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Elena López

Comillas Pontifical University, Madrid, Spain


Rafael Jódar

Comillas Pontifical University, Madrid, Spain

Douglas A. MacDonald

University of Detroit Mercy, Detroit, MI, USA

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Psychometric Properties of a Spanish Adaptation of the Expressions of Spirituality Inventory–Revised (ESI–R)

Elena López & Rafael Jódar

Comillas Pontifical University
Madrid, Spain

Douglas A. MacDonald

University of Detroit Mercy
Detroit, MI, USA

A Spanish adapted version of the Expressions of Spirituality Inventory- Revised (ESI-R; MacDonald, 2000a, 2000b), a 30-item measure of a five factor model of spirituality, was administered to a sample of 376 adults along with Spanish adaptations of the NEO-FFI personality inventory (Manga, Ramos, & Morán, 2004), the Ryff's Scales of Psychological Well-Being (Díaz et al., 2006), and the SA-45 psychopathology symptoms questionnaire (Sandín, Valiente, Chorot, Santed, & Lostao, 2008). Reliability analyses of the five ESI-R dimension scores produced inter-item consistency coefficients ranging from .83 to .97. Exploratory and confirmatory factor analytic results are consistent with other published research and provide support for the structural validity of the ESI-R with a Spanish sample. Lastly, correlations obtained between the ESI-R dimensions and demographic, personality, well-being, and psychopathology variables generated findings that confirm the convergent, discriminant, and criterion validity of the instrument. Overall, the results of this study suggest that the ESI-R is a promising instrument for spirituality research in Spain.

Keywords: *Spirituality, measurement, psychometric, cross-cultural*

Throughout most of its history, psychology has tended to follow a positivist paradigm, in which phenomena related to concepts such as spirituality have been considered subjective, and therefore, unscientific because they could not be objectively measured (Miller, 2012). However, since the 1980s, this scenario has been changing and has now come to the point where research on spirituality is generally accepted as falling within the official academic science of psychology (Miller, 2012; MacDonald, 2011, MacDonald & Friedman, 2002). In addition, the consideration of spirituality issues is increasingly included in the therapeutic relationship (Almendro, 2013; Back, Bauer-Wu, Rushton, & Halifax, 2009; Carmody, Reed, Kristeller, & Merriam, 2008). As an expression of this acceptance, there has been a tremendous increase of literature across a growing number of disciplines reporting on the development of new concepts, theories, and empirical research examining the relation of, and implications for, spirituality to health and functioning

(Almendro, 2013; Almendro & Weber, 2012; George, Larson, Koenig, & McCullough, 2000; Koenig, 2009; MacDonald & Friedman, 2002; Miller, 2012; Miller & Thoresen, 2003; Milliman, Czaplewski, & Ferguson, 2003; Tirri, Nokelainen, & Ubani, 2006).

Notwithstanding the appearance of significant advances, the scientific community has not yet reached agreement on the definition and operationalization of spirituality as a measurable construct and a variety of issues remain unresolved (Hill & Pargament, 2003; MacDonald, 2011; Miller & Thoresen, 2003). For instance, though it has come to be more widely accepted that spirituality is best understood as a multidimensional construct that is different from, but related, to religion and religiousness, the way that these to concepts are defined and measured often manifests in a commingling of spirituality with the latter (Hill et al., 2000; Hill & Pargament, 2003, MacDonald, 2000a; Miller, 2012; Pargament, 1999). Criticisms of spirituality being confounded with well-being have also been made

(Koenig, 2008; Migdal & MacDonald, 2013). As a last example, there have been burgeoning concerns regarding the universality of spirituality as some scholars argue that it is a concept that is intrinsically bound to culture. By implication, a definition and measure of spirituality devised in one cultural milieu is viewed by some as lacking generalizability and applicability to other cultures (MacDonald et al., 2015).

In light of these issues, it seems that there is a need for further research on the conceptualization and measurement of spirituality so that science on the topic can proceed in a rigorous and meaningful way. This is particularly important for spirituality research in Spain, as the vast majority of available measurement instruments have been developed and validated in English-speaking nations with English-speaking samples (e.g., see Hill & Pargament, 2003; MacDonald, LeClair, Holland, Alter, & Friedman, 1995; MacDonald, Kuentzel, & Friedman, 1999; Traphagan, 2005) and have not been adapted and/or evaluated within a Spanish cultural context. With this in mind, the purpose of the present study was to address this lacuna of empirical work by evaluating a Spanish adaptation of the Expressions of Spirituality Inventory–Revised (ESI-R; MacDonald, 2000a, 2000b) with a Spanish sample.

The ESI-R is a 30-item version of the longer 98-item Expressions of Spirituality Inventory (ESI) that was purposefully constructed by MacDonald (2000a) to address problems with the conceptualization and measurement of spirituality. The instrument was designed to operationalize a multidimensional model that was empirically derived through the factor analysis of several available measures of spirituality and related constructs. More specifically, the model has five dimensions which MacDonald (2000a) named Cognitive Orientation toward Spirituality (COS), Experiential/Phenomenological Dimension (EPD), Existential Well-Being (EWB), Paranormal Beliefs (PAR), and Religiousness (REL). COS relates to general attitudes and beliefs regarding the existence, value, and relevance of spirituality to life, including one's personal identity. EPD embodies the experiential aspect of spirituality and is thought to include experiences described as spiritual, religious, transcendent, numinous, and the like. EWB concerns meaning and purpose and life and a felt sense of resiliency in being able to handle existential adversities (e.g., suffering and death). PAR involves beliefs in the existence of parapsychological and paranormal

phenomena (e.g., mind-reading, telekinesis, witchcraft, ghosts). REL concerns devout religious belief and practice viewed by MacDonald (2000a) as reflective of what is known as intrinsic religious orientation. MacDonald (2000a) has argued that the model holds promise in serving as an organizational framework for existing conceptualizations of spirituality and has claimed in at least a few publications that the model is among the most comprehensive yet developed (MacDonald 2000a; MacDonald, 2011; MacDonald et al., 2015).

The ESI-R was selected as the focus of our study for three reasons. First, it appears to be a well-constructed and reasonably short measure that accurately captures the constructs of the parent ESI (MacDonald, 2000b). As such, it was less burdensome for us to create a Spanish adaptation of the test. Second, both the ESI and ESI-R have been used fairly extensively in research and have been shown to be useful for theory development, test validation, and the exploration of the relation of spirituality to psychological and social functioning (e.g., Affeldt & MacDonald, 2010; Huber & MacDonald, 2012; Kassab & MacDonald, 2011; MacDonald, 2009; Mendez & MacDonald, 2012; Saucier & Skrzypinska, 2006). Third, the ESI-R has been studied in different cultures and support has been found for its reliability and validity (e.g., MacDonald et al., 2015; Muhamad, Roodenburg, & Moore, 2014; Proyer & Laub, 2015).

The objectives of this study were twofold. First, we aimed to examine the reliability and validity of the ESI-R after it was translated into Spanish and adapted for use with Spanish respondents. We were specifically interested in determining if the ESI-R demonstrated satisfactory inter-item response consistency and acceptable factorial validity. Since the instrument has been found to have good psychometric properties with other cultural samples, we expected the ESI-R to show the same with a Spanish sample. Second, we were interested in seeing if we could replicate published empirical findings with the ESI-R with regard to its associations to age, sex, personality, well-being, and psychopathology (MacDonald, 2000a; MacDonald et al., 2015; MacDonald & Holland, 2003; Mendez & MacDonald, 2012; Migdal & MacDonald, 2013). The available research generally indicates that one or more of MacDonald's (2000a, 2000b) dimensions (a) show modest but positive associations with age, (b) are linked with sex such that women tend to get higher scores (especially on REL, followed by COS and PAR), (c) are related to personality traits in the well-known

Five Factor Model of personality with EWB producing the strongest associations with Neuroticism, and the other ESI-R dimensions generating considerably weaker but still significant associations with the remaining FFM traits (i.e., Extraversion, Openness to Experience, Agreeableness, Conscientiousness), (d) are related to well-being with EWB specifically demonstrating strong positive correlations, and (e) demonstrate mixed associations with psychopathology; EWB tends to generate strong negative correlations while COS and REL produce non-significant correlations, and EPD and PAR show small to moderate positive associations with measures of atypical thought, experience, and behavior. We expected to see the same patterns of findings with our adapted test with a Spanish sample.

Study

In this study we examined the reliability and validity of the Spanish version of the ESI-R, as well as test its known demographic associations in a novel population.

Participants

The sample consisted of 376 participants, 244 women and 132 men, with a mean age of 42.59 years (SD = 14.39). With respect to marital status, most of the sample reported being single (49.3%) or married (41.1%). In terms of education, most participants reported having a university degree (64.2%). More detailed information about the socio-demographics of the sample participants is reported in Table 1

Measures

Expressions of Spirituality Inventory-Revised (ESI-R; MacDonald, 2000b). The ESI-R is a short form measure of MacDonald's (2000a) five dimensional model of spirituality. It consists of a total of 32 items. Thirty of the items are evenly divided across the five dimensions (i.e., COS, EPD, EWB, PAR, REL). The last two items consist of a face validity item (designed to get information on the test-takers perception of the ESI-R as a measure of spirituality) and a response honesty item (designed to get information on the extent to which test-takers provided honest responses to questions). The ESI-R uses a five point response scale ranging from 0 (Strongly Disagree) to 4 (Strongly Agreement) that test-takers are instructed to use to rate how much they agree with the items as being applicable to their own attitudes, beliefs, experiences, and behaviors. Available investigations provide good support for the psychometric properties of the ESI-R in terms of reliability, factorial validity, convergent and discriminant

validity, and criterion validity (e.g., MacDonald 2000b, MacDonald et al., 2015; Muhamad et al., 2014; Proyer & Laub, 2015).

NEO-Five Factor Inventory (NEO-FFI; Costa & McCrae, 1992). In order to measure personality, we used the Spanish adaptation of the NEO-FFI (Manga et

Table 1. Demographic characteristics of sample

	N	% of sample
Sex	Male	132 35.1
	Female	244 64.9
Marital Status		
	Single	185 49.2
	Widow	9 2.4
	Separated	7 1.9
	Divorced	19 5.1
	Married	154 41.0
	No answer	2 0.5
Education		
	Less than 5 years of school attendance	2 0.5
	Elementary School	22 5.9
	High School	64 17.0
	Vocational training (non university)	40 10.6
	Graduate university degree	223 59.3
	Doctorate	22 5.9
	Other	3 0.8
Employment Status		
	Self-employed	50 13.3
	Employed by another	223 59.3
	Unemployed	15 4.0
	Retired	31 8.2
	Unwaged domestic work	4 1.1
	Student	52 13.8
	No answer	1 0.3
Household Monthly Income		
	Less than 1.000 €	36 9.6
	Between 1.000 and 2.000 €	114 30.3
	Between 2.000 and 4.000 €	157 41.8
	Between 4.000 and 6.000 €	29 7.7
	Over 6.000 €	28 7.4
	No answer	12 3.2
Country of Birth		
	Spain	355 94.4
	Other	21 5.6

al., 2004). The NEO-FFI consists of 60 items and uses a 5-point Likert scale. It measures the major domains of personality as found in the Five Factor Model, namely, Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness. Research with the Spanish NEO-FFI suggests that the test has adequate validity and reliability (e.g., Cronbach's alpha ranges from .71 to .82 across the five domains; Manga et al., 2004).

Scales of Psychological Well-Being (SPWB; Ryff, 1989). To assess well-being, we used the Spanish adaptation of the SPWB created by Diaz et al. (2006). The SPWB is a measure of what has come to be known as eudaimonic well-being. With the version by Diaz et al., it consists of 39-items which are used to measure the six dimensions of well-being identified by Ryff (1989); self-acceptance, positive relations, autonomy, environmental mastery, purpose in life, and personal growth. Inter-item consistencies of the six well-being subscales have been found to be marginal to excellent with the Spanish version (e.g., Cronbach's alpha range from .68 to .83).

Symptom Assessment Questionnaire-45 (SA-45; Davidson et al., 1997). The SA-45 was developed by Davison et al. (1997) as a brief version of the Symptom Checklist (SCL-90), a well known and widely used measure of psychopathology. In our study, we used the Spanish version by Sandín et al. (2008). The SA-45 utilizes a 5 point response scale and is made up of 45 items which are assigned to tap nine different subscales reflecting different forms of psychopathology. These subscales include somatization, obsession-compulsion, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. The internal consistency of the subscales (Cronbach's alpha) have been found to range between .63 to .85.

Exposure Religious and Spiritual Beliefs Survey (ERSBS; MacDonald, 2000c). The ERSBS is survey instrument designed by MacDonald (2000c) to get demographic information as well as information related to religious affiliation, religious identifications, and religious socialization influences. For the sake of the present study, we utilized it to obtain information about age, sex, and socio-demographic characteristics of our participants.

Procedure

Translation and Adaptation of ESI-R into Spanish. The Spanish adaptation of the ESI-R was carried out using a translation-back translation procedure which

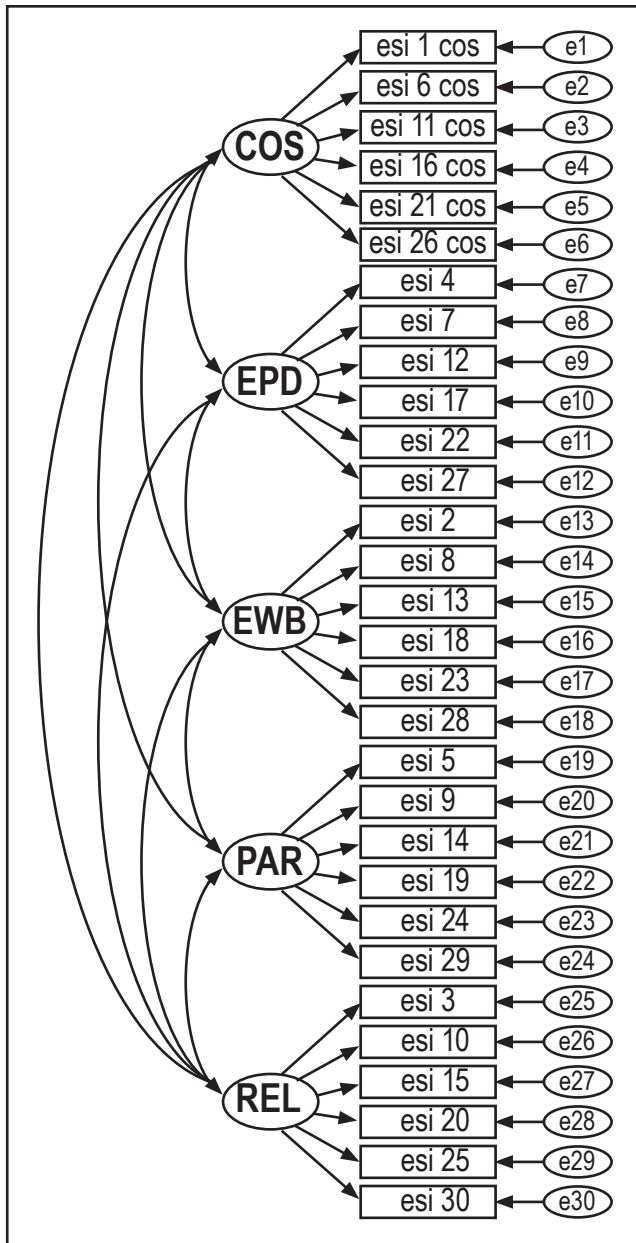
incorporated ongoing consultation with the test author (MacDonald) and the use of different translators at different phases of the process. As well, before finalizing the translation, we piloted the Spanish ESI-R with a sample of 24 Spanish psychologists from a Psychotherapy Centre in Madrid directed by Dr. Manuel Almendro (OXIGEME) so as to get feedback on the quality of the translation. Based upon feedback, relevant aspects of the translated test were modified so as to best ensure that the test was well adapted for use within a Spanish cultural context. Alterations made to the test in response to the feedback involved making some changes to item ordering and rephrasing two reverse worded items so that they were more comprehensible in the Spanish language.

Data Gathering. Data gathering was completed using a snowball sampling technique (Goodman, 1961); the questionnaires were distributed among students of the second year of the Psychology Degree and of the Master of Arts in Family Research programs at Comillas Pontifical University of Madrid. Students were instructed to complete the questionnaires themselves, and then to distribute them among people they knew who they felt would be interested in participating in the study.

Results

Our approach to data analysis involved first completing exploratory and confirmatory factor analyses on the ESI-R. For the exploratory analysis, we used principal axis factor to extract five factors. These factors were then orthogonally (varimax) rotated to facilitate interpretation. This analysis was done to see if we could replicate what MacDonald (2000a) reported in his initial development of the ESI factor model. For the confirmatory analysis, we followed the analytic methods of MacDonald et al. (2015) and used maximum likelihood factor to test the goodness of fit of a five factor model wherein all five factors were permitted to correlate. Figure 1 provides a visual depiction of this model To serve as a point of comparison, we also tested a correlated four factor model in which the COS and REL items were assigned to a single factor. This was done in response to the fact that COS and REL have been found in multiple cultural samples to be highly correlated and thus may be better represented in the model as a unified factor (e.g., MacDonald et al., 2015). Following the factor analyses, we calculated descriptive and reliability statistics for the ESI-R dimensions and then computed bivariate correlations between the ESI-R and all of our other variables of interest (age, sex, personality, well-

Figure 1. Visual Depiction of Correlated Five Factor ESI-R Model Tested in this study



being, and psychopathology). All statistical analyses were completed with SPSS (version 21) and AMOS (version 21) software.

Exploratory Factor Analysis (EFA). The varimax rotated factor loading matrix is reported in Table 2. Examination of the loading coefficients shows that all ESI-R produced elevated loadings (i.e., loadings of .40 or higher) on at least one factor. When looking at the highest loading for each item, a clear pattern emerges; REL items produce their highest loading on factor one, EPD on factor two, COS on factor three, EWB on factor four, and PAR

Table 2. Principal axis factor analysis results: Varimax rotated factor loadings for five factor solution

ESI-R Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	h2
COS1	.45	.29	.72	-.03	.07	.80
COS6	.46	.33	.71	-.04	.10	.83
COS11	.53	.35	.71	-.06	.05	.91
COS16	.54	.30	.68	-.00	.03	.84
COS21	.55	.30	.70	-.04	.05	.88
COS26	.47	.35	.72	-.01	.08	.87
EPD4	.10	.58	.37	.01	.16	.51
EPD7	.01	.80	.14	-.05	.20	.70
EPD12	.28	.75	.26	-.05	.21	.76
EPD17	.25	.76	.21	-.06	.16	.72
EPD22	.38	.65	.29	-.04	.12	.67
EPD27	.04	.80	.22	-.13	.20	.75
EWB2	-.07	.05	.06	.59	-.07	.37
EWB8	-.04	-.03	-.01	.67	-.04	.45
EWB13	.09	-.13	-.09	.65	-.02	.46
EWB18	-.01	-.07	-.09	.76	-.08	.60
EWB23	.06	-.02	-.02	.72	-.12	.53
EWB28	-.08	-.07	.05	.66	-.00	.60
PAR5	.18	.44	.03	-.11	.54	.53
PAR9	.01	.10	.09	-.04	.76	.60
PAR14	.02	.30	-.01	-.22	.46	.35
PAR19	.04	.10	.06	-.08	.81	.67
PAR24	-.06	.32	-.02	-.09	.47	.34
PAR29	.04	.07	.06	.01	.75	.57
REL3	.79	-.04	.16	.01	-.08	.65
REL10	.68	.36	.40	-.06	.07	.77
REL15	.85	.08	.22	.01	-.00	.77
REL20	.79	.21	.24	-.05	.09	.73
REL25	.87	.14	.20	-.02	.06	.82
REL30	.84	.09	.21	.02	.07	.76

Note. Varimax rotated solution accounted for a total of 65.6% of score variance. Factor loading coefficients .40 or higher are in bold. For ESI-R items, acronym indicates dimension and number indicates item numbering on Spanish adaptation of the test.

on factor five. Elevated secondary loadings are seen with all COS items on factor one, PAR item five on factor two, and REL item 10 on factor three. These results appear to closely emulate what MacDonald (2000a) reported and provide good evidence of the reliability of the factor solution.

Table 3. Confirmatory Factor Analytic Results for Correlated Four and Correlated Five Factor Models: Standardized regression weights and model fit statistics.

ESI-R Items	Correlated Four Factor Model				Correlated Five Factor Model				
	COS/REL	EPD	EWB	PAR	COS	EPD	EWB	PAR	REL
COS1	.87	---	---	---	.88	---	---	---	---
COS6	.89	---	---	---	.90	---	---	---	---
COS11	.95	---	---	---	.95	---	---	---	---
COS16	.92	---	---	---	.93	---	---	---	---
COS21	.94	---	---	---	.95	---	---	---	---
COS26	.92	---	---	---	.93	---	---	---	---
EPD4	---	.70	---	---	---	.70	---	---	---
EPD7	---	.78	---	---	---	.78	---	---	---
EPD12	---	.88	---	---	---	.87	---	---	---
EPD17	---	.86	---	---	---	.86	---	---	---
EPD22	---	.80	---	---	---	.80	---	---	---
EPD27	---	.83	---	---	---	.83	---	---	---
EWB2	---	---	.57	---	---	---	.57	---	---
EWB8	---	---	.66	---	---	---	.66	---	---
EWB13	---	---	.68	---	---	---	.68	---	---
EWB18	---	---	.78	---	---	---	.78	---	---
EWB23	---	---	.71	---	---	---	.71	---	---
EWB28	---	---	.66	---	---	---	.66	---	---
PAR5	---	---	---	.66	---	---	---	.67	---
PAR9	---	---	---	.76	---	---	---	.76	---
PAR14	---	---	---	.55	---	---	---	.55	---
PAR19	---	---	---	.80	---	---	---	.80	---
PAR24	---	---	---	.55	---	---	---	.55	---
PAR29	---	---	---	.72	---	---	---	.72	---
REL3	.58	---	---	---	---	---	---	---	.76
REL10	.84	---	---	---	---	---	---	---	.83
REL15	.70	---	---	---	---	---	---	---	.86
REL20	.74	---	---	---	---	---	---	---	.87
REL25	.73	---	---	---	---	---	---	---	.90
REL30	.71	---	---	---	---	---	---	---	.87
Factor Correlations									
EPD	.67***				.67***				
EWB	-.09	-.17**			-.10	-.17**			
PAR	.24***	.49***	-.21**		.24***	.49***	-.21**		
REL	---	---	---	---	.79***	.47***	-.05	.17**	
Model Fit Indices	$\chi^2 = 1861.08, df= 399, p < .001$ GFI = .68, TLI = .83, CFI = .84 RMSEA = .099, SRMR = .083				$\chi^2 = 1173.52, df= 395, p < .001$ GFI = .81, TLI = .91, CFI = .92 RMSEA = .072, SRMR = .075				

Note. For ESI-R items, acronym indicates dimension and number indicates item numbering on Spanish adaptation of the test. For both models, all factor loadings and error variances significant at $p < .001$. For factor correlations * $p < .05$, ** $p < .01$, *** $p < .001$.

Confirmatory Factor Analysis (CFA). Table 3 presents the standardized factor loadings and fit statistics for the two models we tested (i.e., correlated four factor and correlated five factor) we tested.

In the case of both models, all factor loadings and error variances were found to be significant. As well, with only three exceptions, estimated correlations between ESI-R dimensions also came out significant; for the four factor model, the correlation between EWB and the combined COS/REL was non-significant. In the five factor model, the correlations between EWB and COS and EWB and REL were not significant. Based upon the significance of parameter estimates alone, the findings indicate that both models appear to find support. When we consider the overall model fit indices, we find evidence that the four factor model demonstrates inadequate fit across all six indices used. For instance, chi-square is significant (for a good fit, chi-square should be non-significant), the Goodness-of-Fit Index (GFI), Tucker-Lewis Index (TLI), and Comparative Fit Index (CFI) all produce values falling well below .90 (for adequate fit, these indices should be .90 or higher; good fit is reflected by values .95 or higher), and the Root Mean Square Error of Approximation (RMSEA) and the Standardized Root Mean Residual (SRMR) are above .08 (good fit is reflected on these indices by lower values; .08 is generally viewed as providing evidence of adequate fit). Though it does not obtain consistent support, the five factor model seems to show better fit. For example, while chi-square was significant and GFI fell below .90, the TLI and CFI are above .90 and the RMSEA and SRMR are both below .08.

Since the two factor models we tested can be treated as “nested” (i.e., hierarchically related; Kline, 2011), it is possible to directly compare them to determine if one demonstrates better fit. This can be done by looking at the difference in chi-square values across the two models and then using the difference in degrees of freedom to evaluate whether or not the chi-square difference is significant. If significant, then the model producing the lower chi-square value can be deemed statistically superior to the model with the higher chi-square. In our case, the difference in chi-square between the four and five factor models is 687.56. The difference in degrees of freedom is four. This chi-square value at four degrees of freedom is highly significant ($p < .001$). Since the five factor model produced the lower chi-square value (1173.52 versus 1861.08 for the four factor model), this means that the five factor model generated

a significantly better fit to the data than the four factor model.

While the five factor model appears to be reasonably satisfactory, with our results falling very much in line with what MacDonald et al. (2015) found across eight different cultural samples, the fact that the fit indices did not provide ubiquitous and strong support for model fit indicates that there may be some problems with the model. Examination of modification indices suggested that the quality of the model would improve if some items were permitted to load on more than one factor (e.g., REL item 10 on both COS and EPD; PAR item 5 on EPD; EPD item 22 on REL) and if some item error variances were permitted to correlate (e.g., errors between COS item 1 and COS item 6; REL item 3 and REL item 15; EPD item 7 and EPD item 27). Closer inspection of all of these items revealed that they shared similarities in content which provided some justification for re-specifying the model. For example, REL item 10 appears to have an experiential quality (e.g., it refers to “feeling of connection with a higher power”) as does PAR item 5 (e.g., it mentions “communication with the dead”). EPD item 22 contains the word “divine” which may be viewed in religious terms. For the other items, each pair share something in common in terms of specific content (e.g., the words “important” and “essential” appear in items 1 and 6; “religious” and “religiously” appear in items 3 and 15; “transcend” and “going beyond” in items 7 and 27).

Given this, we felt we had sufficient grounds to re-specify the model with these new parameters and to run an additional CFA to see if it produced better model fit. Although the chi-square remained significant ($\chi^2 = 830.11$, $df = 388$, $p < .001$) and the GFI was still low (.87) in this new analysis, all other fit indices reflected improved fit (TLI = .95, CFI = .95, RMSEA = .055, SRMR = .055). Notwithstanding the finding of somewhat better fit, the results with the re-specified model were not compelling enough to support making any changes to the standard scoring of the ESI-R dimensions. Consequently, we proceeded with the reliability analysis of the dimensions using the items for each dimension as they are assigned by MacDonald (2000b).

Descriptive and Reliability Statistics. Table 4 provides information on ESI-R dimension and item score means and reliability statistics. With regard to reliability, all ESI-R dimensions generated very acceptable inter-item consistency coefficients; across all five dimensions, Cronbach’s alpha ranges from .83 for PAR to .97 for

Table 4. ESI-R Descriptive and Reliability Statistics

ESI-R Dimension	Mean	SD	Mean Item Score	Mean CIST	Alpha
COS	13.34	7.76	2.22	.91	.97
EPD	7.46	6.79	1.24	.77	.92
EWB	17.22	4.80	2.87	.61	.84
PAR	9.65	5.91	1.61	.60	.83
REL	10.90	7.56	1.82	.82	.94

Note. CIST = Corrected item-to-scale total correlation

COS. Mean corrected item-to-total score correlations for each dimension also provides support for reliability.

Since MacDonald et al. (2015) provided descriptive statistics for the ESI-R dimensions for several cultural samples, we did a quick informal comparison of our sample means to theirs. We noted that our Spanish sample obtained mean scores on COS, PAR, and REL which fell in the mid-range of mean scores across the various samples in MacDonald et al. (2015). However, our sample produced a mean score on EPD that was lower than all of their samples and a mean score on EWB which was higher than all eight of theirs.

Inter-correlations of ESI-R Dimensions. We calculated the product-moment correlations between

Table 5. Inter-correlations of ESI-R Dimension Scores

	COS	EPD	EWB	PAR
EPD	.64***			
EWB	-.08	-.14**		
PAR	.23***	.47***	-.19***	
REL	.75***	.42***	-.04	.15**

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

the ESI-R dimension scores. These are reported in Table 5.

The pattern of coefficients is similar to that seen in past research (MacDonald 2000a; MacDonald et al., 2015) with COS and REL producing the most conspicuously strong correlation ($r = .75$) and EWB generating consistently low correlations with the other four dimensions. Also in line with previous studies, COS and EPD ($r = .64$), EPD and REL ($r = .42$), and EPD and PAR ($r = .47$) were found to be moderately to strongly correlated.

Correlations with Other Study Variables. Product-moment correlations between the ESI-R

Table 5. Inter-correlations of ESI-R Dimension Scores

Study Variables		ESI-R Dimensions				
		COS	EPD	EWB	PAR	REL
Sex		.03	-.01	-.05	.14**	.07
Age		.27***	.10	-.00	-.03	.24***
NEO-FFI	Neuroticism	-.02	.09	-.74***	.23***	-.01
	Extraversion	-.06	-.07	.27***	-.02	-.04
	Openness to Experience	.20***	.37***	-.10*	.19***	-.08
	Agreeableness	.17**	.08	.31***	-.08	.10
	Conscientiousness	.12*	-.09	.23***	-.02	.14**
SPWB	Self Acceptance	.15**	.04	.56***	-.04	.11*
	Positive Relations	.06	-.06	.41***	-.07	.04
	Autonomy	.01	-.03	.46***	-.11*	-.04
	Environmental Mastery	.09	.01	.59***	-.01	.00
	Personal Growth	.25***	.21***	.22***	.07	.06
	Purpose in Life	.14**	.04	.45***	-.00	.13*
SA-45	Depression	.03	.08	-.61***	.17**	.02
	Hostility	-.03	.04	-.37***	.14**	-.02
	Interpersonal Sensitivity	-.01	.04	-.58***	.13*	.02
	Somatization	.07	.13*	-.37***	.22***	.08
	Anxiety	.05	.12*	-.59***	.21***	.04
	Psychoticism	.06	.18***	-.44***	.22***	.06
	Obsessive Compulsive	.04	.07	-.46***	.09	.04
	Phobic Anxiety	.04	.06	-.30***	.17***	.03
	Paranoid Ideation	-.04	-.04	-.44***	.16**	.03
Total Pathology	.03	.10	-.60***	.21***	.04	

Note. For sex, male = 1 and female = 2; NEO-FFI= NEO Five Factor Inventory; SPWB = Scales of Psychological Well-Being; SA-45 = Symptom Assessment Questionnaire; *p<.05, **p<.01, ***p<.001.

dimensions and demographic, personality, well-being, and psychopathology variables are reported in Table 6.

Associations with demographic variables.

Correlations with sex (where male was coded 1 and female coded 2) were small in magnitude and only the coefficient with PAR came out significant ($r = .14, p < .01$). This is somewhat out-of-line with the available research as women have been most often been found to obtain significantly higher scores on the other dimensions, especially REL. With age, significant but modest sized correlations were found with COS ($r = .27, p < .001$) and REL ($r = .24, p < .001$).

Associations with Personality.

The correlations between the ESI-R dimensions and NEO-FFI domains are fairly consistent with

what MacDonald (2000a) found when using the longer ESI and the NEO-Personality Inventory Revised (Costa & McCrae, 1992) though there are some points of divergence. In particular, EWB correlated strongly and negatively with Neuroticism ($r = -.74, p < .001$) and significantly with moderate sized positive coefficients with Extraversion ($r = .27, p < .001$), Agreeableness ($r = .31, p < .001$), and Conscientiousness ($r = .23, p < .001$). However, it also correlated significantly and negatively with Openness ($r = -.10, p < .05$). EPD generated the strongest correlation with Openness ($r = .37, p < .001$). Unlike MacDonald (2000a), PAR was found to correlate significantly with Openness ($r = .19, p < .001$) and Neuroticism ($r = .23, p < .001$). COS and REL both obtained significant but modest correlations with Conscientiousness ($r = .12, p < .05$ and $r = .14, p < .01$, respectively). COS also obtained significant correlations with Openness ($r = .20, p < .001$), and Agreeableness ($r = .17, p < .01$).

Associations with Well-Being.

Correlations between the ESI-R dimensions and the SPWB are very similar to what has been found in other studies (e.g., Migdal & MacDonald, 2013), with EWB obtaining significant moderate-to-strong correlations with all six SPWB subscales. Outside of this, COS was found to correlate significantly with SPWB Self-Acceptance ($r = .15, p < .01$), Personal Growth ($r = .25, p < .001$), and Purpose in Life ($r = .14, p < .01$). EPD produced a significant association with Personal Growth ($r = .21, p < .001$). PAR obtained a significant negative correlation with SPWB Autonomy ($r = -.11, p < .05$). Lastly, ESI-R REL generated significant correlations with SPWB Self-Acceptance ($r = .11, p < .05$) and Purpose in Life ($r = .13, p < .05$).

Associations with Psychopathology.

Correlations between the ESI-R dimensions and SA-45 scales reflect a pattern of associations that harmonizes with MacDonald and Holland (2003), and Mendez and MacDonald (2012). ESI-R EWB produced significant strong negative correlations with all SA-45 scales with coefficients ranging from $r = -.30$ to $r = .61$. PAR was observed to correlate significantly and positively with all SA-45 scales except Obsessive-Compulsive. ESI-R EPD generated three significant positive correlations with SA-45 Somatization ($r = .13, p < .05$), Anxiety ($r = .12, p < .05$), and Psychoticism ($r = .18, p < .001$). COS and REL were found to produce non-significant correlations with all SA-45 scales.

Discussion

Though there are measures of spiritual constructs that have been devised in Spain (e.g., Benito et al., 2014), few of the more influential and widely used assessment instruments developed in English have been evaluated for use in Spain with Spanish respondents. Our study is the first to rigorously examine one such test, the Expressions of Spirituality Inventory–Revised. The ESI-R is a comprehensive measure of a multidimensional model of spirituality which appears to have applicability for use in research with both normal and clinical populations. The results of the present study provide strong support for the psychometric properties of our Spanish adaptation of the ESI-R. Specifically, we found evidence of excellent reliability, satisfactory factorial validity, and acceptable convergent, discriminant, and criterion validity. In fact, our findings are very consistent with the published literature (e.g., MacDonald 2000a, MacDonald et al., 2015). Moreover, we were able to replicate the associations of the ESI-R dimensions with personality, wellness, and psychopathology variables as reported in other studies (e.g., MacDonald & Holland, 2003; Mendez & MacDonald, 2012; Migdal & MacDonald, 2013; Proyer & Laub, 2015).

As such, our findings provide further empirical substantiation of claims made by MacDonald (2000a), MacDonald and Friedman (2002), and Migdal and MacDonald (2013) indicating (a) spirituality does not appear to be fully accounted for by the five factor model of personality but is related to personality dimensions in a manner that is in line with the conceptual nature of the dimensions (e.g., the correlation between Neuroticism and EWB and Openness and EPD make sense theoretically), (b) spirituality demonstrates a multidirectional relationship with psychopathology with some dimensions producing inverse associations (EWB), others generating meager and mostly non-significant associations (COS and REL), and others showing positive associations (EPD and especially PAR) and (c) existential well-being may not be a core element of spirituality and may be better placed within the realm of well-being. This latter finding has been corroborated by recent research by MacDonald (in press) who completed a large scale conjoint factor analysis of measures of well-being and spirituality constructs and found existential well-being appeared to contribute to an omnibus well-being factor and not spirituality.

Notwithstanding the favorable findings, our factor analytic results reinforce the conclusions of MacDonald et al. (2015) who assert that while spirituality appears to be a construct that is similar across cultures and may behave in a similar manner when studied cross-culturally, the concept itself does not appear to be culturally invariant. Consequently, we fully agree with their recommendations; any efforts to study spirituality in a culture with a model or measure developed in a different culture should be done with care and caution. Researchers are advised to augment the use of standardized assessment tools like the ESI-R with multiple approaches to measurement (e.g., qualitative, behavioral, and/or biometric) and with attention given to including culture-specific content so as to best ensure that the unique features of spirituality are dutifully represented in research.

Though our findings are certainly very promising, we need to acknowledge that our sample may not be representative of the Spanish population as a whole and that our use of a snowball sampling strategy may have contributed to a limitation in the type of participant used in our sample. Future studies should be done with larger and more diverse Spanish samples to replicate and extend upon our results.

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About the Authors

Elena López, PhD, is a psychologist member of OXIGEME, a psychotherapy integration center, where she coordinates research and conducts individual and group psychotherapy. She is involved in research activities related mainly with meditative and expanded states of consciousness. Her PhD dissertation (López, 2016) used a neurophenomenological approach combining EEG and the design of an instrument to measure mindfulness states, and applied it to investigate ventral breathing in hara (VBH), a meditative practice designed by Dr. Manuel Almendro (Almendro & López, 2016), director of OXIGEME. She also holds a Ph.D. in transportation engineering, a field in which she has researched following social sciences methodologies. She has participated in several national and European-funded research projects and has published 13 papers on JCR journals, along with book chapters. She can be contacted via email at elena@oxigeme.com.

Rafael Jódar, PhD, is an Associate Professor of Psychology at the University of Comillas in Madrid, Spain, where he is the Director of the Master on Humanistic Psychotherapy and Emotion-Focused Therapy. He has been involved in research related to psychometric methods and mindfulness for the last 10 years. He can be contacted via email at rafajodar@comillas.edu

Douglas A. MacDonald, PhD, is an Associate Professor of Psychology at the University of Detroit Mercy in Detroit, Michigan USA. He is an Editor Emeritus for the *IJTS*, Associate Editor of the *Journal of Transpersonal Psychology*, Research Editor for the *Journal of Humanistic Psychology*, and Editorial Board Member for the *Psychology of Religion and Spirituality*, the *Journal of Management, Spirituality, and Religion*, the *Australian Gestalt Journal*, and *Psychological Reports*. He has been actively involved in research related to transpersonal psychology for about 25 years with primary attention given to the measurement of spirituality and related constructs. He can be contacted via email at macdonda@udmercy.edu or pneumaticscope@gmail.com

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