Adapting and validating Ryff`s psychological well-being scale on Romanian student population

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Abstract	This study aims to present the adaptation and the initial investigation of the psychometric proprieties of Ryff`s Psychological Well-being Scale on Romanian student population. The non-reversed, 44-item scale was already validated on Romanian population (Kállay, Rus, 2014) but there is a growing need for a more complex instrument for research and assessing the well-being of college students. Dr. Ryff recommends the use of the long form of PWBS as it was proved it does a good job of covering the content of the six well-being constructs. We consider that the long form of Ryff`s scale (84 items) is a more valid measure of well-being, capable to offer a better diagnosis by its six scales: autonomy, environmental mastery, personal grows, personal relations with others, purpose in life and self-acceptance. The initial assessment of the psychometric proprieties was conducted on 90 college students enrolled in Educational Sciences specializations. A reliability alpha Cronbach analysis was conducted, per scales and per item. The items that afected the reliability per scale was reformulated. Also, a reliability split half analisys and a corelation with other well-being scales was conducted. We determine that the long form of Ryff scales presents very good reliability coefficients, similar or even better than some scales reported coefficients. In the next step we will conduct a factor analysis on a larger student population to further validate the scale. The scale is a reliable instrument for future research and counseling.

Keywords:
Ryff`s Psychological
Well-being Scale, well-being, college students, scale validation

Schlüsselworte:
Ryff`s psychologische
Wohlbefindungsskala,
Wohlbefinden,
College Studenten,
Skalenvalidierung

Zusammenfasung

Dieses Studium hat als Ziel die Anpassung und die initielle Ermittlung der psychometrischen Eigenschaften der psychologischen Wohlbefindungsskala von Ryff an der rumänischen Studentengruppen. Die nicht reversiblen 44-Item Skala war bereits bestätigt für die rumänische Bevölkerung (Kallay & Rus, 2014), jedoch gibt es eine wachsende Notwendigkeit für ein komplexeres Instrument für die Erforschung und die Bewertung des Wohlbefindens der Studenten. Dr. Ryff schlägt den Gebrauch der längeren Form von PSW vor, da es bewiesen hat, dass es erfolgreich bei der Abdeckung des Inhalts des sechs Wohlbefindungskonstruktes ist. Wir konsiderieren, dass die längere Form der Ryff-Skala (84 items) als eine validere Messart des Wohlbefindens gilt, da diese im Stande ist eine bessere Diagnose, anhand der sechs Skalas, stellen zu können. Diese wären: Autonomie, Beherrschung der Umwelt, Persönlichkeitsentwicklung, individuelle Beziehungen mit anderen, Lebensziel, Selbstakzeptanz.
Die initielle Einschätzung der psychometrischen Eigenschaften wurde an 90 Studenten, die in erziehungswissenschaftlichen Spezialisierungen eingeschrieben waren, durchgeführt. Eine Zuverlässigkeitsanalyse Alpha Cronbach wurde mit Hilfe von Skalas und Items realisiert. Die Items, welche die Zuverlässigkeit beeinflussten, wurden daraufhin reformuliert. Zudem teilte die Zuverlässigkeit die Hälfte der Analyse und Wechselbeziehungen mit anderen Wohlbefindungsskalas in dieser Durchführung. Wir determinieren dadurch, dass die längere Form der Ryff-Skala einen hohen Zuverlässigkeitskoeffizienten, beziehungsweise einen ähnlichen oder sogar besseren Koeffizienten als andere bekannte Skalas darstellt. Im Folgenden werden wir eine Faktoranalyse an einer größen Studentengruppe duchführen, um weiterhin die Skala zu validieren. Die Skala ist ein zuverlässiges Instrument für die zukünftige Forschung und Beratung.

1. Introduction

The increasing interest in college students` well-being has heightened the need for developing and adapting instruments that measure accurately this construct. The study of students` well-being has become an important aspect of developing qualitative academic programs that foster not only an academic competence but also a social and personal one. More and more researchers (Dvorakova et al., 2017; Shapiro, Brown, Astin, 2008) view the mission of college education not only to train professionals but also to address the students as "whole persons", which includes, besides the professional knowledge, the socio-emotional dimension and the personal development. Other studies (Sparkman, Maulding & Roberts, 2012; Beauvais et al., 2013; Seider, Clark, & Soutter, 2015) emphasize the need to consider

the non-cognitive factors, such as well-being, in achieving academic success.

In recent years, researchers have become increasingly interested in the concept of well-being in the academic setting. The importance of studying this construct in the academic environment is linked to mental health issues encountered (Mulder, Cashin, 2015; Whiteside et al., 2017) but also with achievement (Turner, Scott-Young, Holdsworth, 2017) and preventing drop-out (Faas, Benson, Kaestle, Savla, 2017). All these arguments support the need to develop some university-based interventions to improve and foster well-being in the academic community along with some counseling programs aiming to enhance resilience.

2. The concept of well-being

Well-being is a central concept in positive psychology, over the last decades a lot of researchers focus their efforts to conceptualize and transfer it into practice. Two main directions have emerged in operationalization of the well-being construct: hedonic or eudaimonic (Chandler, Robinson, 2014). The hedonic approach views well-being as a state of subjective pleasure and satisfaction and its` been referenced as subjective well-being (SWB) (Bauer, Mcadams, 2010). The eudaimonic perspective views well-being as optimal functioning and positive life experiences (Ryan, Deci, 2001). The eudaimonic approach was theorized by Carol Ryff and Burton Singer (Ryff, Singer, 1998) and stands at the base of Ryff`s Pychological Well-being Scale. This approach stands at the base of the Psychological Well-being (PWB) and refers to the development of personal abilities, acting in accordance with high personal values, the attainment of personal potential or the experience of purpose and meaning in life (Mcmahan, Estes, 2011). Ryff (1998) advanced six dimensions of PWB: purpose in life, personal growth, self-acceptance, environmental mastery, autonomy and positive relations. These dimensions have been operationalized in the six scales of the Ryff`s PWBS. The purpose in life refers to having a meaning in life, a vocation, a meaningful direction (Ryff & Singer, 2008). Personal grows is viewed as a need of personal development and a desire of achieving ones` potential (Ryff & Singer, 2008). Self-acceptance means to have a positive attitude towards own self, to accept what we are with all the positive and negative aspects (Ryff & Singer, 2008). Environmental mastery invokes the perception of competence in environmental management, managing daily activities, and select fitting environments for

personal needs (Ryff & Singer, 2008). Positive relations indicates the capacity of developing and sustain satisfying relationships and to demonstrate empathy towards others (Ryff & Singer, 2008). Autonomy means to be independent, be self-determine and capable of making personal choices (Ryff & Singer, 2008).

3. Ryff's psychological well-being scale

In 1989 Ryff (1989) presented a new developed scale for assessing PWB, the Ryff Scale of Psychological Well-being (PWBS), that operationalized the eudaimonic approach of well-being adopted by the author. She subsumed the well-being construct in six dimensions, presented above, operationalized in the six subscales of the instrument. Ryff`s PWBS was developed in a concept/ validity manner, with theoretically defining the six subscales, and items generated for each one (Ryff, 1989). The items were pretested and selected 20 valid items per scale. The validity and reliability of the scale was assessed, obtaining valid coefficients. Also the concurrent validity was assessed in relation with six scales which evaluate psychological dimensions related to well-being. The 3-items per scale (Ryff, Lee, Keyes, 1995) and 9-items per scale were further developed. Currently there are three forms in use: The long form - 14 items per scale, the mid-length form - 9 items per scale and the short form - 3 items per scale. Dr. Ryff recommends the use of the long form of PWBS as it was proved it does a good job of covering the content of the six well-being constructs.

Over 350 research articles using Ryff's PWBS were published in more than 150 scientific journals (Ryff, 2014). Confirmations of the scale validity were presented in studies that used exploratory factor analyses (EFA) and confirmatory factor analyses (CFA). Some studies using EFA revealed that there are more than six factors extracted but others replicated the same factorial structure as the original study (Kállay, Rus, 2014). The studies using CFA determined contradictory findings (Kállay, Rus, 2014).

4. Romanian researches using Ryff's PWBS

Since 2010 Romanian researchers integrated the Ryff`s PWBS in their studies. Only one study (Kállay, Rus, 2014) aimed the Validation of one of the forms of Ryff`s scales, namely the mid-length 44 items scale. The study was conducted on 664 people aged 19 to 65, the maximum likelihood estimation method was used. The results indicated that the correlated six-factor model

presented a relatively good fit to the data and are similar to those provided by other studies that did not empirically provide a total support for the six- factor model of PWB (Kállay, Rus, 2014).

Other study (Negovan, 2010) used Ryff`s PWBS as a scale for measuring concurrent validity with an instrument, that the author developed, for assessment of PWB in students.

Most of the Romanian studies were conducted since 2015 and were using the instrument as a measure of well-being in correlation with other personality traits (Drăgan, 2014; Colomeischi, 2015; Buca, Calin, Mincu, 2016; Petrescu, Bogluţ, Teodor, 2016). Some studies used the instrument in studying therapeutic approaches (Chiriac, 2015; Vasile, 2016).

A few researches were conducted on college students (Chraif, Dumitru, 2015; Chraif, Miulescu, 2015; Petrescu et al., 2016), studying PWB in relation to sport practicing, gender differencing or quality of life. No study used the long-form of Ryff`s PWBS, all these studies used the mid-length form.

We consider that there is a great need of a reliable instrument for assessing students` well-being, adapted and validated on Romanian population. There is a current preoccupation at national level to prevent academic drop-out and one of the most efficient measures is to offer counseling services in universities. Ryff`s PWBS long form can be used in such services to assess and monitor the students well-being and resilience.

By this study we aim to assess the initial psychometric characteristics of long form of Ryff`s PWBS in order to better adapt the scale on Romanian population and to prepare it for the next step, the factor analysis.

5. Research methodology

Our *aim* is to adapt and validate the Ryff`s Scales of Psychological Well-Being long-form, (84 items) on Romanian students' population.

The research objectives are:

- To translate and adapt the Ryff`s PWBS long form on Romanian student population.

- To assess the psychometric characteristics of the scale.

- To validate it for research and counselling use.

Participants

Data were collected from a convenience sample made up of 90 college students enrolled in Educational Sciences studies in West University of Timisoara, bachelor (95.6%) and master (4.4%) degree. The bachelor students are enrolled in three specializations: Special Education (66.7%), Pedagogy (6.7%) and Primary and Preschool Education (22.2%). The age of participants ranged from 18 to 43 years (*M*=21.43, *SD*=4.31). Participants were 1 (1.1%) men and 89 women (98.9%). The participants were enrolled in first year of studies (62 - 68.9%), second year (16 - 17.8%) and 12 (13.3%) in the third. In terms of residence, 22 participants (24.4%) live in rural areas and 68 (75.6%) in urban environment. As living status, 56 (62.2%) live in rent, 22 (24.4%) live in campus, 7 (7.8%) with parents and 5 (5.6%) own a personal apartment. 58 (64.4%) students have a monthly budget lower than 1000 RON (225 EUR), 29 students (32.2%) have a monthly budget between 1000-2000 RON (225-450 EUR), and 3 (3.3%) bigger that 2000 RON (450 EUR).

Instruments

All participants completed on-line 3 instruments: Ryff`s PWBS long-form (84 items), Warwick- Edinburgh Mental Well-Being (WEMWBS) Scale (14 items) and Counseling Center Assessment of Psychological Symptoms CCAPS 34 (34 items). Before completing the questionnaires, the participants were informed about the aim and research objectives, the research team and the confidentiality conditions. At the beginning of the questionnaire the participants answered a socio-demographic questionnaire relating to individual characteristics: age, gender, specialization, academic year, residence, living status and monthly budget.

The main instrument which we aim to adapt and validate, is the Ryff`s PWBS, long-form (84 items). The scale is a theoretically grounded instrument that specifically focuses on measuring multiple facets of psychological well-being. There are 6 subscales (14 items per scale): autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. Items from separate scales are mixed and participants respond on a 6-point item Likert scale from 1- strongly disagree to 6- strongly agree. The scale manual provided descriptions on meanings for high and low scores on each subscale. The high scores are

associated with good well-being on each of the six well-being facets.

For assessing concurrent validity, we administrated other two instruments related to well-being: WEMWBS and CAPPS 34.

WEMWBS is an instrument design to measure subjective well-being on adults over 16 years old. Mental well-being was defined by developers in relation to psychological functioning, life-satisfaction and ability to maintain mutually benefiting relationships (https://warwick.ac.uk/fac/med/research/platform/wemwbs/). The scale consists from 14 items, rated on a 5-point item Likert Scalev, where 1 represents none of the time and 5 all of the time. The WEMWBS is freely for use and can be downloaded from the developers` site.

CCAPS-34 is a 34-item instrument with seven subscales related to psychological symptoms or distress in college students and also includes the Distress Index. The seven subscales are: Depression, Generalized Anxiety, Social Anxiety, Academic Distress, Eating Concerns, Hostility, and Alcohol Use. The answers are rated on a 5-point Likert scale, where 0 represents not at all like me and 4 – extremely like me.

Procedure

The acceptance of using, adapting and validating the long form scale, for research and use, was obtained from the author. The Romanian translation was provided by the author, being made by Jenő-László Vargha and Corina Benea. All participants voluntarily participate in the research. All the students enrolled in Educational Sciences studies in West University of Timisoara received an e-mail presenting the study and the invitation to participate. In the beginning, after presenting the study and the research team, they were informed of the confidentiality and deontological conditions and briefed that by completing the questionnaire they give their consent to participate. From the total of 556 students, 90 choose to complete the questionnaire.

Statistical analysis was undertaken using SPPS v19 software (IBMSPSS, Chicago, IL). To test the psychometric proprieties of Riff's PWBS long-form, a reliability analysis per subscale and per item, split half and correlation with other well-being scales were conducted.

6. Results

First preliminary results (Table 1) were assessed: minimum, maximum, mean and standard deviation.

Table no. 1. *Descriptive statistics for Riff's scale and subscales*

Subscales	Minimum	Maximum	Mean	Std. Deviation
Ryff's score	2.93	5.55	4.59	.62
Autonomy	3.00	5.50	4.24	.86
Environmental mastery	1.86	5.71	4.41	.82
Personal growth	3.43	5.93	4.98	.60
Positive relations	2.64	6.00	4.69	.71
Purpose in life	2.38	5.85	4.56	.65
Self-acceptance	2.79	5.71	4.61	.74
Valid N (listwise)				

We can observe that similar means per subscales with the entire scale were obtained, showing a good consistency. Also, the standard deviations revealed a relatively homogenous distribution of the results.

Afterwards, a reliability analysis for the entire scale (Table no. 2) was conducted.

Table no. 2. *Reliability analysis for the Riff's PWBS long-form*

Cronbach's Alpha	N of Items
.96	84

.96 Cronbach`s Alpha indicates a very good reliability of the scale.

We can observe that Cronbach`s Alpha for all six subscales are very good, indicating a reliable validity for all the subscales. In the case of two subscales (autonomy and Environmental mastery) we obtained better coefficients than that reported by the developers. All the

The next step was to calculate the reliability coefficient per subscale (Table no. 3).

Table no. 3. *Reliability analysis per subscales*

Subscales	Cronbach's Alpha	Developers` Reported Cronbach's Alpha
Autonomy	.87	.83
Environmental mastery	.91	.86
Personal Growth	.84	.85
Positive relations scale	.86	.88
Purpose in live scale	.83	.88
Self acceptance scale	.87	.91

subscales present reliability coefficients similar with those reported by the developers.

Next, we conducted a reliability analysis per item (Table no. 4) in order to determine which items must be reformulated to obtain a better adaptation and reliability

Table no. 4. *Reliability analysis per items*

Subscale	Cronbach's if Item Deleted	English item	Current translated item	New proposed form
Autonomy	.89	My decisions are not usually influenced by what everyone else is doing.	De obicei deciziile mele nu sunt influenţate de ceea ce fac toţi ceilalţi.	De obicei nu iau decizile în funcţie de ceea ce face majoritatea celor din jurul meu.
Personal Growth	.87	There is truth to the saying you can't teach an old dog new tricks.	Este adevărat ce se spune că nu poţi învăţa un câine bătrân figuri noi.	Este adevărat că la bătrâneţe poţi învăţa mai greu lucruri noi.
Purpose in live scale	.87	I live life one day at a time and don't really think about the future.	Trăiesc clipa şi nu mă gândesc la viitor.	Trăiesc în present şi nu mă gândesc prea mult la viitor.
Self acceptance scale	.89	I made some mistakes in the past, but I feel that all in all everything has worked	Am făcut câteva greşeli în trecut dar simt că în cele din urmă totul a fost spre bine.	Am făcut câteva greşeli în trecut dar cred că ele m-au ajutat să evoluez spre bine.

We conducted the reliability analysis per item only to the four subscales where we obtained Cronbach`s Alpha coefficients lower than those reported by the developers.

We identified the items that mostly affected the subscale Cronbach`s Alpha and reformulated them in Romanian.

Also, a reliability split analysis was conducted (Table no. 5). With a mean score of 2.07, the generalized anxiety symptoms of our sample are similar with those reported for general population

Reliability Statistics			
Cronbach's Alpha	Part 1	Value	.93
		N of Items	47[a]
	Part 2	Value	.92
		N of Items	47[b]
		Total N of Items	94
Correlation Between Forms			.89
Spearman-Brown Coefficient	Equal Length		.94
	Unequal Length		.94
Guttman Split-Half Coefficient			.94

The results indicate a very good split-half reliability (Spearman-Brown Coefficient .94 and Guttman Split-Half Coefficient .94) and also a good correlation between forms (.89). The findings substantiate a very good split-half reliability for the adapted form.

Finally, we calculated the correlations of Riff's PWBS long-form with 2 scales (Table 6) relevant for the well/being construct: WEMWBS and CCAPS-34.

		CCAPS-34	*WEMWBS*
Autonomy	Pearson Correlation	-.43[*]	.54[**]
	Sig. (2-tailed)	.00	.00
Environmental mastery	Pearson Correlation	-.81[**]	.80[**]
	Sig. (2-tailed)	.00	.00
Personal growth	Pearson Correlation	-.58[**]	.60[**]
	Sig. (2-tailed)	.00	.00

Positive relations	Pearson Correlation	-.57[**]	.66[**]
	Sig. (2-tailed)	.00	.00
Purpose in life	Pearson Correlation	-.72[**]	.67[**]
	Sig. (2-tailed)	.00	.00
Self acceptance	Pearson Correlation	-.78[**]	.73[**]
	Sig. (2-tailed)	.00	.00

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

All the correlations obtained are significant at 0.01 level. All the six Riff's PWBS subscales have positively correlated with the general score of WEMWBS. All the six Ryff's PWBS subscales have negatively correlated with the general score of CCAPS-34 – the higher the well-being is, the lower the symptoms of mental distress.

7. Conclusions

The purpose of this research was to adapt and measure the psychometric proprieties of Riff's PWBS, long-form. The motivation for this intercession is to further validate the scale for research and use it on the Romanian student population. The higher education institutions strive to offer more than professional development for their students, and to include more and more the personal dimension of development: fostering resilience and well-being. The high drop-out rates at academic level have determined the development and implementation of counseling programs and services that aim to assist student beyond learning, to their personal development. These services need valid instruments to measure the well-being, resilience and mental health and to monitor students' progress in counseling. Also such an instrument facilitates the cross-cultural comparison of students' well-being.

We obtained from the test developers the agreement to use the test for research and counseling purposes. The Romanian translation of the scales was realised by Jenő-László Vargha and Corina Benea and was provided by the authors. But because they were not involved with creating the translations, they cannot vouch for their quality. We test via gforms questionnaire 90 students from the Educational Sciences Department.

The results indicate a very good reliability score per test and per each subscale, for two of the subscale alpha Cronbach was even better than the developers` reported one. For the subscales where we obtain a lower alpha Cronbach, we conducted a reliability analysis per items, reformulating the items with the lowest alpha Cronbach, to raise the reliability per subscale.

Also, the split-half reliability was measured, obtaining very good coefficients.

The concurrent validity was assessed by correlating Ryff`s PWBS long form subscales with other two tests related to well-being: WEMWBS and CAPPS 34. The obtained coefficients indicate a very good positive correlation with WEMWBS (well-being) and a negative correlation with symptoms of mental distress, assessed by CAPPS 34.

In the end, we can conclude that the initial validation coefficients are encouraging for good scale validity and we can take the next research step, increasing the number of participants and conducting the factorial analysis.

Authors note:

Anca Luştrea is Associate Professor, a principal supervisor psychologist in Special Education since 2013, she has a rich experience in the theory and practice of special and inclusive education, mainly in special didactics. Key areas of interests include Special Didactics, Educational Inclusion, Case management in Special Education and Psychology of deaf children.

Loredana Al Ghazi is Assistant Professor, she has a Ph.D. in Psychology and is a principal supervisor psychologist in Special Education. Assistant Professor Loredana Al Ghazi is the director of the University Clinic for Therapies and Psycho-pedagogic Counseling of the West University of Timişoara. Her key areas of interest include Developmental psychology, Counseling and Positive psychology.

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