, 1983). Perceived Stress Scale is composed of 10 items that assesses perceived stress by self-report. Questions include evaluations of how unpredictable, uncontrollable and overloaded participants feel with regard to their lives. The scale has four reverse items: 4, 5, 7, and 8. The total score has a range of 0 to 40, higher scores indicating more perceived stress.

2.3. Procedure

Adaptation of the mental health literacy intervention. Using the recommendations made by Barrera, Castro, Strycker, Toobert (2013) we followed the five stages of cultural adaptation of evidence-based interventions. We will briefly describe the steps we followed for each stage in order to culturally adapt the mental health literacy intervention materials created by Dr. Stan Kutcher and Dr. Yifeng Wei, *Mental Health & High School Curriculum Guide*, also referred as The Guide. All the materials can be accessed by visiting http://teenmentalhealth.org/.

Information   gathering. We searched the literature for other adaptations of the intervention mentioned above and we found no prior data. As to our knowledge there are no other evidence-based interventions adapted to our culture, and no other school mental health literacy programs implemented in Romania, we decided such an adaptation is needed.

Preliminary adaptation design and tests. Three bilingual speakers translated The Guide and all the complementary resources (check the link mentioned in a previous section), and then one of them - a high-school English teacher - and two clinical psychologists (also bilingual speakers) verified the accuracy of the translation. We preserved all the core elements of the original intervention. The modifications made to the intervention were minimal. For example, for the help-seeking sections, we replaced the Canadian resources with community resources available in Romania.

A team of four clinical psychologists and/ or psychotherapists, six pre-university and/ or university teachers – two school counselors, one English teacher, one pre-university special education teacher also teaching in university, and two university teachers – participated in a two-day mental health literacy training held by Dr. Kutcher in 2017, in Romania. After the two-day training, we organized discussions regarding the utility of the intervention, possible major differences between Canadian and Romanian adolescent cultures, and the most important changes that need to be made in order to successfully adapt the intervention. Then the team completed an online questionnaire (appendix 1) that assessed the usability of the technology-mediated parts of the intervention (videos, Power Point Presentations), possible implementation difficulties, difficulties with intervention and/or activities included, overall satisfaction with the proposed

intervention and suggestions for improvement for each section of the intervention: The Guide, complementary materials and videos. Although they covered all the professional categories listed above, only five of eight participants in the training have completed the online questionnaire.

Adaptation refinement

We used the responses from the trained team and revised the intervention. Revisions included suggestions about: meaningful examples of famous Romanian people living with a mental illness, accessible examples of Romanian community resources, technical changes (for example, visibility of the subtitles for the video-based materials) and some linguistic adaptations.

Cultural adaptation trial

We followed Sousa and Rojjanasrirat's (2010) guideline for the cross-cultural adaptation of health care research. The process we followed for MHL measures' adaptation will be presented in this section. Two bilingual speakers individually translated the measures from English to Romanian. Then, one blinded non-specialist in any field related to psychology English translator back-translated the resulting Romanian versions to English. We compared the original version of the measures to the back-translated one and found some small discrepancies which were clarified in a conversation with one of the researchers (knowledgeable about the mental health terminology).

Some of the items were also randomly verified by the author of most of the MHL measures presented in this paper, who is also a native English speaker. We verified the pre-final Romanian translated versions by asking eight participants in the mental health literacy training described in a previous section of this paper to make the adjustments they see fit in order to better understand measures' items. There were no significant changes in the items' clarity and content.

2.4. Statistical analysis and results

Dealing with missing data. We observed some cases of missing data in our data base, so we decided to analyze the results more closely, which led us to presenting a series of tables with information regarding missing values. Frequency analysis show that we are missing from 5.6 to 25.4 of our data. Some authors (Enders, 2003) consider that in educational and psychological research percentages of 15% to 20% of missing data are common. According to Chen, Wang and Chen (2012), who set the high percentage of missing data above 30%, we have a low percentage of missing data. Thus, using different imputation methods for missing data should not impact factor structures neither for exploratory, nor for confirmatory factor analyses (Chen et al, 2012).

To deal with missing data, we tested whether they are missing randomly or if there are any patterns of missing data. The pie chart 1 listed below shows that all of our variables have some missing data, approximately 40% of the individual participants are missing at least one data point, and 12.34% of all the possible values are incomplete.
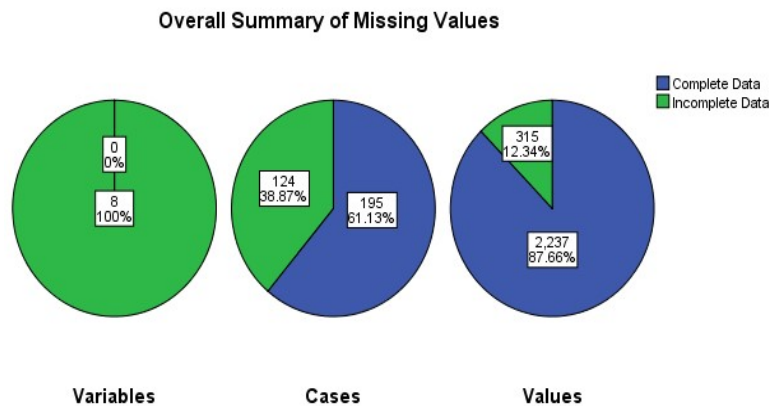

Chart 1. Summary of missing values

3. Results

Our analysis on patterns of missing data showed some signs of patterns in missing data, especially for help-seeking related variables. Thus, we further used Little's Missing Completely at Random (MCAR) Test in order to apply the correct method of dealing with missing data. Results presented in Table 1 show that the data is missing at random. The MCAR test obtained for this study's data resulted in a chi-square = 96.010 (df = 98; p = .538).

Table 1: Little's MCAR test results

EM Means[a]							
Total_Knowledge	Attitudes_M_illness_R	Total_Perceived_Stress	Total_Help_seeking	Total_Help_seeking_W_Pers	Total_Help_seeking_W_Pers_Utility	Total_HS_Pers	Total_HS_Utility
12.83	51.71	19.42	85.20	72.97	56.28	12.23	16.69
a. Little's MCAR test: Chi-Square = 96.010, DF = 98, Sig. = .538							

We consulted the literature and found that the best practice in dealing with random missing data is to use multiple imputation and maximum likelihood imputation (Cheema, 2014; Osborne, 2013). We used multiple imputation method for all the variables that had missing values.

3.1. Construct validity and internal consistency

Exploratory Factor Analysis for Mental Health Knowledge Questionnaire (Kutcher, 2016). For the exploratory factor analysis we used exclude cases listwise for all analyses. In order to determine the factor structure of the measure assessing mental health knowledge in adolescents, we ran an exploratory factor analysis using a principal component analysis, with orthogonal rotation (Varimax). The Kaiser-Meyer-Olkin measure of sampling adequacy shows a value = 0.66, which indicates an acceptable sample size for reliable results. Bartlett's test of sphericity has a significance level lower than .0001, suggesting the presence of some factors (table 2).

Table 2: KMO and Bartlett's Test for Mental Health Knowledge Questionnaire

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.661
Bartlett's Test of Sphericity	Approx. Chi-Square	912.998
	df	435
	Sig.	.000

Using Kaiser's eigen value criterion, the analysis first extracted 12 factors that accounted for 57,96% of the variance, but as factors 6 to 12 had too few items, or three items that loaded on more than one factor (with correlations greater than .30), we decided to set the number of factors to 5.

The five factors accounted for a total of 31.60% of the variance. The scree plot (chart 2) shows that we should retain six factors, but the sixth factor had only two items loaded and another one loaded on other factors too.
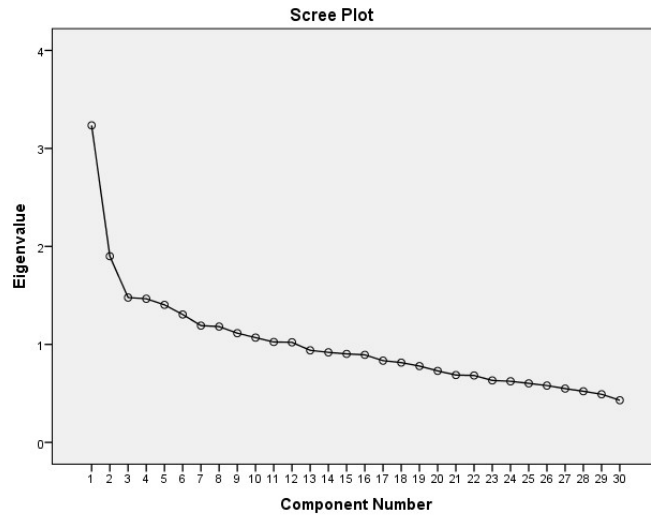
Scree Plot

Chart 2. Scree test for Mental Health Knowledge Questionnaire

Table 3 shows the factor loadings after rotation. Factor 1 represents different functions of the brain and treatment of mental illness; factor 2 represents causes and symptoms of mental illness; factor 3 represents symptoms of mental illness and possible treatments; factor 4 represents risk factors for mental illness; and factor 5 includes perception on mental illness and mental health, and symptoms of mental illness.

Table 3. Exploratory factor analysis results for Mental Health Knowledge Questionnaire (N=278)

Item	Component				
	1	2	3	4	5
K14	.546				
K4	.527				
K3	.496				
K10	.482				
K8	.460				
K28	.448		-.329	.387	
K22	.396				
K15	.366				
K6	.364		-.330		
K24	.345				
K29		.686			
K23		.490			
K5		.490			
K26		.461			
K12		.441		-.392	
K11		.370			
K27			.594		
K19			.562		
K16			.443		
K18			.437		
K13			.362		
K9			-.321		

K20	-.616	
K2	.529	
K25	.430	
K7		.651
K30		.513
K1		-.370
K21		.331
K17		.322

Internal consistency for MH Knowledge Questionnaire (Kutcher, 2016)

Chronbach's alpha of the 30-item Mental Health Knowledge Questionnaire is α=.68, which is slightly under .70. However, as the items are not constructed to correlate, this result is consistent with those of other authors, who reported a Chronbach's alpha of α=.63 (Kutcher, Wei and Morgan, 2015) and α=.71 (Mcluckie, Kutcher, Wei and Weaver, 2014) for the 28-item version of the measure.

Exploratory Factor Analysis for stigma measure (Milin et al., 2016)

A principal component exploratory analysis, with oblique rotation (Promax) extracted four factors with Kaiser's eigen values greater than one. The Kaiser-Meyer-Olkin measure of sampling adequacy shows a value = 0.77, which indicates an acceptable sample size for reliable results. Bartlett's test of sphericity has a significance level of p<.0001, suggesting the presence of some underlying factors (table 4).

Table 4. Sampling adequacy and underlying factors for stigma measures

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.770
Bartlett's Test of Sphericity	Approx. Chi-Square	595.431
	df	55
	Sig.	.000

Factors three and four had two and one items loaded, so we set the number of factors to two, accounting for a total of 42.64% of the variance. The decision to keep two factors is also sustained by the scree test (Chart 3). Item 1 did not load on any of the factors, so we eliminated it.
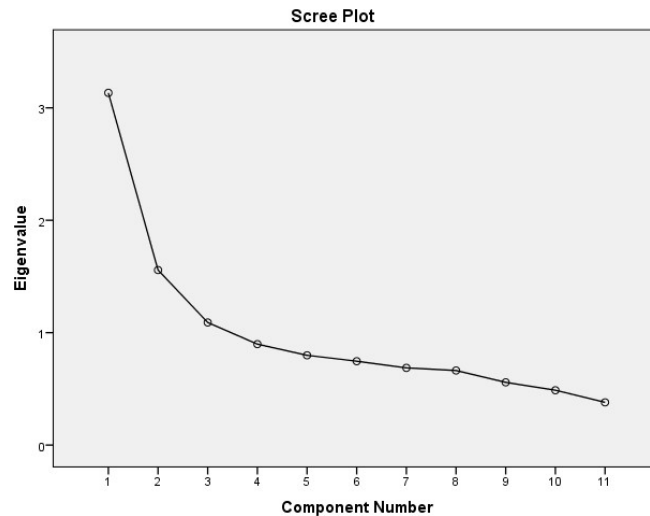

Chart 3. Scree test for stigma measure

The items' loadings on factors can be consulted in table 5. Factor 1 represents social distance with persons living with a mental illness, while factor 2 represents attitudes towards causes of mental illness and behaviors of people with a mental illness.

Table 5. Summary of exploratory factor analysis for stigma measure, N=302 (Milin et al., 2015)

Item	Component	
	1	**2**
7	.795	
12	.790	
6	.643	
8	.604	
11	.562	
5	.448	.420
10	.437	
9	.365	
2		.717
3		.698
4		.663

Internal consistency for Stigma Measure

For the internal consistency of the 12-item stigma measure, Chronbach's alpha shows α=.73, which indicates good internal consistency. This result is even more promising than the ones obtained for the 8-item version of the measure in other studies, which reported an alpha of α=.68 and .65 (Milin et al., 2016; Kutcher et al., 2015).

Exploratory Factor Analysis for help-seeking measures (Milin and Kutcher, 2009)

A principal component exploratory analysis, with orthogonal rotation (Varimax), revealed eight factors with Kaiser's eigen values greater than one. The Kaiser-Meyer-Olkin measure of sampling adequacy shows a value = 0.72, which indicates an acceptable sample size for reliable results. Bartlett's test of sphericity has a significance level of $p<.0001$, suggesting the presence of some underlying factors (Table 6).

Table 6. Sampling adequacy and underlying factors for help-seeking measures

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.720
Bartlett's Test of Sphericity	Approx. Chi-Square	1010.465
	df	136
	Sig.	.000

We eliminated item 6 because it did not load on any of the factors. By analyzing the scree test (Chart 4) we set the number of factor extraction to four, but many items had loading on more than one item. Thus, we extracted three factors accounting for 44.38% of the variance (Table 7).
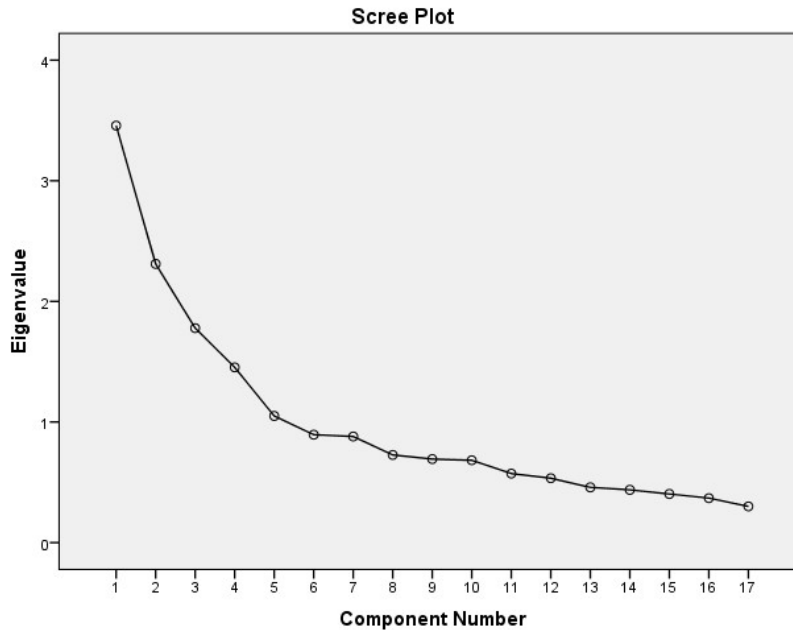
Scree Plot

Chart 4. Scree test for help-seeking measure

Factor 1 refers to seeking help from close or specialized persons; factor 2 refers to help seeking in the past; and factor 3 refers to perceived utility of help-seeking.

Table 7. Summary of exploratory factor analysis for help seeking measure, N=252 (Milin and Kutcher 2009)

Item	Component		
	1	2	3
7g	.709		
7f	.622		
7b	.611		
7a	.596		
7e	.579		
7c	.565		
7d	.486		
7h	.484		
7i	.454		-.349
3		.801	
4		.717	
1		.661	
2		.560	
5		.532	
10			.819
8			.804
9			.786

Internal consistency for General Help-seeking
Chronbach's alpha of the three factor Help-seeking measure is α=.76, which shows good internal consistency. Unfortunately, we found no other internal consistency reports for this measure in the literature. We also calculated Chronbach's alpha for the three factors we identified using exploratory factor analysis. For our sample, we obtained a weak internal consistency for the five-item *past help-seeking* factor of α=.61. Chronbach's alpha for the 9-item *finding-support*

factor is α=.73, which indicates a good internal consistency. Similarly, we obtained a good internal consistency for the 3-item *help-seeking utility* factor, with a Chronbach's alpha of α=.80.

Exploratory Factor Analysis for help-seeking attitudes (Milin and Kutcher, 2009)

We conducted a principal component exploratory analysis, with oblique rotation (Promax) to extract the factors from a help-seeking attitudes measure (Milin and Kutcher, 2009). The analysis revealed two factors with Kaiser's eigen values greater than one. The Kaiser-Meyer-Olkin measure of sampling adequacy shows a value = .81, which indicates a meritorious sample size. Bartlett's test of sphericity has a significance level of $p<.0001$, suggesting the presence of some underlying factors (Table 8).

Table 8. Sampling adequacy and underlying factors for help-seeking attitudes measures

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.814
Bartlett's Test of Sphericity	Approx. Chi-Square	835.056
	df	45
	Sig.	.000

The scree test (Chart 5) clearly supports the two factors initially extracted. The two factors (table 9) account for 50.16% of the variance and refer to: personal attitudes and intentions regarding help-seeking (Factor 1); and perceived attitudes of close people over help-seeking behavior (Factor 2).
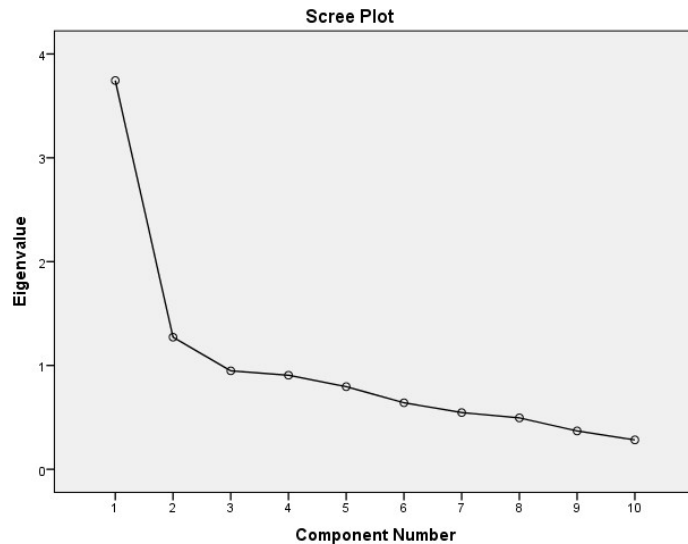

Chart 5. Scree test for help-seeking attitudes measure

Table 9. Summary of exploratory factor analysis for help seeking attitudes measure, N=300 (Milin and Kutcher 2009)

Item	Component	
	1	2
5	.904	
6	.839	

1	.734	
3	.642	
9		.768
10		.735
7		.624
8		.621
2		.582
4		.431

Internal consistency for Help-seeking attitudes

Chronbach's alpha of the two factor help-seeking attitudes measure is α=.82, which indicates good internal consistency. Taken separately, the two factors show good internal consistency too, the alpha for the 4-item *personal attitudes and intentions regarding help-seeking* factor is α=.79; and the alpha for the 6-item *perceived attitudes of close people over help-seeking behavior* factor is α=.75.

Exploratory Factor Analysis for Perceived Stress Scale (Cohen, Kamarck and Mermelstein, 1983)

A principal component exploratory analysis, with oblique rotation (Promax) extracted four factors with Kaiser's eigen values greater than one. The Kaiser-Meyer-Olkin measure of sampling adequacy shows a value = .83, which indicates a meritorious sample size. Bartlett's test of sphericity has a significance level of p<.0001, suggesting the presence of some underlying factors (table 10).

Table 10. Sampling adequacy and underlying factors for Perceived Stress Scale

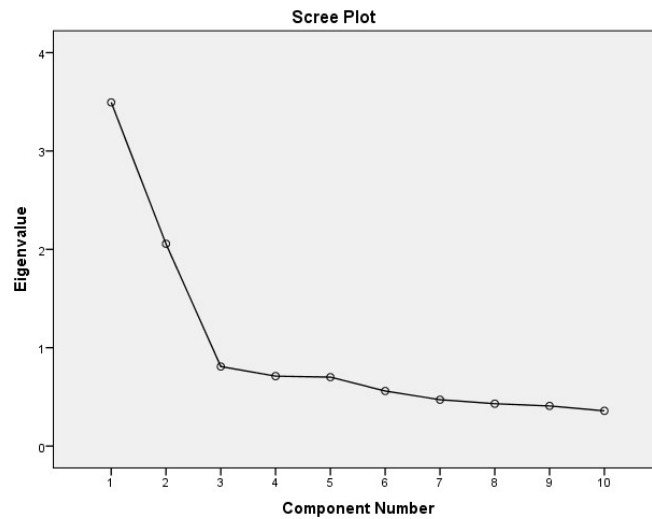| KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.831
Bartlett's Test of Sphericity	Approx. Chi-Square	891.500
	df	45
	Sig.	.000

Chart 6. Scree test for Perceived Stress Scale

The scree test (chart 6) clearly supports the two factors initially extracted. The two factors (Table 11) account for 55.51% of the variance and are consistent to other facto structures found in the literature for the same measure (Perera et al., 2016). The factors refer to perceived helplessness or negative stress (Factor 1); and perceived self-efficacy or positive stress (Factor 2), but most researchers prefer using a single score for all ten items because of lack of information on validity and reliability of the two factors (Perera et al., 2016).

Table 11. Summary of exploratory factor analysis for PSS (Cohen, Kamarck & Mermelstein, 1983)

Item	Component	
	1	2
2	.823	
1	.775	
3	.773	
10	.770	
9	.718	
6	.687	
8		
5		.733
4		.672
7		.606

Although we have a smaller sample, the results we obtained from this exploratory factor analysis for PSS are consistent with the results of the adaptation study of the same 10-item measure. Thus, Dumitrescu, Badiță, Dogaru, Toma, Perțea and Duță (2014) also found two latent factors with the same items loading on each of them, accounting for a total of 56.79% of the variance, which is very close to our findings.

Internal consistency for Perceived Stress Scale

For our sample the Chronbach's alpha for the Perceived Stress Scale is of α=.73, which shows good internal consistency. Previous adaptation of the 10-item version of the Perceived Stress Scale on a non-clinical Romanian sample reported a higher internal consistency of α=.85 (Dumitrescu et al., 2014).

4. Conclusions

The purpose of this study was to adapt two important components of mental health literacy research: a MHL intervention program – the Guide – and several MHL measures including MH knowledge, stigma, help-seeking and perceived stress scales. We presented the process we followed to translate both the mental health literacy intervention and the MHL measures. The Romanian versions of the mental health literacy measures demonstrated adequate and acceptable psychometric properties for evaluating mental health knowledge, mental illness related stigma, help-seeking behaviors and perceived stress. Most of the psychometric properties we presented from our sample are consistent with findings other authors report in the literature, which means that we might have a promising lead to optimally adapt the MHL measures for Romanian language and culture. For example, for the *MH knowledge* and *stigma towards mental illness* measures, the results we obtained were similar to Mcluckie, Kutcher, Wei and Weaver (2014), Milin et al. (2016), and Kutcher et al. (2015).

Although similar to other studies in the literature, the exploratory analysis for MH knowledge questionnaire showed mixed results for factor number, some very low communality values, and a rather low internal consistency, so we recommend that more research should be done for this matter. Similarly, for the help-seeking measures, we created a total score for all the four components, but factor analysis organized one measure with three factors and another one

with two factors (*attitudes towards help-seeking*). As to our knowledge, there are no mentions of the adaptation of help-seeking measures in the literature; these measures also need more attention in future research.

Further validation data using convergent and divergent strategy might provide further clarification of these measures' differentiating between the factors we extracted in this paper. Furthermore, confirmatory factor analysis might have been a complementary approach of this adaptation process that would identify the extent to which each of the latent factors presented in this paper predicts participants' response to items.

Limitations

The materials of the intervention were not back-translated, and they were not verified by a native English speaker for accuracy, but they were verified by the trained team and there were no suggestions about the clarity or meaning of the text, but about some typos. Furthermore, the sample we used was too small for a full cultural adaptation trial, thus the suggestions we collected from teachers and school counselors who participated in the training and applied the module might not be comprehensive. However, participants in the training unanimously agreed that all the materials presented in the intervention would be fit for students in Romania as well, as their lifestyle and interests are similar.

Our sample size for the pilot testing of the pre-final version of the measures and intervention is small and this might reduce the number of recommendations available for optimal translation and adaptation of the materials and measures. Moreover, our sample is composed of ninth-grade students only, so future researchers might consider testing these instruments on other populations for better generalizability. We did not find any psychometric data for some of the measures we presented in this paper. Thus, we were not able to compare our findings to others in order to adjust the adaptations we presented in this study. One other important limit of our research is the exclusion of other available current measures of stigma towards mental illness and help-seeking.

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