

Spanish Validation of the Recovery Assessment Scale (RAS-24)

Javier Saavedra¹, Antonio J. Vázquez-Morejón^{1,2}, Raquel Vázquez-Morejón¹, Samuel Arias-Sánchez¹, Sergio González-Álvarez³, and Patrick Corrigan⁴

¹ Universidad de Sevilla, ² Unidad de Salud Mental Comunitaria Guadalquivir, Hospital Universitario Virgen del Rocío (Sevilla),

³ Fundación Pública Andaluza para la Integración Social de Personas con Enfermedad Mental (Sevilla),

⁴ Illinois Institute of Technology (USA)

Abstract

Background: Recovery is an essential construct in healthcare treatment for patients diagnosed with severe mental illnesses (SMI). Of all the psychometric instruments available for measuring recovery, the 41-item Recovery Assessment Scale (RAS) is the most widely used. Several brief versions have been proposed, including the 24-item version. In this study, the RAS-24 was adapted to European Spanish and validated in a clinical sample. **Method:** Participants ($N = 309$) diagnosed with SMI were recruited from a community mental health center and a work guidance center. The participants completed the RAS-24 and the Social Functioning Scale (SFS), both self-reported and family-reported versions. **Results:** The results showed good indices of fit for the original five-factor structure, acceptable internal consistency ($\alpha = .93$; $\omega = .95$), temporal reliability ($ICC = .89$, $p < .01$), and significant correlation with most of the SFS scales (total SFS self-report $r = .50$, $p < .01$; total SFS family reported $r = .49$, $p < .01$). **Conclusions:** These data support the use of this Spanish version as a measure of recovery in the Spanish clinical population.

Keywords: Recovery; assessment; RAS-24; severe mental illness; psychometric characteristics.

Resumen

Validación Española de la Recovery Assessment Scale (RAS-24). **Antecedentes:** la recuperación es un constructo fundamental en la atención sanitaria de los pacientes diagnosticados de trastornos mentales graves (TMG). De todos los instrumentos psicométricos disponibles, la Recovery Assessment Scale (Escala de Evaluación de la Recuperación, RAS) de 41 ítems es el más utilizado. Se han propuesto varias versiones breves, entre ellas la versión de 24 ítems. En este estudio, el RAS-24 se adaptó al español europeo y se validó en una muestra clínica. **Método:** los participantes ($N=309$), diagnosticados con TMG, fueron reclutados en un centro comunitario de salud mental y un centro de orientación laboral. Todos cumplimentaron el RAS-24 y la Escala de Funcionamiento Social (SFS) en ambas versiones, autoinformada y heteroinformada. **Resultados:** los resultados mostraron buenos índices de ajuste para la estructura original de cinco factores, consistencia interna aceptable ($\alpha = .93$; $\omega = .95$), fiabilidad temporal ($ICC = .89$, $p < .01$) y correlación significativa con la mayoría de las escalas SFS (total SFS autoevaluado $r = .50$, $p < .01$; total SFS heteroevaluado $r = .49$, $p < .01$). **Conclusiones:** estos datos apoyan el uso de esta versión en español como medida de recuperación en población clínica española.

Palabras clave: recuperación; evaluación; RAS-24; trastorno mental grave; características psicométricas.

Recovery beyond symptom remission has become the goal of most healthcare systems, especially with regard to patients diagnosed with severe mental illnesses (SMI) (Department of Health, 2011; Slade et al., 2012). It is a complex construct which includes several components for which different conceptual frameworks have been proposed (Corrigan et al., 1999; Leamy et al., 2011; Slade, 2009).

According to the classic definition by Anthony (1993), recovery is a single process requiring the reconstruction of identity for the goal of developing, in spite of the disease, new meanings and purposes to achieve a full life. In this sense, despite the traditional

negative psychiatric view, it has been confirmed that people diagnosed with SMI retain their capacity to coherently narrate their needs, desires and expectations (Saavedra et al., 2009). This has led to their voices being considered a source of knowledge and the recovery model being essential for organizing services and defining professional practice. Keeping in mind the relevance of the voices of patients in the definition of their recovery, and paraphrasing Robert McNamara (cited by Slade & Longden, 2015), the challenge is to be able to measure what is important, not to make what is measurable important.

Evaluation of personal recovery in the scope of mental health is challenging because the construct spans subjective factors that have usually been ignored in the health sciences, such as hope and meaning, which necessarily requires considering elaboration of the identity of the person diagnosed with SMI (Slade & Longden, 2015). Therefore, although variables such as clinical symptomatology, general wellbeing or social functioning can be used as partial indicators, they do not span the complexity of the

recovery construct. As recovery is an essential objective of mental health intervention, it is fundamental to have adequate instruments for its measurement.

Although there is no recognized gold standard, the Recovery Assessment Scale (RAS), originally comprised of 41 items (Corrigan et al., 1999; Giffort et al., 1995), is the most widely used instrument, with over 200 publications already in 2012, 77 of them on its psychometric data (Salzer & Brusilovskiy, 2014). In factor analysis, five factors have been identified: “personal confidence and hope, willingness to ask for help, goal and success orientation, reliance on others and no domination by symptoms” (Corrigan, et al., 2004; McNaught et al., 2007). The first factor, “personal confidence and hope”, combines items related to hope for the future and capacity for stress management. The second factor, “willingness to ask for help”, confirms affirmations related to the disposition to seek help. The third, “goal and success orientation”, evaluate the desire for success and the ability to meet goals. The fourth focuses on relationships with significant others on the way to recovery, “reliance on others.” Finally, the fifth factor, “no domination by symptoms”, includes items that evaluate whether psychiatric symptoms are not the center of the patient’s life. The reliability and validity of this model has been confirmed in very diverse studies (Leamy et al., 2011; Salzer & Brusilovskiy, 2014).

In a systematic review of instruments for measuring recovery, Sklar et al. (2015) considered the 41-item RAS the most psychometrically robust instrument of a total of 13 scales and inventories analyzed. However, these same authors warned that of the three best instruments, the RAS was the one that took the longest to complete. The need for efficiently including the evaluation of recovery in routine clinical practice motivated the development of shorter versions of this instrument. Corrigan et al. (2004), with a sample of almost 2000 participants and using exploratory (EFA) and confirmatory factor analysis (CFA), found a 24-item version which retained the original five-factor structure.

Its psychometric characteristics have been studied in other countries, such as the one done in Norway (Biringer & Tjoflat, 2018), in which, with a 24-item version, the original five-factor structure was confirmed, as well as its adequate convergent validity. The Japanese (Chiba et al., 2010) and Australian (McNaught et al., 2007) versions also had a five-factor structure with good internal consistency. The recent adaptation to German using CFA of the RAS-24 led to a 14-item instrument, also with a five-factor structure (Cavelti et al., 2017). The Spanish adaptation of the RAS-24 for Latin America recently produced a 21-item scale with a five-factor structure, adequate psychometric properties and fit indices (Zalazar et al., 2017).

A few adaptations have found other factor structures. The Brief 20-item RAS in Hebrew found results that confirmed adequate psychometric characteristics (Roe et al., 2012). However, CFA identified four factors with only 14 of the 20 original items. The factor that was eliminated from the original five was “goal and success orientation”. The Portuguese version of the RAS-24 also had a four-factor structure with 22 items, although with poor fit indices (Jorge-Monteiro & Ornelas, 2016).

Taking into account all these results, Cavelti et al., (2017) stated that the recovery conceptualization and factor structures from the different versions of the RAS did not vary much between countries.

As far as we know, although there is a Spanish adaptation for Latin America, as mentioned above, there is no adaptation of the

RAS-24 for Spain, which is an important deficit for including this useful and efficient recovery evaluation instrument in clinical practice. Its adaptation to the Spanish language in a European context and its validation in a clinical sample was undertaken to cover this deficit.

Method

Participants

The scale was applied to 350 patients, 170 men (55.7%) and 135 women (44.3%) with a mean age of 41.65 years ($SD= 12.05$, range 18-71), all of them cared for in a community mental health unit or users of a job orientation and inclusion service for persons with SMI. Table 1 presents their sociodemographic characteristics. Participants were diagnosed by clinicians of public health systems. Their clinical characteristics were: 65% diagnosed with schizophrenia spectrum disorder, 18.07% diagnosed with bipolar disorder, 11.15% in the category of personality disorder, and 5.77% of the sample was diagnosed with delusional disorder.

All of the participants were informed of the objective of the study, of the legislation on data protection and the voluntary nature of their participation, in compliance with the pertinent legal requirements of Law 14/2007 on Biomedical Research and the Helsinki Declaration (Fortaleza, Brazil, October 2013). This research project was previously approved by the Andalusian Biomedical Research Ethics Portal (Code: 0339-N-17).

Instruments

Recovery Assessment Scale (RAS-24; Corrigan et al., 2004). This scale measures recovery in patients diagnosed with mental disorders. The 24-item version was constructed from the original 41-items (Giffort et al., 1995) and is distributed in five factors: “Personal confidence and hope” (nine items), “willingness to

Table 1
Sociodemographic information (N=305)

Variables	N	%
Mental health services		
Community mental health unit	164	53.7
Employment Assistance Services	141	46.3
Marital status		
Single	224	73.4
Married	28	9.2
Separated/Divorced	31	10.1
With stable partner	16	5.2
Widowed	2	0.7
Other	4	1.4
Educative level		
Primary school incomplete	11	3.6
Primary school	41	13.4
Secondary school certificate/ Professional training	166	54.5
University	84	27.5
Other	3	1
Employment situation		
Employed	25	8.2
Unemployed	196	64.3
Other	84	27.5

ask for help” (three items), “goal and success orientation” (five items), “reliance on others”, (four items), and “no domination by symptoms” (three items). Each item is rated on a five-point Likert-type scale from 1 “Strongly disagree” to 5 “Strongly agree”. The sum of the items corresponding to each of the subscales provides the score on each of them, while the sum of the 24 items is the total scale score. The fit indices for the five factors on the original English scale were adequate. The factor loadings of the items were always over 0.4 and up to 0.8 on two items in the second factor (Corrigan et al., 2004).

Social Functioning Scale (SFS; Birchwood et al., 1990). This scale was designed to evaluate the areas of social functioning most specific and crucial to performance in the community of patients with schizophrenia. It evaluates functioning in seven specific areas: social engagement/withdrawal, interpersonal behavior, prosocial activities, recreation, independence-performance, autonomy-competence, employment/occupation. Based on this evaluation, a global score on social functioning and seven scores, one for each area, are found, where higher scores show higher levels of social functioning. The scale can be applied in two versions according to the information source: the other-report version from data provided by key informants, normally family members, and the self-report, based on the patient’s answers. The adequate psychometric characteristics of the scale have been confirmed in the original English version (Birchwood et al., 1990) as well as the Spanish version (Vázquez-Morejón & Jiménez-García-Bóveda, 2000) that was used in this study.

Procedure

The English version of the RAS-24 was translated into Spanish and back-translated into English by two different people working independently. The first, a bilingual (Spanish and English) researcher, and the second, a native US student in the last year of Psychology. The original version was translated into Spanish by the first researcher, and this Spanish version was then translated back into English by the native English speaker. The research team analyzed the final translation to resolve any discrepancies from the original. Following the recommendations of Hernández et al. (2020), when supervising the translation and back-translation process, this team of experts also considered the cultural, linguistic, and psychological differences between both populations. The definitive version of the instrument was tested in a pilot application to two people diagnosed with SMI who were users of the FAISEM (Public Andalusian Foundation for Social Integration of the Mentally Ill) employment program, who helped clarify some concepts that might seem ambiguous to the participants.

The recruitment procedure followed differed for participants cared for in the community mental health unit and those who were users of an integration and occupational training program. In the first case, the procedure included the RAS-24 in the battery of routine evaluation instruments, which also included the SFS self-report and other-report, in the first interviews and review evaluations of patients diagnosed with schizophrenia and related disorders. A group of 35 patients selected at random was asked to fill out the scale again three-to-four weeks later to evaluate the temporal reliability of the scale. The participants were recruited in 2017 and 2018.

In the case of the participants included in the employment reinsertion programs, the staff of the orientation and job support

services were told to give the questionnaires (SFS self-report version and RAS-24) to all those with SMI who came to the service and volunteered to take it. Participants in the FAISEM trainee program were also recruited. The staff assigned to this project were told to select as many participants in it as possible, administering the questionnaires at the beginning of training (in the first week before starting or in the first week of training). The information was collected from this group from June 2019 to June 2020. When the scales had been completed and the sociodemographic data collected, the information was digitized, and statistical analysis was performed using SPSS v21 and MPLUS 8.

Data Analysis

First, the descriptive statistics were calculated for each of the 24 items on the RAS-24, as well as the dimensions and total scale score.

The scale’s factor structure was analyzed using CFA with the MPLUS 8 program. Missing data were computed by Full Information Maximum Likelihood (FIML). As there was no severe violation of normality and following the recommendations of Curran et al. (1996), the MLR estimation method was used to compute the model fit indices based on chi-square (X^2), the normed X^2 , the root mean squared error of approximation (RMSEA), the standardized root mean squared residual (SRMR) and the comparative fit index (CFI). The normed X^2 was also calculated as it is less sensitive to sample size than the X^2 . The cutoff points were < 5.0 for normed X^2 , $< .08$ for the RMSEA and SRMR (Browne & Cudeck, 1992), and $> .90$ for the CFI (Bollen, 1989).

Internal consistency was explored using the Omega coefficient, both for the dimensions and for the complete scale. The Cronbach’s alpha was also calculated to facilitate comparison with other studies which used that coefficient. The correlations between factors and between factors and the total score was analyzed by Pearson’s rank correlation coefficient. Concurrent validity of the RAS-24 was explored based on its correlation with the total SFS (self-report and other-report) score and its dimensions. Temporal reliability of the RAS-24 was found using intraclass correlation.

Results

Descriptive Statistics

The descriptive data for each of the items, dimensions and total RAS-24 score are presented in Table 2. A higher score on the scale was interpreted as better patient recovery. The mean score varied from 3.16 on Item 7 and 4.14 on Item 19. Factor results showed a mean score of 32.42 for the first factor, “personal confidence and hope”. The second, “willingness to ask for help”, was 12.00, and the third factor, called “goal and success orientation”, was 18.99. “Reliance on others” was 15.90, and the “no domination by symptoms” factor had a mean score of 10.50. Showing middle-to-high recovery, the score for the total scale was 89.83. The highest possible scores on the “personal confidence and hope”, “willingness to ask for help”, “goal and success orientation”, “reliance on others”, and “no domination by symptoms” factors and total scale were obtained by 4.7%, 26.6%, 13.2%, 14.7%, 11.0% and 1.0% of the participants, respectively. On the contrary, 0.3%, 2.4%, 1.0%, 1.3%, 2.3%, and 0.3% of the participants, respectively, scored the minimum possible. Although the distribution of the data showed

a certain tendency to a higher concentration of higher scores, the analyses demonstrated that they were distributed throughout the range of scores of the different items and subscales.

Confirmatory Factor Analysis

The results showed that the distribution of the variables was not normal (Mardia skewness = 6513.73, $p < .01$ and Mardia kurtosis = 49.93, $p < .01$). However, although the distribution was not normal, the skewness and kurtosis indices were below 2 in absolute values.

The factor solution of the original model [$X^2(242) = 479.828$, $p < .01$; Normed $X^2 = 1.98$; RMSEA = .057; SRMR = .055; CFI = .904] fit well according to the recommended cutoff points. Table 3 presents the fit indexes obtained in this validation compared to other adaptations of this scale in five different countries.

These results supported the five-factor structure from the original RAS-24. All the items showed standardized factor loadings from .247 to .888 as observed in Figure 1. The parameter estimates with standard errors from the CFA are presented in Table 4.

Internal Consistency

Internal consistency was measured with the Cronbach’s alpha and the Omega coefficient. The latter, unlike the more traditional Cronbach’s alpha, works with factor loadings, is more appropriate for psychometric validations and offers more stable calculations.

The internal consistency of the total scale, measured with the Cronbach’s alpha, was .93. The Omega coefficient was .95. The Cronbach’s alpha and the Omega coefficient for the instrument’s dimensions are shown in Table 4.

Between-Factor Correlations

The correlation of each of the factors with the total score varied from .70 on “reliance on others” and .93 on “personal confidence and hope”. Significant between-factor correlations (Table 5), mostly moderate, varied from .33 (“reliance on others”, and “no

Table 2
Descriptive statistics of the RAS-R items, subscales and total (N=305)

Item n° RAS-R	Range	Mean	SD	Skewness	Kurtosis
1	1-5	3.86	1.22	-1.09	0.28
2	1-5	3.65	1.18	-0.69	-0.33
3	1-5	4.02	1.14	-1.26	0.89
4	1-5	3.54	1.18	-0.60	-0.39
5	1-5	3.94	1.14	-1.14	0.62
6	1-5	3.76	1.23	-.098	-0.01
7	1-5	3.16	1.42	-0.25	-1.27
8	1-5	3.40	1.19	-0.32	-0.69
9	1-5	3.49	1.27	-0.53	-0.77
10	1-5	3.82	1.08	-0.81	0.20
11	1-5	3.76	1.13	-0.80	0.05
12	1-5	3.87	1.02	-0.74	0.23
13	1-5	3.91	1.07	-0.94	0.39
14	1-5	3.78	1.14	-0.93	0.20
15	1-5	3.47	1.33	-0.56	-0.81
16	1-5	3.50	1.25	-0.56	-0.65
17	1-5	3.54	1.27	-0.64	-0.61
18	1-5	3.88	1.07	-1.06	0.72
19	1-5	4.14	0.99	-1.50	2.21
20	1-5	3.98	1.06	-1.19	1.03
21	1-5	3.23	1.22	-0.25	-0.78
22	1-5	4.12	0.99	-1.49	2.14
23	1-5	3.89	1.08	-1.00	0.54
24	1-5	4.13	1.01	-1.48	2.09
PCH	11-45	32.42	7.17	-0.31	-0.20
WAH	3-15	12.00	2.78	-1.16	1.46
GSO	5-25	18.99	4.46	-0.80	0.61
RO	4-20	15.90	3.24	-1.06	1.68
NDS	3-15	10.50	2.99	-0.43	-0.31
Total	36-120	89.83	16.80	-0.50	0.36

PCH: Personal confidence and hope; WAH: Willingness to ask for help; GSO: Goal and success orientation; RO: Reliance on others; NDS: No domination by symptoms

Table 3
Fit indices of Spanish validation and other adaptations

	Spanish Validation	Corrigan (2004) Original	Cavelti et al., (2017) Germany	McNaught et al., (2007) Australia	Biringer & Tjøflåt, (2018) Norway	Zalazar et al., (2017) Argentina	Jorge-Monteiro, et al., (2015) Portugal
N	305	1824	156	168	231	337	213
Items	24	24	14	24		21	22
Number of factors	5	5	5	5	5	5	4
Cronbach’s alpha	F1 .85 F2 .87 F3 .82 F4 .67 F5 .74 Total .93	.87 .84 .82 .74 .74	.79 .65 .88 .60 .60	>.70	.83 .85 .77 .65 .76 .90	.75 .82 .88 .66 .76 .88	.88 .77 .75 .78 .90
RMSEA	.057		.059	.060	.046	.066	.068
SRMR	.055						
CFI	.904	.93	.950	.087	.924	.905	.881
TLI	.890			.900	.913		.865

Table 4

Standardized factor loadings (β), communalities, unstandardized factor loadings (B) with standard errors (SE), and Cronbach's alpha and Omega coefficient

No domination by symptoms factor		Cronbach's alpha = .67	Omega Coefficient =.68	
Item	β	Communality	B	SE
15	0.68	0.47	1.00	0.00
16	0.79	0.63	1.09	0.11
17	0.44	0.20	0.62	0.10
Reliance on others factor		$\alpha=.74$	$\omega=.76$	
Item	β	Communality	B	SE
6	0.59	0.35	1.00	0.00
22	0.85	0.72	1.14	0.12
23	0.76	0.58	1.12	0.13
24	0.45	0.21	0.63	0.14
Goal and success orientation factor		$\alpha=.82$	$\omega=.82$	
Item	β	Communality	B	SE
1	0.52	0.27	1.00	0.00
2	0.65	0.42	1.21	0.17
3	0.75	0.56	1.34	0.17
4	0.75	0.56	1.40	0.20
5	0.79	0.62	1.40	0.20
Willingness to ask for help factor		$\alpha=.87$	$\omega=.87$	
Item	β	Communality	B	SE
18	0.75	0.56	1.00	0.00
19	0.86	0.74	1.07	0.10
20	0.89	0.79	1.18	0.10
Personal confidence and hope factor		$\alpha=.85$	$\omega=.87$	
Item	β	Communality	B	SE
7	0.25	0.06	1.00	0.00
8	0.65	0.42	2.19	0.63
9	0.71	0.50	2.56	0.73
10	0.61	0.37	1.87	0.56
11	0.67	0.45	2.17	0.66
12	0.76	0.57	2.20	0.66
13	0.82	0.68	2.48	0.74
14	0.76	0.58	2.46	0.74
21	0.57	0.33	1.98	0.57

domination by symptoms”) and .74 (“personal confidence and hope” and “goal and success orientation”).

Concurrent Validity

The overall scores on the RAS-24 and on each of its factors showed significant relationships with most of the scores on the SFS, both on the self-report version and the one reported by family members (Table 6). This relationship was particularly intense in the global scores of both versions. However, no significant correlation was observed of the RAS-24 with the score on the employment dimension of either version.

Temporal Reliability

The intraclass correlation of scores on the first and second application of the RAS-24 with an interval of three-to-four weeks showed significant correlations ($p < .01$, bilateral) which were intense for all factors: .89 for RAS 24 Global, .88 for “personal confidence and hope”, .83 for “willingness to ask for help”, .77 for “goal and success orientation”, .80 for “reliance on others”, and .74 for “no domination by symptoms”.

Discussion

In general, the results of this study show adequate psychometric properties of the Spanish adaptation of the RAS-24 in a clinical population diagnosed with SMI. The mean scores on the dimensions and the global scale of the Spanish validation of the RAS-24 are comparable to the Norwegian (Biringe & Tjoflat, 2018) and German (Cavelti et al., 2017) adaptations. Notable differences were found only in the “goal and success orientation” factor, where this sample, as in the Japanese version (Fukui et al., 2012), had a lower score than the Norwegian and German adaptations.

The asymmetry of the items is always below -1.5 and in the vast majority of cases below -1. This shows a moderate upward bias in the distribution of the data. However, this bias is not specified in a ceiling effect on the factor and total scale scores according to the criterion of over 15% of participants with the maximum score (Terwee et al., 2007). In other words, the concentration of the scores is not extreme in the factors or the total RAS-24 scale, except for the “willingness to ask for help” factor with 23%, since it does not exceed 15% with the highest possible score. In addition, all the categories of the scale are represented in the scores on the items and factors. This concentration of the scores in the upper range of the scale suggests that a possible ceiling effect should be explored in other samples.

All the participants in this study were patients in a mental health unit under professional care and supervision of pharmacological treatment, and in addition, most were in training, job orientation, and employment programs. Considering these particularities of the sample, most scores would be expected to be above average, as in fact has been demonstrated in other studies with similar populations (Biringe & Tjoflat, 2018; Cavelti et al., 2017; Jorge-Monteiro et al., 2016).

The fit indices and parameters of the five-factor model of the Spanish validation of the RAS-24 estimated with CFA equaled or surpassed those shown by other validations (see Table 3). These results support the adequate fit to the five-factor structure found in the original US version (Corrigan et al., 2004). Although the majority of studies opt for the five-factor structure as proposed by the scale’s designers, some have proposed four factors. This option is based on the important overlap between the personal confidence and hope and goal and success orientation factors. In fact, although the correlations observed between the subscales in the Spanish validation are, in all cases, below the recommended criterion of .80 (Kline, 2005), the correlation between the two factors mentioned in this study and in others such as the one done in Norway (Biringe & Tjoflat, 2018), are near 0.80. In spite of this high correlation, as it is backed by a robust theoretical model, the five-factor structure is the one most supported by the various validations, and as the indices of fit found were over the criteria established in the literature, it was decided to confirm it in this Spanish adaptation. Furthermore,

Fukui et al. (2012), in the only study in which RAS-24 invariance was analyzed between two cultures, the USA and Japan, concluded that in spite of the cultural differences, the five-factor structure was

stable in both, and showed acceptable fit indices similar to the one in this study. Although it is not discarded that there may be items with culturally biased response patterns in this validation, the

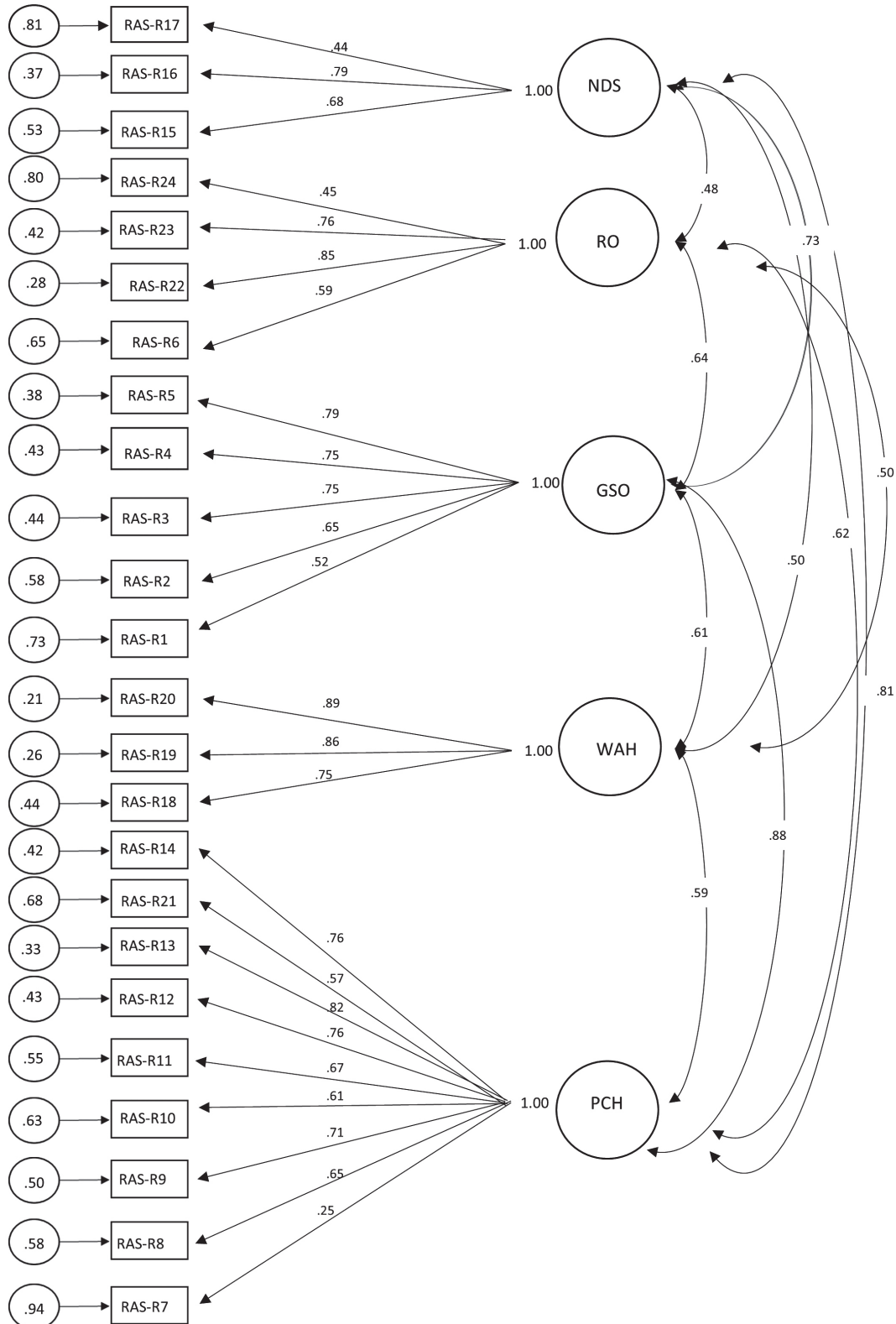


Figure 1. Final Confirmatory Factor Analysis model

results with the Spanish sample are similar to those corresponding to Western societies.

The scale's internal consistency was very similar to the Norwegian adaptation (Biringe & Tjøflet, 2018) in each of the dimensions. In this study, the Cronbach's alpha varied from .67 to .87, similar to the .65 to .85 for the Norwegian version. It was also observed that the dimension with the least consistency was the same factor in both versions, "no domination by symptoms", with a Cronbach's alpha of .67 in this version and .65 in the one done in Norway.

The correlation of the Spanish validation with other instruments that measure constructs compatible with recovery is adequate. That is, it shows a significant association, but independent of each other. For example, the RAS-24 showed a strong association with social functioning, both in the self-report version and in the other-report, but below .60. Other studies have found associations with general wellbeing, social functioning, empowerment and self-esteem (Cavelti et al., 2017; Corrigan, 2006; Jorge-Monteiro & Ornelas, 2016). Negative correlations have also been found, although not intense, with instruments that evaluate psychiatric symptomatology (Cavelti et al., 2017; McNaught et al., 2007).

Concerning the temporal reliability of the Spanish adaptation, the correlations observed support its reliability, both for each of the

dimensions and the total scale score, more so if the three-to-four-week application interval is taken into consideration.

With respect to the Argentinean adaptation (Zalazar et al., 2017), the numerous cultural differences that are translated into linguistic variations between the Spanish language in Argentina and Spain should be emphasized, so a Spanish adaptation in the European context is necessary.

Five factors were found in both adaptations to Spanish. However, in the Argentinian adaptation, the number of items was reduced to 21. The Argentinian version administered the 41-item version and afterwards selected 24 items for validation. This change in context of completion could affect the results. Furthermore, they did not find any relationship between the RAS-24 and Global Assessment Functioning, which could be explained by the simplicity of that instrument compared to a multidimensional instrument such as the SFS used in this study. Lastly, in the adaptation to Spanish in Argentina, no temporal reliability results were offered. In this sense, the present validation in Spanish, apart from its usefulness, contributes to better understanding of the psychometric properties of this instrument.

It should be underlined that of the validations of the RAS in other languages and except for the study by Fukui et al. (2012) and Zalazar et al. (2017), this is the one with the largest sample (see Table 3). We might also add that those diagnosed with SMI in this study came from two different public mental health services, which contributes to a wider diversity in the data and, therefore, is advisable for validating results. In this respect, we should emphasize that the factorial analyses with samples of fewer than 200 observations are very risky (Hair et al., 2014; Stevens, 2009).

Among the limitations of this study is our sample, which although it is large and diverse, does not represent the whole population of patients diagnosed with SMI. For example, the psychopathological situation of this sample, which is from a community, may be less disabled than other groups of institutionalized patients. In any case, invariance studies of the questionnaire taking this variable and others, such as culture, already discussed, or sex into account are necessary.

Table 5
Pearson correlations between factors and global RAS-24 (N=305)

RAS-R	PCH	WAH	GSO	RO	NDS	Global
PCH	1	.50**	.74**	.52**	.66**	.93**
WAH		1	.53**	.45**	.38**	.67**
GSO			1	.56**	.52**	.88**
RO				1	.33**	.70**
NDS					1	.72**
Global						1

** The correlation is significant at .01 (bilateral)
PCH: Personal confidence and hope; WAH: Willingness to ask for help; GSO: Goal and success orientation; RO: Reliance on others; NDS: No domination by symptoms

Table 6
Correlations between RAS-R subscales and SFS dimensions (N=305)

		PCH	WAH	GSO	RO	NDS	Global
Self-reported SFS	Engagement/social isolation	.40**	.19*	.33**	.24**	.13	.38**
	Interpersonal behavior	.33**	.19*	.45**	.35**	.29**	.43**
	Independence-performance	.25**	.33**	.28**	.12	.26**	.31**
	Recreation	.24**	.11	.30**	.24**	.28**	.30**
	Prosocial activities	.30**	.18*	.30**	.23**	.14	.31**
	Independence-competence	.37**	.36**	.38**	.09	.31**	.40**
	Employment/occupation	.13	.06	.12	.03	.04	.09
	Total Social Functioning	.45**	.25*	.47**	.33**	.30**	.50**
Family reported SFS	Engagement/social isolation	.23	.08	.07	.18	.29*	.22
	Interpersonal behavior	.39*	.23	.20	.32**	.28*	.35**
	Independence-performance	.37**	.10	.33**	.34**	.31**	.40**
	Recreation	.34**	.14	.26*	.33**	.19	.35**
	Prosocial activities	.45**	.20	.36**	.32**	.32**	.45**
	Independence-competence	.42**	.25*	.32**	.34**	.37**	.46**
	Employment/occupation	.00	.07	-.16	.11	.00	-.01
	Total Social Functioning	.47**	.21	.34**	.41**	.36**	.49**

** The correlation is significant at .01 (bilateral)
* The correlation is significant at .05 (bilateral)
PCH: Personal confidence and hope; WAH: Willingness to ask for help; GSO: Goal and success orientation; RO: Reliance on others; NDS: No domination by symptoms

It would be interesting for future studies, with larger and more diverse samples, to analyze using Item Response Theory whether there is a bias in the scores, and if so, whether it is due to the characteristics of the sample or to problems with the scale itself. The objective of this study was to adapt a specific instrument using the same methodology as in other adaptations so the results would be comparable. Therefore, our results did not contemplate any modification of the instrument's structure. However, we cannot assure that future analyses might not suggest a modification of the Likert scale to optimize the questionnaire.

Considering the subjective nature of the recovery construct, the results of the RAS-24 should be compared with qualitative narrative-type analyses. Thus, in addition, the concurrent validity of the construct would be confirmed more emphatically. It should also be warned that, although all the participants had assistance available for filling out the questionnaires, some of them did so alone in the presence of a researcher and others filled out the form in a group, also with a professional present. Therefore, although it was attempted to control data collection as much as possible, we cannot discard the possibility that the different contexts may have somehow influenced questionnaire completion.

In spite of these limitations and after the exhaustive analysis of the different sources of validity of this scale, its adequate psychometric characteristics, including the five-factor structure with 24 items, are adequate with good fit indices. This Spanish version of the RAS-24 is an instrument with a stable factor structure that expresses the essential dimensions of the recovery construct. These data support the use of the RAS-24 as a measure of recovery in this population. Its brevity and simplicity, which make the RAS-24 a very useful instrument in the scope of mental health, should be emphasized. Its practical character and psychometric robustness make it especially relevant for its application in diverse contexts, especially in the clinic. In this adaptation, Spanish researchers and clinicians can find an international-quality tool, which has repeatedly been confirmed for evaluating personal recovery, in their own language.

Acknowledgements

This research was carried out within the framework of the research project funded by the Gobierno de España [PSI2016-80112-P] entitled "Challenges of the self: Identity reconstruction in situations of inequality and social exclusion".

References

- Anthony, W. A. (1993). Recovery from mental illness: The guiding vision of the mental health system in the 1990s. *Psychosocial Rehabilitation Journal*, 16(4), 11-23. <https://doi.org/10.1037/h0095655>
- Birchwood, M., Smith, J. O., Cochrane, R., Wetton, S., & Copstake, S. (1990). The social functioning scale the development and validation of a new scale of social adjustment for use in family intervention programmes with schizophrenic patients. *The British Journal of Psychiatry*, 157(6), 853-859. <https://doi.org/10.1192/bjp.157.6.853>
- Biringer, E., & Tjøflåt, M. (2018). Validation of the 24-item recovery assessment scale-revised (RAS-R) in the Norwegian language and context: A multicenter study. *Health and Quality of Life Outcomes*, 16(23), 1-12. <https://doi.org/10.1186/s12955-018-0849-3>
- Bollen, K. A. (1989). A new incremental fit index for general structural equation models. *Sociological Methods & Research*, 17(3), 303-316. <https://doi.org/10.1177/0049124189017003004>
- Browne, M. W., & Cudeck, R. (1992). Alternative ways of assessing model fit. *Sociological Methods & Research*, 21(2), 230-258. <https://doi.org/10.1177/0049124192021002005>
- Cavelti, M., Wirtz, M., Corrigan, P., & Vauth, R. (2017). Recovery assessment scale: Examining the factor structure of the German version (RAS-G) in people with schizophrenia spectrum disorders. *European Psychiatry*, 41(1), 60-67. <https://doi.org/10.1016/j.eurpsy.2016.10.006>
- Chiba, R., Miyamoto, Y., & Kawakami, N. (2010). Reliability and validity of the Japanese version of the Recovery Assessment Scale (RAS) for people with chronic mental illness: Scale development. *International Journal of Nursing Studies*, 47(3), 314-322. <https://doi.org/10.1016/j.ijnurstu.2009.07.006>
- Corrigan, P. W. (2006). Impact of consumer-operated services on empowerment and recovery of people with psychiatric disabilities. *Psychiatric Services*, 57(10), 1493-1496. <http://dx.doi.org/10.1176/ps.2006.57.10.1493>
- Corrigan, P. W., Giffort, D., Rashid, F., Leary, M., & Okele, I. (1999). Recovery as a psychological construct. *Community Mental Health Journal*, 35, 231-239. <https://doi.org/10.1023/A:1018741302682>
- Corrigan, P. W., Salzer, M., Ralph, R. O., Sangster, Y., & Lorraine, K. (2004). Examining the factor structure of the Recovery Assessment Scale. *Schizophrenia Bulletin*, 30(4), 1035-1041. <https://doi.org/10.1093/oxfordjournals.schbul.a007118>
- Curran, P. J., West, S. G., & Finch, J. F. (1996). The robustness of test statistics to nonnormality and specification error in confirmatory factor analysis. *Psychological Methods*, 1(1), 16-29. <https://doi.org/10.1037/1082-989X.1.1.16>
- Department of Health (2011). *No Health without Mental Health: Delivering Better Mental Health Outcomes for people of All Ages*. Department of Health and Social Care of the United Kingdom. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/215811/dh_124057.pdf
- Fukui, S., Shimizu, Y., & Rapp, C. A. (2012). A cross-cultural study of recovery for people with psychiatric disabilities between US and Japan. *Community Mental Health Journal*, 48(6), 804-812. <https://doi.org/10.1007/s10597-012-9513-2>
- Giffort, D., Schmook, A., Woody, C., Valendorf, C., & Germain, M. (1995). *Construction of a scale to measure consumer recovery*. Illinois Office of Mental Health.
- Hair, J., Black, W., Babin, B., & Anderson, R. (2014). *Multivariate data analysis: Pearson new international edition* (7th ed.). Pearson.
- Hernández, A., Hidalgo, M. D., Hambleton, R. K., & Gómez-Benito, J. (2020). International Test Commission guidelines for test adaptation: A criterion checklist. *Psicothema*, 32(3), 390-398. <https://doi.org/10.7334/psicothema2019.306>
- Jorge-Monteiro, M. F., & Ornelas J. H. (2016). Recovery Assessment Scale: Testing validity with Portuguese community-based mental health organization users. *Psychological Assessment*, 28(3), e1-e11. <https://doi.org/10.1037/pas0000176>
- Kline, R. B. (2005). *Principles and practices of structural equation modeling* (2nd ed.). Guilford Press.
- Leamy, M., Bird, V., Le Boutillier, C., Williams, J., & Slade, M. (2011). Conceptual framework for personal recovery in mental health: Systematic review and narrative synthesis. *British Journal of Psychiatry*, 199(6), 445-452. <https://doi.org/10.1192/bjp.bp.110.083733>
- McNaught, M., Caputi, P., Oades, L. G., & Deanes, F. P. (2007). Testing the validity of the Recovery Assessment Scale using an Australian sample. *Australian and New Zealand Journal of Psychiatry*, 41(5), 450-457. <https://doi.org/10.1080/00048670701264792>
- Roe, D., Maschiach-Eizenberg, M., & Corrigan, P. (2012). Confirmatory factor analysis of the Brief Version of the Recovery Assessment Scale.

- The Journal of Nervous and Mental Disease*, 200(10), 847-851. <https://doi.org/10.1097/nmd.0b013e31826b6d4a>
- Saavedra, J., Cubero, M., & Crawford, P. (2009). Incomprehensibility in the narratives of individuals with a diagnosis of schizophrenia. *Qualitative Health Research*, 19(11), 1548-1558. <https://doi.org/10.1177/1049732309351110>
- Salzer, M. S., & Brusilovskiy, E. (2014). Advancing recovery science: Reliability and validity properties of the Recovery Assessment Scale. *Psychiatric Service*, 65(4), 442-453. <https://doi.org/10.1176/appi.ps.201300089><https://doi.org/10.1176/appi.ps.201300089>
- Sklar, M., Groessl, E. J., O'Connell, M., Davidson, L., & Aarons, A. (2015). Instruments for measuring mental health recovery: A systematic review. *Clinical Psychology Review*, 33(8), 1082-1095. <https://doi.org/10.1016/j.cpr.2013.08.002>
- Slade, M. (2009). *Personal recovery and mental illness. A guide for mental health Professionals*. Cambridge University Press.
- Slade, M., Adams, N., & O'Hagan, M. (2012). Recovery: Past progress and future challenge. *International Review of Psychiatry*, 24(1), 1-4. <https://doi.org/10.3109/09540261.2011.644847>
- Slade, M., & Longden, E. (2015). Empirical evidence about recovery and mental health. *BMC Psychiatry*, 15(285), 1-14. <https://doi.org/10.1186/s12888-015-0678-4>
- Stevens, J. (2009). *Applied multivariate statistics for the social sciences* (5th ed.). Routledge.
- Terwee, C. B., Bot, S. D. M., de Boer, M. R., van der Windt, A. W. M., Knol, D. L., Bouter, L. M., & de Vet, H. C. W. (2007). Quality criteria were proposed for measurement properties of health status questionnaires. *Journal Clinical Epidemiology*, 60(1), 34-42. <https://doi.org/10.1016/j.jclinepi.2006.03.012>
- Vázquez-Morejón, A. J., & Jiménez-García-Bóveda, R. (2000). Social Functioning Scale: New contribution concerning its psychometric characteristics in a Spanish adaptation. *Psychiatry Research*, 93(3), 247-256. [https://doi.org/10.1016/s0165-1781\(99\)00123-7](https://doi.org/10.1016/s0165-1781(99)00123-7)
- Zalazar, V., Castro-Valdez, J., Mascayano, F., Vera, N., Scorza, P., & Agrest, M. (2017). Feasibility and psychometric properties of the Recovery Assessment Scale (RAS) in people with mental illness for its use in Argentina. *Journal of Psychosocial Rehabilitation and Mental Health*, 4(2), 179-188. <https://doi.org/10.1007/s40737-017-0098-5>