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THE RUSSIAN VERSION OF THE SOCIAL PROBLEM-SOLVING INVENTORY (SPSI-R-RU)

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Abstract

This work is devoted to adaptation and validation of the Social Problem-Solving Inventory-Revised questionnaire on Russian sample. D'Zurilla developed this questionnaire. SPSI-R has better psychometric properties then other tools for measuring various aspects of solving personal and social problems. Earlier the questionnaire had already been adapted in different countries, but never in Russia. Approbation of the questionnaire, its items reliability verification and identification of the factor structure was performed on a sample of 329 people. Verification of construct validity was made on a sample of 466 people. The Russian version of the SPSI-R questionnaire showed satisfactory results of evaluating the internal consistency of four scales matching the original version of the questionnaire. The modeling of the factor structure by the method of structural equations was carried out on a questionnaire of 35 points. Verification of construct validity using the COPE questionnaire and the Scale of Life Satisfaction showed results corresponding to the correlation hypotheses at the level of statistical significance p <0.001. The obtained tool has the characteristics, sufficient for its application for research purposes. As prospects for research, we see the study of other types of validity and reliability SPSI-R, as well as the definition of leading styles of problem solving in different age and sex groups.

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Keywords: Solutions of social problems, method validation, construct validity, confirmatory factor analysis, SPSI-R.

1.   Introduction

In the global scientific field Social Problem-Solving Inventory-Revised (SPSI-R) questionnaire by D'Zurilla (Chang & D'Zurilla, 1996; D'Zurilla, Chang, 1995; D'Zurilla, Nezu, Maydeu-Olivares, 2002) is the most widely used and studied on large volume of cross-cultural empirical data (De La Torre, Morera, Wood, 2010; Hasegawa et al., 2015; Li et al., 2016). It was built on the basis of a theoretical model of social problem solving skills and was repeatedly tested empirically. Social Problem-Solving Inventory (SPSI-R) consists of 52 questions and includes 5 scales: Positive problem orientation (5 items); Negative problem orientation (10 items); Rational style of solving problems (20 points); Impulsivity style (10 points); Avoiding style (7 points).

2.   Problem Statement

Most of the tools for measuring different aspects of solving personal or social problems do not have sufficient reliability and validity because of the lack of a single theoretical basis in understanding these constructs, and because of unsatisfactory psychometric verification of the tools.

SPSI-R though shows good psychometric properties. Its test-retest reliability varies from 0.72 (Positive problem orientation) to 0.88 (Negative problem orientation). Alpha Cronbach for items ranges from 0.73 to 0.86, according to the developers. Convergent validity with self-esteem and distress was shown (D'Zurilla, Nezu, Maydeu-Olivares, 2002). The criterion validity of the questionnaire was confirmed by significant correlations with the corresponding scales of the Problem Solving Inventory (PSI) (Heppner & Petersen, 1982) and other constructs such as stress (Carver, Scheier, Weintraub, 1989), somatic symptoms, anxiety, depression (McCabe, Blankstein, Mills, 1999), hopelessness and suicidality (D'Zurilla, Nezu, Maydeu-Olivares, 2002).

Numerous studies have shown correlations between SPSI-R questionnaire scales constructs and other constructs such as coping strategies (Epstein & Meier, 1989), life satisfaction (Hamarta, 2009), self-esteem (Rosenberg, 1965), etc.

The questionnaire was also translated and adapted for different countries, among which was Spain (Maydeu-Olivares et al, 2000), Africa (Sorsdahl, Stein, Myers, 2015), China (Siu, Shek, 2005), Germany (Graf, 2003), Iran (Bayani, Ganji, Bayani, 2013), Peru (Merino, 2012), etc. The results of these studies indicate a certain cultural specificity of social problem solving. While the main structural components of the questionnaire were similar, its individual parameters vary considerably.

To date, there is no adaptation of SPSI-R on the Russian sample. So it is impossible to compare questionnaire versions structures or to conclude that there are reproducible links between SPSI-R scales and other constructs, such as coping strategies and life satisfaction, among the population of the Russian Federation.

3.   Research Questions

In this article, we find out whether data collected on the Russian sample is consistent with the data obtained in the American sample. In addition to comparing the structures of the original and adapted

questionnaire versions, we compare the correlations between the SPSI-R scales and constructs, studied by other authors.

In the article by D'Zurilla, Chang (1995), the relationship between SPSI-R scales and coping strategies was analyzed. Experiential coping strategies were measured by Constructive Thinking Inventory (CTI) (Epstein & Meier, 1989), and Functional coping strategies were measured by Coping Strategies Inventory (CSI) (Tobin et al, 1989).

In a study by Hamarta (2009), a correlation between the SPSI-R scales and the level of life satisfaction on the basis of the Satisfaction with Life Scale (SWLS) questionnaire (Diener et al, 1985) was found.

Based on these works, the following correlation hypotheses were formulated:

The Satisfaction With Life Scale is a) positively associated with the SPSI-R scale - Rational style of problem solving; B) negatively associated with the SPSI-R scales - Negative problem orientation, Impulsivity style of problem solving, Avoidance style of problem solving.

Since the CSI and CTI questionnaires are also not adapted on Russian sample, we extrapolated D'Zurilla, Chang results to the COPE (Carver, Scheier, Weintraub, 1989) questionnaire, which was adapted and has already been used in coping studies in Russia. The ratio of hypothetical and obtained in this study correlations can be seen in Table 3.

4.   Purpose of the Study

The aim of this study was the adaptation and validation of the Social Problem-Solving Inventory-Revised (SPSI-R) on Russian sample.

5.   Research Methods

329 subjects aged 18 to 45 years were examined at the step of the primary version of the questionnaire approbation. 466 subjects aged 18 to 45 years participated at the step of verification of the constructual validity of the questionnaire. The sample was presented by citizens of Russian Federation, for whom the Russian language is native.

The data was collected remotely, in the form of filling out online questionnaires. The study used the original SPSI-R questionnaire which items and instruction were translated by psychologists and native speakers in a direct and reverse way.

The reliability-consistency check was carried out by calculating the Alpha Cronbach coefficient for each item (N = 329). Coefficient of 0.74 was regarded as the critical value. Items that showed higher significance level were included in the final version of the questionnaire.

Confirmatory factor analysis was used to model the structure of the questionnaire. We used Amos Graphics, version 19.0, for the structural equations procedure. Evaluation of the construct validity of the questionnaire was carried out using two methods:

1.The COPE questionnaire (Carver, Scheier, Weintraub, 1989) (adaptation: Gordeeva, Osin, Rasskazova, Sychev, Shevyakhova (2013), which consists of 60 items combined in 15 scales corresponding to coping strategies.

2.The Satisfaction With Life Scale (Diener, Emmons, Larsen) (adaptation: Leontiev, Osin (2008) is a short (5 items) questionnaire that allows Evaluate the individual's emotional experience of his own life as a whole, reflecting the general level of psychological well-being.

Correlation hypotheses were verified by calculating the Pearson correlation coefficient (N = 466).

6. Findings

As a result of the study, it was found that the structure of the Russian version of the questionnaire and the original five-factor model did not match. The factor "Positive problem orientation" was completely excluded from the questionnaire due to low reliability-consistency indicators of the items. Similar results were obtained by researchers who adapted the questionnaire to a sample of Chinese (α = 0.64) and Turkish (α = 0.62) residents. A number of items from other scales were also excluded: 7, 9, 16, 19, 26, 28, 35, 37, 38, 39, 40, 43, 44, 46, 47, 48, 49.

The original structure of the questionnaire without the factor "Positive problem orientation" was used in structural equations analyses. As a result, the original model was confirmed (Fig.1). The only point on which it differs from the original one is item 42, which was not included in the scale "Negative problem orientation", but in the "Avoiding style of problem solving" scale. Since the scales in the initial questionnaire are highly correlated, such transition can be either an artefact or associated with the interpretation of that item in Russian culture.
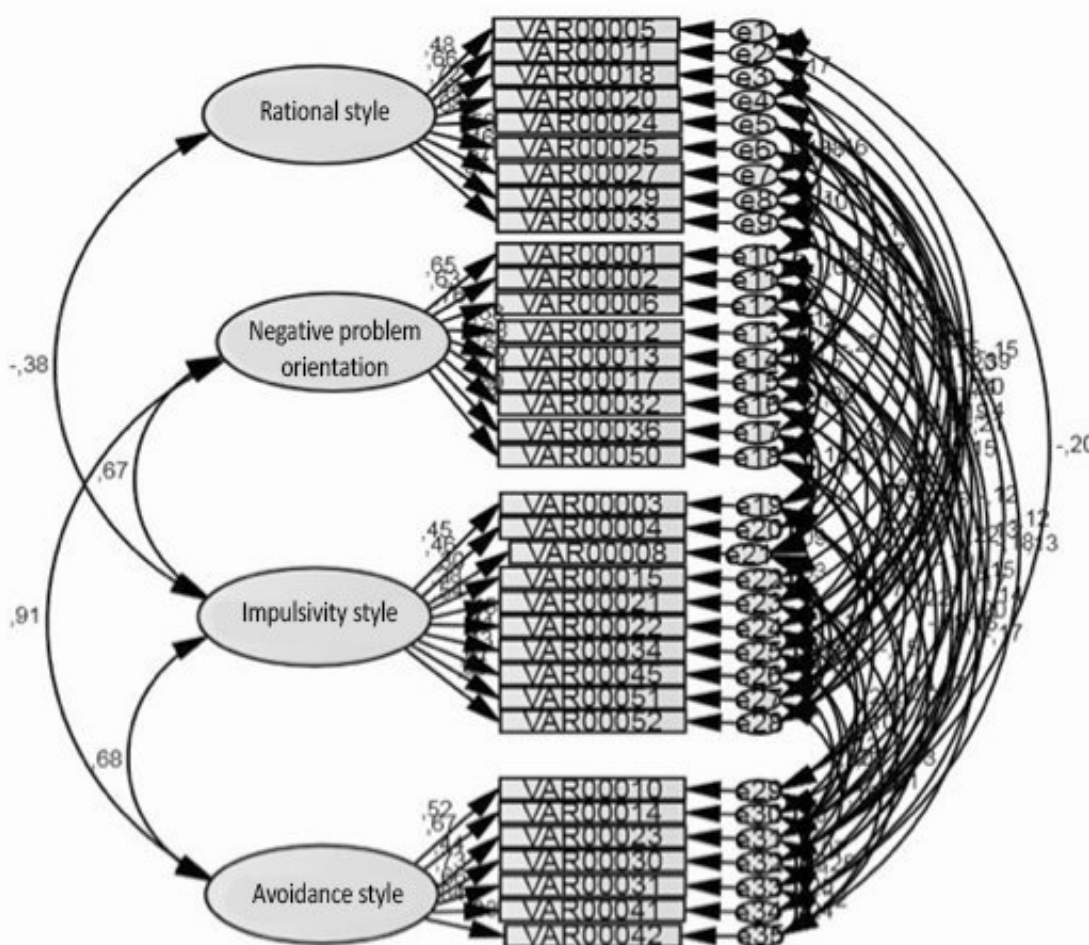

Figure 01. The four-factor model of the questionnaire SPSI-R Russian version

A CFI of more than 0.90 indicates a normal model, and if the index exceeds 0.95, then the model is considered good. In our model, the CFI is 0.957. The GFI index, which exceeds 0.9, also indicates that the model is good (in our model, GFI = 0.902). The indicator RMSEA, which should be less than 0.5 in our model shows 0.037 score. PCLOSE, exceeding 0.5, is equal to 1. The ratio of χ-square to Degrees of Freedom (DF) must be less than 2, which is also observed in our model.

In Table. 1. significant correlations are shown.

Table 01. Significant correlations between the scales of SPSI-R, COPE and the Scale of life satisfaction (p <0.001)

	Rational style	Impulsivity style	Avoidance style	Negative Problem Orientation
COPE scales				
Active coping	0,393	-0,26	-0,45	-0,40
Planning	0,538	-0,5	-0,33	-0,24
Suppression of competing activities	0,29			
Positive reinterpretation and growth	0,25	-0,14	-0,15	-0,31
Humor	0,19			-0,17
Use of instrumental social support	0,13			
Mental disengagement	-0,14	0,17	0,38	0,33
Focus on and venting of emotions	-0,10	0,13		0,24
Denial	-0,15	0,18	0,30	0,43
Behavioral disengagement	0,26	0,35	0,58	0,53
Substance use	-0,09		0,22	0,23
Restraint			0,35	0,27
Acceptance			0,23	0,20
Use of emotional social support			0,16	0,23
Satisfaction With Life Scale	0,25	-0,14	-0,25	-0,34

The verification of construct validity shows that our data matches the results of other studies. Thus, in Table 2 it is shown that correlation of the SPSI-R scales with Satisfaction With Life Scale corresponds to the similar data obtained earlier in Hamarta's study (2009):

Table 02. Comparison of the correlation coefficients of the scales of SPSI-R and the SWL scale

Scale	Hamarta (2009)	Current study
Positive Problem Orientation	0,31, p<0,01	-
Negative Problem Orientation	-0,22, p<0,01	-0,34, p<0,001
Rational style	0,31, p<0,01	0,25, p<0,001
Impulsivity style	-0,20, p<0,01	-0,14, p<0,001
Avoidance style	-0,25, p<0,01	-0,25, p<0,001

In Table. 3, the correspondence of the correlation hypotheses based on D'Zurilla and Chang (1995) and the actual correlations between the scales of the SPSI-R and COPE are analyzed. The coping strategies "Focus on and venting of emotions" and "Use of emotional social support" in our sample were positively related to the scales "Negative problem orientation", "Impulsivity style" and "Avoidance style", whereas it to be negative. Such an effect can be attributed to the cultural specifics of the sample or justified by the indirect comparability of these scales.

Table 03. Comparison of the hypothesised and identified correlations between SPSI-R and COPE

Scales	Results		Hypothesis
Rational style	Similar		
	Positive correlation: ● Active coping ● Planning ● Positive reinterpretation and growth		
Impulsivity style	Similar		
	Positive correlation: ● Behavioral disengagement Negative correlation: ● Active coping		
	Different		
	● Focus on and venting of emotions		
	Positive correlation	Negative correlation	
Avoidance style	Similar		
	Positive correlation: ● Behavioral disengagement ● Mental disengagement ● Denial Negative correlation: ● Active coping		
	Different		
	● Use of emotional social support		
	Positive correlation	Negative correlation	
Negative Problem Orientation	Similar		
	Positive correlation: ● Mental disengagement ● Denial ● Behavioral disengagement ● Substance use Negative correlation: ● Positive reinterpretation and growth ● Active coping ● Planning		

Different	
● Focus on and venting of emotions ● Use of emotional social support	
Positive correlation	Negative correlation

7. Conclusion

Thus, we see that the data obtained during the validation of the Russian version of the questionnaire generally shows results consistent with the data of similar studies. This version of the questionnaire with a four-factor structure demonstrates satisfactory psychometric properties, which allows it to be used for research purposes. It should be emphasized that this is the first adaptation of a questionnaire to identify the styles of solving social (personal) problems on Russian sample. The prospect of studying this tool is testing its test-retest reliability and other types of validity (ecological, divergent, criterion), as well as identifying age and gender characteristics of problem-solving styles.

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