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ROMANIAN ADAPTATION OF THE RYFF'S PSYCHOLOGICAL WELL-BEING SCALE: BRIEF REPORT OF THE FACTOR STRUCTURE AND PSYCHOMETRIC PROPERTIES

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Abstract

Recently, the focus of both practitioners and researchers on the positive side of mental health and the emphasis on the role of well-being for healthy human functioning have increased. Therefore, the use of appropriate measures for well-being is important, in order to decide the right amount of support that a person needs in order to achieve a good level of psychological health. The aim of the present study is to determine the reliability of the Ryff's Scales of Psychological Well-Being (Ryff, 1989; Ryff & Keyes, 1995) and to test the multidimensional model of well-being on a heterogenous Romanian sample. After the initial linguistic adaptation of the instrument, we used it in two larger studies and subsequently tested its factor structure. The results of the confirmatory factor analysis, as well as several descriptive data of the whole sample are presented and discussed. Our investigation shows the moderate adequacy of the 6-factor model, as well as satisfying psychometric values of the scale and further testing of the instrument would be necessary in order to confirm its utility in Romania for both practice and research.

Keywords: psychological well-being, multidimensional model, confirmatory factor analysis, model fit, psychometric properties, cultural adaptation

Background

Over the recent period, the interest in the prevention of psychopathology, in resilience and protective factors, as well as the positive side of mental health has increased in the psychological science. Therefore, the focus changed from illness-related factors to well-being and quality of life, sustaining psychological health.

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The definition of well-being has been refined and several instruments were designed for its measurement (Abbott, Ploubidis, Huppert, Kuh, & Croudace, 2010). The concept of well-being has been introduced by the World Health Organization (WHO) in 1948 through its classic definition of health as "a state of mental, physical and social well-being" (WHO, 1948), finding afterwards a front place among the subjects that concern governments and organizations. Most of the studies were focused on measuring adult individual well-being and it is quite recently that the interest in children's welfare and in the role that families play in children's well-being has increased (Wollny, Apps, & Henricson, 2010).

Well-being is a broadly investigated concept, especially in the field of social psychology and a lot of controversies were raised as to how this concept is to be defined or measured (Tint & Weiss, 2016). In a historical perspective, the roots of well-being can be found in the Greek philosophy, related to the principles of health and holism (Ryan & Deci, 2000; van Dierendonck, Díaz, Rodríguez-Carvajal, Blanco, & Moreno-Jiménez, 2008). The interest of the psychologists has since then been focused on subjective well-being with two approaches: the hedonic tradition, which emphasizes constructs such as happiness and pleasure and the balance of positive and negative affect, and the eudaimonic tradition, which emphasizes psychological meaning and growth, the person's relation with the authentic self (Springer & Hauser, 2006; Tint & Weiss, 2016). The eudaimonic tradition in the conceptualization of well-being is connected with existential and humanistic psychology and the emphasis on self-actualization and meaning of life (Šarotar Žižek, Treven, & Čančer, 2015) for the optimal functioning of the human being.

Besides individual well-being, the role and characteristics of the family that underlie the well-being of each member and of the whole family system were researched by various authors. Across studies, family well-being was viewed with positive connotations, but for the fundamental nature of this concept, disparate ontological categories were proposed (Tint & Weiss, 2016). One of the approaches was perceiving family well-being as a subjective concept that leads to physical and mental health outcomes. Benson (2012) used a definition of well-being introduced by Mirowsky and Ross (2003): "a general sense of enjoying life, feeling happy and hopeful about the future" and he conceptualized well-being together with depressive symptoms, as a component of mothers` psychological adjustment. One other approach was to see well-being as a "collection" of different constructs, with both physical and mental health being parts of it (Binnendyk & Lucyshyn, 2009).

Regarding family well-being, the construct includes family cohesion, family expressiveness and conflict and also family agreement regarding children's education. Studies revealed four variables that promote child wellness: caregiver variables, variables connected with family environment (good relationship between partners and family members), child variables and those related to possible major stressors (Cowen, 2000). In this view, the field of family well-being includes the organizational structure (family's cohesion, agreement regarding caregiving), interpersonal relationships (within the family and with other family members, or with friends) and parent self-efficacy (parent's competence in solving children's problems) (Armstrong, Birnie-Lefcovitch, & Ungar, 2005).

Given the complexity of the construct, it appears difficult to reach an agreement about which components should be included when referring to either the theory or the measurement of psychological well-being (Forgeard, Jayawickreme, Kern, & Seligman, 2011). More recently, however, there seems to be a consensus among researchers regarding the meaning of well-being, seen as a multifaceted construct, that includes emotional, social and functional components with broad policy implications (Ryff & Keyes, 1995). Based on psychosocial development theory, clinical perspective on personal development, positive mental health criteria (the presence of positive characteristics rather than the absence of pathology, Jahoda, 1958), Ryff developed a comprehensive theory on psychological well-being that is nowadays one of the most widely implemented models of well-being as a multi-dimensional construct (Abbott et al., 2010). In Ryff's model of psychological well-being, six dimensions have been described as facets of the construct and were linked to the individual's happiness and contentment:

1) *Self-acceptance*, a positive attitude about oneself and the past experiences, acceptance for the multiple aspects of the self, for both good and bad aspects and acknowledgement of personal qualities;
2) *Positive relations with others*, marked by warmth, satisfaction, trust, preoccupation for other people's well-being, high empathy, intimacy, reciprocity in giving and receiving;
3) *Autonomy*, self-determination, independence and freedom from social pressures and norms, self-regulated behavior, self-guided assessment based on own standards;
4) *Purpose in life*, a sense of meaningfulness regarding both past and present life, doubled by concrete goals and directions for the future;
5) *Environmental mastery*, the ability to manage own life and the surrounding environment, a sense of control and competence regarding the environment, complex activities, the use of opportunities, the ability to choose or create the right context for own needs and values, problem-solving skills for daily challenges;
6) *Personal growth*, the openness towards new experiences and continuous personal development, a sense of progress, a feeling of self-fulfillment, self-improvement, self-awareness and self-efficacy (Ryff, 1989; Ryff & Keyes, 1995).

Given the importance of the concept of well-being in both theoretical models and clinical and educational practice, a reliable measure would be useful for both researchers and practitioners. One of the most valid survey instruments is Ryff's multi-dimensional Psychological Well-Being scales (PWB, Ryff, 1989; Ryff & Keyes, 1995; Abbott et al., 2010). The instrument has several versions, it was used in a diversity of settings and samples, and its factor structure and psychometric properties were tested in a variety of cultures (Abbott et al., 2010), with mixed results.

Šarotar Žižek, Treven, and Čančer (2015) tested an adapted version of the PWB on a sample of Slovenian employees in order to develop a model that can be implemented for the improvement of organizational practices. The authors confirmed the multidimensionality of the psychological well-being model, but selected three of the constructs that proved to be the most relevant for the Slovenian employees' well-being: "positive relations with others", "autonomy" and "self-acceptance". The model fit proved to be optimal and the authors recommended the use of the instrument for the design of programs concerned with the well-being of employees in Slovenia.

Other cultural adaptations of the instrument were performed and tested by van Dierendonck et al. (2008) on a Spanish-speaking population of 919 participants from Spain and Colombia. The 6-factor model, developed on Anglo-Saxon culture, was accepted as the best fit by the authors, with adequate goodness of fit indexes, although several changes were recommended as a result of research conducted across various cultures. The inclusion of a second order well-being factor was the main recommendation based on the results. Also, the authors found low internal consistencies for some of the subscales. Lower than .70 alpha Cronbach was found for the Environmental Mastery subscale (van Dierendonck et al., 2008), while the authors found acceptable internal consistency for four of the subscales, with alphas between .70-.79 and only the Purpose in Life subscale had a good internal consistency, with a value higher than .80 for alpha Cronbach. However, the authors considered the instrument as a promising measure of well-being, that proves consistent across different cultures and the six underlying dimensions of Ryff's model were confirmed. Another validation of the Spanish version of the measure was conducted on a sample of 335 adolescents from Chile and the authors confirmed the best fit of Ryff's 6-factor model for their data, but values between acceptable and bad for the six subscales (Gallardo Cuadra & Moyano-Díaz, 2012), that were partially adjusted by eliminating some of the items.

A test of the cross-cultural structural invariance of the Ryff's 18-item scales across Italian and Belarusian high school students (Sirigatti, Penzo, Iani, Mazzeschi, Hatalskaja, Giannetti, & Stefanile, 2013) showed the 6-factor model was the best fit in both cultures, but the authors recommend future researches in order to confirm the applicability of the measure in various contexts, as well as its generalizability to other populations.

Besides the studies mentioned above, various versions of the Ryff's scales were culturally adapted and tested in some Asian cultures, in Korea (Choi & Choi, 2016), China and Taiwan (Li, 2014), as well as some other European cultures, such as Serbia (Nišević & Cigić, 2013) and Spain (Freire, Ferradas, Núñez, & Valle, 2017) and some English-speaking cultures, such as the U.S.A (Hsu, Hsu, Lee, & Wolf, 2017) and Australia (Burns & Machin, 2009).

So far, an assessment questionnaire for well-being was developed in Romania and tested internationally (Iliescu, Sulea, Ispas, & Ilie, 2016), but it is focused on well-being at the workplace. Regarding the Ryff scales, the 44-item

version was tested on a large convenience sample of Romanian participants by Kállay & Rus (2014) and found to be a reliable measure for psychological well-being in the Romanian culture, although the authors recommended caution in the interpretation of their results, due to their sample characteristics and the selection of the research participants. Our goal was to culturally adapt and test the reliability of the 54-item version of the Ryff's Psychological Well-Being scale on Romanian population. Despite reported evidence for the misfit of the 6-factor model, as well as lower internal consistency found by various authors, we decided to use the measure in our research based on its sound theoretical foundation (Ryff & Keyes, 1995; van Dierendonck et al., 2008), on the argument that it is a more in-depth measure of well-being than shorter versions of the measure, and based on some reported results that confirmed its factor structure. Therefore, we decided that there are enough arguments in favor of the idea that the measure is a promising instrument for psychological well-being that can be used in clinical practice and research.

Method

Participants

Our sample was formed of 239 participants, mostly women, who volunteered to be part of two larger studies.

A number of 148 of the participants, students in various fields, participated in a research conducted on attachment in relation with intrapsychic and interpersonal characteristics in young adult women. The sample was selected with the help of several tutors, who agreed to disseminate the information about the study among their students. The mean age of the participants was 20.13 (±1.81) years.

The other 91 participants were parents of children with Down Syndrome and Autism Spectrum Disorders, who participated in a research on parental distress and well-being. The participants were recruited with the contribution of their children's teachers and therapists, who shared the information about the study and gathered the completed questionnaires. The mean age of the sample was 39.72 (±7.42) years.

Most of the participants from both samples came from urban areas and most of them were either married or in a relationship.

Table 1. Demographic characteristics of the sample.

		Parents	**Students**
Age			
	minimum (years)	24	18
	maximum (years)	64	26
	mean (SD) (years)	39.72 (7.42)	20.13 (1.81)
Gender			
	male (%)	15.3%	-
	female (%)	84.7%	100%

		Parents	Students
Background			
	urban (%)	77.8%	78.8%
	rural (%)	22.2%	21.2%
Marital status			
	single (%)	7.9%	38.5%
	in a relationship (%)	84.2%	61.5%
	divorced (%)	7.9%	-

As seen in table 1, our sample is mostly formed of female gender, urban resident participants, involved in a couple relationship. The sample is heterogenous, not randomized, therefore the results should be treated with caution, as both the results and discussions are restricted to only a part of the Romanian population.

Instrument and procedure

The assessment instrument for psychological well-being adapted in Romanian language for the purposes of the current study was the Ryff Scale for Psychological Well-Being (Ryff, 1989). The instrument is based on Ryff's theory and operationalizes the construct on the six dimensions of the model (Ryff, 1989). Based on an initial 120-item version of the scale, the author developed a long version of the scale (with 14 items on each of the six subscales), a medium version (with 9 items on each subscale) and a short version (with 3 items on each subscale). As the short version proved to have weak validity, the author does not recommend its use in research. We chose for the current study the 54-item version of the instrument, as a measure for eudaimonic well-being due to its better psychometric properties reported by the authors, compared to the short version (Ryff, 1989). Each item is rated on a 6-point Likert scale, ranging from 1 (strong disagreement) to 6 (strong agreement), with 28 negative items that need reverse scoring.

After reverse scoring the negatively-phrased items, the total score for a dimension is obtained by summing the scores that the participant chooses for each of the items that belong to the particular dimension. The scores range from a minimum of 9 to a maximum of 54 for each of the six dimensions and higher scores reflect higher levels of well-being on the particular dimension.

Though widely used in research on psychological well-being, the psychometric properties of the instrument were disputed. Further research is needed in order to validate the instrument for use in clinical assessment and practice and the underlying dimensional structure needs more in-depth work (Abbott et al., 2010).

A Romanian version of the instrument was obtained after the translation and adaptation of the 54 items of the measure. Following the translation from English to Romanian, a back translation was made, the two versions were compared and all the differences between them were corrected, until the final phrasing proved to have a high degree of accuracy, regarding both the correspondence between Romanian and English languages and the right phrasing of the items in Romanian language.

The Romanian version of the measure was accompanied by a demographic questionnaire that described the sample characteristics. All the participants were given the instruments in written format and they completed both the demographic questionnaire and the scale without a time limit at their homes and returned the completed forms to the contact person of the authors. All the participants were informed about the goals of the research they volunteered to be part of and an informed consent was given to each of them before they agreed to complete the measure.

Results and discussions

The analysis included all the participants from the two samples and the missing data were replaced using linear interpolation. The data were analyzed to test the factor structure and compute the psychometric properties of the scale, as well as preliminary results regarding the inter-correlations among subscales and the means and standard deviations of the scores on each of the subscales.

Factor structure of the instrument

In order to test the adequacy of the factor structure on our sample, confirmatory factor analysis (CFA, as described in Sava, 2011) was performed using Lisrel 8.7 software (Jöreskog & Sörbom, 2004). The Unweighted Least Squares was chosen as preferred method for the testing of model fit, based on the arguments we found in various scientific papers: the data we tested (the item responses) are ordinal, the method is independent of the data distribution, and it provides higher accuracy in parameter estimates compared to other methods, such as diagonally weighted least squares (Forero, Maydeu-Olivares, & Gallardo-Pujol, 2009; Li, 2016). We found a non-normal data distribution on some of the variables (items of the instrument), as shown by the values of skewness and kurtosis indexes (the reference point being ±.80 for both indexes). We tested and subsequently compared the values of the indexes for the uncorrelated 6-factor model, which assumes the relative independence of the six dimensions of the scale and the correlated 6-factor model, assuming that the six dimensions are significantly correlated, as suggested by the author of the instrument (Ryff, 1989). The results of the CFA are shown in table 2.

Table 2. Results of the CFA of the instrument structure.

	χ^2 (df)	RMSEA [CI]	Standardized RMR	GFI	PNFI
correlated 6-factor model (Ryff, 1989)	2797.05 (804)	.10 [.098; .11]	.09	.88	.93
uncorrelated 6-factor model	3672.55 (819)	.12 [0.12; 0.12]	0.18	0.49	0.67

Note: RMSEA = Root Mean Square Error of Approximation, RMR = Root Mean Square Residual, GFI = Goodness of Fit Index, PNFI = Parsimony Normed Fit Index

Compared to the uncorrelated 6-factor model, the correlated 6-factor model proved to be a better fit for our data. Similar results were obtained by Kállay and Rus (2014) for the 44-item version of the scale, as the correlated 6-factor model was the best fit for the data the authors analyzed. Therefore, we can consider the model we developed, theoretically supported and empirically tested by the authors of the scale (Ryff, 1989) as adequate for the conceptualization of psychological well-being in the Romanian cultural context.

However, given the values of the indexes within CFA, the 6-factor model proved to be a moderate approximation for the data we analyzed within the current study. According to Kelloway (1998), cited by Sava (2011), several values of the goodness-of-fit indexes and the residuals represent measures of the adequacy of the model tested in the CFA. A statistically non-significant χ^2, a value of the root mean squared residual (RMR) lower than .10, a root mean squared error of approximation (RMSEA) with the maximum limit of the confidence interval lower than .08, as well as a goodness of fit index (GFI) higher than .90 represent indexes of the degree of adequacy of a model. A good model means that it offers a good explanation for the evolution of the observed data (Sava, 2011). More liberal criteria exist in the assessment of the goodness of fit of the factor models, so a GFI with a value over .85 may be acceptable for a good model (Sava, 2011), while a value of the RMSEA≤.10 might be acceptable according to some authors (Browne & Cudeck, 1993; Meyers, Gamst, & Guarino, 2006). We also reported the parsimony adjusted normed fit index (PNFI) in order to have a measure of the comparison of the two models tested. The higher value of the index specifies the better model (Sava, 2011).

The values of the errors of approximation we found in the testing of our data were slightly higher than those recommended for a good model, while the goodness of fit indexes were also smaller than the recommended values, but they were close to the values suggested according to more liberal criteria for model fit. We recommend further testing of the correlated 6-factor model of the 54-item version of the scale on other Romanian samples, in order to prove its adequacy and become a reliable instrument for the assessment of well-being, for intervention programs design as well as policy development regarding the well-being of the population, in general, and parents of children with disabilities in particular.

Internal consistency of the subscales

As shown in table 3, four of the subscales have questionable internal consistencies and only two were found to have acceptable alpha Cronbach values on our sample. This result is different from that reported by the author, who found better internal consistency for the 54-items version of the measure on the original English-speaking sample. However, lower internal consistencies were found by various authors for different versions of the instrument, while the models were still considered acceptable.

Table 3. Comparison of values of alpha Cronbach of the scale, reported by the author and from the current investigation.

Alpha Cronbach Scale	Reported by the author	Determined in the current study
Self-acceptance	.91	.759
Positive relations	.88	.695
Autonomy	.83	.650
Purpose in life	.88	.629
Environmental mastery	.86	.747
Personal growth	.85	.650

Data collection process, as well as the componence of our sample might partly explain the low internal consistency of some of the subscales. The heterogeneity of the sample, with parents of children with disabilities hypothetically having different perception on positive relations with others, the meaning of autonomy, different purposes in life and sources of personal growth than young people could be one explanation. Also, in the case of parents, their difficulties related to the process of raising a child with disabilities might have an influence on the way they assess various components of well-being along the items of the subscales. The general agreement among various items that our participants reported and that contribute to the value of the internal consistency of the scale might also be influenced by the sample characteristics, such as heterogeneity in age, gender, professional background, level of education.

Intercorrelations of the six subscales

As seen in table 4, the six subscales are significantly and positively intercorrelated, but not all the values of the correlation quotients are high. The "Purpose in Life" subscale, though significantly correlated with the rest of the subscales, has a weak association especially with "Autonomy" and "Self-acceptance" subscales. Our results are consistent with those reported by the authors of the scale, who found that the 6 factors are intercorrelated.

Table 4. Values of the Pearson correlations between the subscales.

	1	2	3	4	5
1. Self-acceptance					
2. Positive relations with others	.520**				
3. Autonomy	.581**	.420**			
4. Purpose in life	.364**	.430**	.289**		
5. Environmental mastery	.682**	.520**	.649**	.413**	
6. Personal growth	.428**	.530**	.372**	.546**	.421**

**. Correlation is significant at the 0.01 level (2-tailed).

Descriptive values and distribution characteristics

We decided to report the values of the means, standard deviations and the other descriptives on the whole sample, as we had a small number of participants from various subgroups. Although it would be interesting to investigate the differences in well-being based on demographic characteristics, such as the changes with age, we could not support such an analysis on the present sample. Moreover, Springer, Pudrovska, and Hauser (2011) found that longitudinal variations of well-being with age are small and an age-specific profile cannot be determined.

As seen in table 5, our data are normally distributed for all the 6 subscales of the instrument, and the whole sample tended not to have very low levels of well-being, as shown by the minimum values. This was an expected result, given that all the participants were clinically healthy individuals.

Table 5. Descriptives of the subscales, for the whole sample.

	Min.	Max.	Mean	Std. Dev.	Skewness		Kurtosis	
					Statistic	Std. Err.	Statistic	Std. Err.
Self-acceptance	14.00	54.00	38.14	7.21	-.339	.162	.197	.322
Positive relations with others	19.00	53.00	39.78	6.72	-.089	.162	-.365	.323
Autonomy	20.00	53.00	37.39	6.14	.080	.163	.125	.325
Purpose in life	23.00	54.00	39.96	6.22	-.134	.161	-.577	.321
Environmental mastery	16.00	53.00	39.17	6.42	-.370	.163	.274	.325
Personal growth	24.00	54.00	39.47	6.05	-.061	.163	-.346	.324

Conclusions

The current research aimed at testing the psychometric properties and Ryff's 6-factor model of well-being on a Romanian sample of clinically healthy adults. In the light of recent research in positive psychology and mental health, the importance of well-being as a concept and the development of psychometrically sound measures have increased. The need to adapt and test Romanian versions of the construct derives from the needs of research and practice in the fields of mental health, educational and organizational fields. In the light of economic and social changes that take place rapidly in Romania, there is a need to assess the well-being of the population that was also identified by Kállay and Rus (2014). These constant and rapid changes might affect the inclusion, as well as the well-being of both young population and vulnerable parts of the population, such as people with disabilities and their parents.

We chose the 54-item of the Ryff's Psychological Well-Being Scale (Ryff, 1989) as the measure tested in our research due to the larger number of items on each dimension compared to shorter versions, which can be a more in-depth assessment of the construct, but at the same time a less time-consuming measure, compared to longer versions.

The Ryff's Psychological Well-Being Scale we tested proved to have moderate psychometric properties on Romanian population, as shown by its internal consistency, while the factor structure tested on several cultures was only partially replicated on our sample. Despite its limitations, the 6-factor model of the scale, with the six factors intercorrelated (Ryff, 1989; Ryff & Keyes, 1995) was eventually accepted as best fit, based on our analysis, the conclusions that other authors drew from their investigations, and based on its sound theoretical foundations.

Regarding the distribution of the scores, very low values of the construct were not found on our sample, as all the participants were physically and mentally healthy persons. As a direction for future research, it would be interesting to investigate the sensitivity of the instrument for lower levels of well-being.

The main limitation of our study is the sample size, as well as its heterogenous composition, and the selection manner, by convenience.

As both the factor structure and the internal consistency of the instrument were found to have several limitations, caution is recommended in the use of the scale on Romanian population and further research is needed on larger and more homogenous samples, in order to identify the problematic items and determine the cultural invariance of the model.

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