Multicenter Validation of the Emotional State Instrument for Dialysis Patients

Rocío Rodríguez-Rey ▾ Helena García-Llana ▾ María Paz Ruiz-Álvarez ▾ Alicia Gómez-Gómez ▾ Gloria del Peso ▾ Rafael Selgas

Background: The Emotional State Instrument for Dialysis Patients (ES-D) is a brief semistructured questionnaire to assess emotional distress in patients undergoing dialysis. It was designed to be administered by a healthcare provider. A previous study showed preliminary indicators of its content and face validity.

Objective: The aim of the current multicenter study was to explore the ES-D's psychometric properties.

Methods: A total of 605 patients with kidney disease undergoing dialysis (524 hemodialysis and 81 peritoneal dialysis) in 19 Spanish dialysis centers completed the ES-D, along with anxiety, depression (Hospital Anxiety and Depression Scale), and resilience (Brief Resilience Scale) questionnaires. The 75 healthcare providers who performed the assessments completed a satisfaction survey.

Results: The ES-D showed adequate internal consistency ($\alpha = .73$). Correlations between the ES-D scores and the scores for anxiety, depression, and resilience showed evidence of its convergent and concurrent validity. The receiver operating characteristic curve analyses showed that a cutoff of nine detected patients with moderate-to-severe emotional distress. According to these criteria, 35.4% of patients showed emotional distress. No significant differences were found between patients undergoing hemodialysis and peritoneal dialysis. The healthcare providers perceived the ES-D as useful for knowing the patients' emotional state, understanding patients' concerns, and establishing therapeutic relationships.

Conclusions: The ES-D is a useful tool for healthcare providers to explore the emotional dimension of their patients. Thus, its development represents a step forward in the improvement of comprehensive assistance and the quality of life of patients with kidney disease undergoing dialysis.

Key Words: anxiety • assessment • chronic kidney disease • depression • dialysis • emotional distress • hemodialysis • interviews • nursing • nursing care • psychometrics • questionnaire

Nursing Research, January/February 2019, Vol 68, No 1, 39–47

The main purpose of the current study is to explore the psychometric properties of the Emotional State Instrument for Dialysis Patients (ES-D), a brief semistructured questionnaire to assess emotional distress in patients with end-stage renal disease (ESRD) undergoing dialysis.

Chronic kidney disease is a progressive, usually permanent, loss of kidney function consisting of five stages. In Stages 4 and 5, the patient suffers from ESRD, and renal replacement therapy (dialysis or renal transplantation) is needed to survive (Alcazar-Arroyo, Orte-Martinez, & Otero-González, 2008). Hemodialysis is the most common method of treatment for ESRD and is typically performed in the hospital or at an outpatient dialysis facility. It requires being connected to a dialysis machine for 3–5 hours usually 3–4 days every week, involving a significant time burden. Peritoneal dialysis is a home-based alternative that requires more active involvement from the patient.

During the process of ESRD, the patient is faced with multiple difficulties and stressors, such as the adverse effects of dialysis, complex therapeutic regimens, pain, and diminished autonomy (Cukor, Cohen, Peterson, & Kimmel, 2007; Leiva-Santos et al., 2012), which lead to a high risk of emotional distress (Feroze, Martin, Reina-Patton, Kalantar-Zadeh, & Kopple, 2010). The rate of depression in various studies ranges from 35% to 44% (Chen et al., 2010; Watnick, Kirwin, Mahnensmith, & Concato, 2003), with a prevalence of anxiety disorders of 45.7% (Cukor et al., 2008).

Alleviating patients' suffering—not just treating their illnesses—is one of the primary objectives of 21st century healthcare (Callahan, 2000). To achieve this alleviation, it is necessary for healthcare professionals who assist patients with

Rocío Rodríguez-Rey, PhD, is Associate Professor, Department of Psychology, Faculty of Biomedical and Health Sciences, Universidad Europea de Madrid, Spain.
Helena García-Llana, PhD, is Psychology Associate Researcher, Department of Nephrology, La Paz University Hospital-IdiPAZ, Madrid, Spain.
María Paz Ruiz-Álvarez, MP, is Registered Nurse, Department of Nephrology, La Paz University Hospital-IdiPAZ, Madrid, Spain.
Alicia Gómez-Gómez, MP, is Registered Nurse, Department of Nephrology, Henares Hospital, Madrid, Spain.
Gloria del Peso, PhD, is Nephrology Consultant, Department of Nephrology, La Paz University Hospital-IdiPAZ, Madrid Spain.
Rafael Selgas, PhD, is Department Head, Department of Nephrology, La Paz University Hospital-IdiPAZ, Madrid, Spain.

DOI: 10.1097/NNR.0000000000000321

ESRD to attend to the patient's emotional needs (García-Llana et al., 2016; Larson & Yao, 2005). Thus, it is necessary to incorporate an evaluation of the patient's emotional state into routine care (Maté et al., 2009). This evaluation is not typically performed, perhaps because of the fact that health professionals often feel poorly prepared (Coca, Rodríguez-Rey, & Arranz, 2018; García-Llana & Rodríguez-Rey, 2017) and lack adequate tools to make assessments (Maté et al., 2009).

To facilitate the assessment of the patient's emotional state with ESRD, García-Llana et al. (2016) developed the ES-D based on the Emotional Distress Detection tool (Limonero et al., 2012; Maté et al., 2009), the empowerment model (Albee, 1980; Arranz et al., 1996; Costa & López, 1996), and the Bayés et al. model of suffering (Bayés, Arranz, Barbero, & Barreto, 1996). According to these models, the process of adaptation to a severe illness and the experience of suffering do not depend only on the threats faced by the patient but also on the coping resources he or she perceives available to face such threats (Albee, 1980; Arranz et al., 1996; Bayés et al., 1996; Costa & López, 1996).

The García-Llana et al. (2016) study described the development and preliminary psychometric properties of the ES-D tool. In this study, after the initial version of the ES-D was developed, an interjudge process was used for the items in the first version of the ES-D (n = 10 experts) to study its content and face validity. Subsequently, a pilot study was conducted (n = 25 patients) to explore the usability of the tool, as well as its preliminary indicators of content and apparent validity.

However, before being able to use the ES-D with sufficient evidence of its efficacy, a multicenter validation study to ascertain its psychometric properties was necessary. The validation study is the primary objective of this article. An additional objective is to obtain a cutoff value for emotional distress. Our hypothesis was that the ES-D tool would show adequate psychometric properties in terms of internal consistency and convergent and concurrent validity.

METHODS

A multicenter cross-sectional study was conducted. Between June 2016 and March 2017, the ES-D was administered to adult patients with ESRD on dialysis in 19 Spanish centers.

Measures were administered by nursing professionals at the centers, with the exception of one center in which the measures were administered by psychologists. A staff member from each study site was designated as responsible for the data collection at that site. Two experienced psychologists (the first and second authors) provided a 3-hour group training session prior to the data collection for all the staff members responsible for data collection. The training was aimed at ensuring a standardized application of the ES-D. Subsequently, the trained staff members provided training to all personnel involved in data collection in the centers where they worked.

The study was approved by the ethics committee of the study's coordinating hospital. All professionals and patients participated voluntarily. All participants provided prior written consent.

Participants

The inclusion criteria were (a) 18 years of age or older, (b) ESRD diagnosis, (c) undergoing dialysis treatment, (d) adequate understanding of the Spanish language, and (e) written consent. The exclusion criteria were (a) less than three months in the current dialysis program, (b) present cognitive impairment, and (c) active psychiatric illness. We excluded patients who had been less than 3 months in the current dialysis program to ensure that participants were not under the initial emotional or psychological shock or distress that can occur just after beginning dialysis therapy (Watnick et al., 2003). Data regarding cognitive impairment and psychiatric illness were collected from the patients' clinical histories.

Materials

Sociodemographic and Clinical Data Gender, date of birth, age, nationality, time in Spain (if foreign), marital status, work status, and perceived socioeconomic level by the healthcare professional were recorded. In terms of clinical data, we included the cause of ESRD, age-adjusted Charlson comorbidity index (Charlson, Pompei, Ales, & MacKenzie, 1987; Charlson et al., 2008), presence of psychiatric history, psychotropic drug use, current dialysis technique, current dialysis program months, previous renal transplantation, and possible transplant candidate. Sociodemographic and clinical data were collected from the patient's clinical history.

Emotional State Instrument for Dialysis Patients The ES-D (García-Llana et al., 2016) is designed to be administered by professionals working with patients on dialysis. It consists of five sections. In the first section (containing two items), the patient is asked about sadness and nervousness experienced during the last week, using a response scale of 0–10. The sum of these scores allows us to calculate a global indicator of emotional distress. The second section explores possible areas of concern: family, work, emotional and/or psychological, spiritual and/or religious, illness and/or treatments, relationships with professionals, and other. The response format of this section is double: dichotomic and open. The third and fourth sections explore the patient's coping resources through two open-ended questions:

1. "Since starting dialysis, what do you think helps you feel better?"
2. "Since starting dialysis, what kind of things make you happy?"

The fifth section explores external signs of discomfort as perceived by the professional, including facial expression, maladaptive isolation, constant demand for company and attention, behavioral disorders, and other concerns. The internal consistency in the sample of this study was $\alpha = .73$. The instrument is included in Appendix 1.

Hospital Anxiety and Depression Scale The Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983) is a 14-item questionnaire with a Likert-type response format of 4 points (0–3); seven questions correspond to the anxiety subscale (HADS-A), and the other seven correspond to the depression subscale (HADS-D). The HADS has been shown to have adequate psychometric properties in various groups of patients, including patients with kidney disease treated with hemodialysis (Untas et al., 2009). The Spanish version (Quintana et al., 2003) has shown adequate internal consistency (α = .86) and concurrent validity. In this study, the internal consistency index was α = .87 for the global scale and γ = .84 and .78, respectively, for the subscales HADS-A and HADS-D.

Brief Resilience Scale The Brief Resilience Scale (BRS; Smith et al., 2008) is a six-item self-report with a 5-point Likert response scale that assesses a person's self-report of their resilience, defined as the ability to recover from stress. The scores can range from 0 to 30, with higher scores indicating higher resilience. It has shown adequate internal consistency (α = .80–.90) and test–retest reliability (r = .62–.69) and has been recommended on the basis of its psychometric properties (Windle, Bennett, & Noyes, 2011). The Spanish BRS (Rodríguez-Rey, Alonso-Tapia, & Hernansaiz-Garrido, 2016) showed adequate internal consistency (α = .83) and test–retest reliability (intraclass correlation coefficient = .69). The internal consistency in the study sample was α = .80.

Ad hoc Satisfaction Survey for Healthcare Professionals This tool included sociodemographic and labor data (age, gender, years of experience with patients undergoing dialysis, and number of patients to whom the ES-D was applied) and satisfaction with the ES-D tool. Satisfaction is assessed by asking questions on a 5-point Likert scale, with scores ranging between 0 and 4.

Data Analysis

The statistical analyses were performed with SPSS v.21. First, descriptive statistics were obtained for the sociodemographic and clinical data and for the questionnaires used (ES-D, HADS, and BRS). The nonparametric Kruskal–Wallis test was used to explore whether there were differences in the ES-D scores, the HADS subscales and their total score, and the BRS scale between patients receiving dialysis treatment in different centers. Analyses of variance were performed to explore whether there were differences in these scores among the different variables depending on the type of dialysis technique. For validation purposes, the relationships between the ES-D scores, the BRS scores, and the HADS scores were explored with Pearson correlation coefficients, and differences in these scores between patients reporting concerns or not in the various areas evaluated were explored by means of Students' t tests. Qualitative data were analyzed by categorizing the patient's responses and by conducting frequency analyses. Finally, receiver operating characteristic (ROC) curves were analyzed to calculate ES-D specificity and sensitivity, and scores of the resulting cutoff values were obtained using the Pearson chi-square test. In all the analyses, a 95% confidence interval was used.

RESULTS

A total of 605 patients participated in the study. The most relevant sociodemographic and clinical data of the 605 patients evaluated are presented in Table 1. With regard to the dialysis technique, 86.1% of the patients received in-hospital hemodialysis and 13.9% used home-based techniques (7.4% automatic peritoneal dialysis, 6% continuous peritoneal dialysis, and 0.5% home-based hemodialysis). The studied group had a mean of 40.7 months using the current dialysis technique.

Emotional State: Emotional Distress, Anxiety, Depression, and Resilience

Table 2 shows the descriptive data of the various questionnaires used: the ES-D scores, the HADS subscales and the total score, and the BRS scale. The mean for emotional distress assessed by ES-D (sadness and anxiety) was 6.51 (SD = 5.31). Some 79.2% of the patients showed concerns in at least one of the areas evaluated. In the opinion of the nursing staff, 25% of the patients showed external signs of discomfort. Based on the cutoff points established for HADS, 28.3% of the patients showed anxiety and 26.4% had depression. The mean score for resilience was 3.36 (SD = 0.91, minimum–maximum = 1–5). No significant differences were found regarding dialysis technique nor regarding the hospital where they were receiving treatment (p > .05).

Associations Between Studied Variables: ES-D (Sadness and Anxiety), HADS (Depression and Anxiety), and BRS (Resilience)

To study the associations between the main variables of the study for validation purposes, correlations between ES-D items assessing sadness and anxiety, anxiety and depression assessed with the HADS, total HADS score, and resilience score using the BRS scale were performed (see Table 3). Scores in emotional distress, as measured with the ES-D, were significantly and highly correlated with the total score in the HADS (.671, p < .000). Correlations between the item measuring sadness in the ES-D and depression as measured with the HADS were high (.557, p < .000), as well as correlations between the item measuring nervousness in the ES-D and anxiety as measured with the HADS (.587, p < .000).

Differences Between Patients Reporting Concerns or Not in Areas Evaluated

The results of Students' t tests are presented in Table 4. Patients with concerns in at least one of the areas showed higher levels

TABLE 1. Sociodemographic and Clinical Data (*N* = 605)

		n	%
Gender	Male	383	63.3
	Female	222	36.7
Nationality	Spanish	568	93.9
	Other	37	6.1
Marital status	Married	373	61.7
	Unmarried couple	26	4.3
	Single	90	14.9
	Separated or divorced	32	5.3
	Widowed	84	13.9
Employed	No	548	90.6
	Yes	55	9.1
Studies	No studies	95	15.7
	Primary studies	309	51.1
	Secondary studies	134	22.1
	University studies	67	11.1
Perceived socioeconomic level	Low	78	12.9
	Medium	470	77.7
	High	57	9.4
Dialysis technique	Hospital HD	521	86.1
	CAPD	36	6
	APD	45	7.4
	Home-based HD	3	0.5
Cause ESRD	Hypertension	88	14.5
	Diabetes mellitus	126	20.8
	Glomerulonephritis	68	11.2
	Obstructive nephropathy	41	6.8
	Hereditary	26	4.3
	Unknown	99	16.4
	Other	157	26
Previous renal transplant	No	479	79.2
	Yes	123	20.3
Waiting list for renal transplant	No	398	65.8
	Yes	207	34.2
Previous psychiatric history	No	528	87.3
	Yes	77	12.7
Psychiatric drug consumption	No	411	67.9
	Yes	194	32.1
Anxiolytic consumption	No	429	70.9
	Yes	176	29.1
Antidepressant consumption	No	528	87.3
	Yes	77	12.7
No. of daily pills	<5	58	9.6
	5–10	225	37.2
	11–15	199	32.9
	16–20	97	16
	>20	26	4.3
	M (SD)		
Age	64.93 *(14.83)*		
Months on dialysis	40.68 *(45.20)*		
Charlson index[a]	5.79 *(2.71)*		

Note. APD = automatic peritoneal dialysis; CAPD = continuous peritoneal dialysis; ESRD = end-stage renal disease; HD = hemodialysis; *M* = mean, *SD* = standard deviation.

[a] Because of organizational issues regarding data collection, the Charlson index corresponds to 558 patients.

of anxiety and depression and lower levels of resilience, which provides indication of the concurrent validity of ES-D.

Coping Resources Identified by Patients Undergoing Dialysis

To understand the coping resources identified by patients, categories were established in the open-ended answers of Items 3 and 4 of the ES-D. The most frequent response (n = 103) in Item 3 had to do with thinking about renal transplantation. Only the categories related to Item 4 are presented and can be found in Table 5. What patients referred more often when asked what makes them happy were family related issues (n = 162, 26.8% of patients) and leisure activities (n = 79, 13.1% of patients). A total of 72 patients (11.9%) were unable to identify anything that makes them happy since they are in dialysis.

ROC Curves and Evidence of Cutoff Validity

To compute the specificity and sensitivity of ES-D Item 1, which is composed of the questions assessing sadness and anxiety, the sum of these scores (level of global emotional distress) was compared with the total score obtained on the HADS. If we compare the global emotional distress score with the HADS and use a HADS score of ≥16 as the cutoff, an area under the curve of .845 ($p < .001$) is observed, with a 95% confidence interval of [81, 88]. A visual analysis of the curve suggests that if we employ a cutoff value of emotional distress (sadness + anxiety) at ≥9.5, a sensitivity of 74% and a specificity of 81% are obtained. Thus, patients with scores of ≥9 on the sum of the sadness and anxiety scores would present moderate to significant emotional distress. Some 35.4% of the patients showed emotional distress scores above this cutoff point. There were no significant differences in the percentage of patients with emotional distress depending on the type of dialysis technique ($p > .05$).

To complete the validity analysis, we explored whether those with the highest level of emotional distress using the cutoff point of 9 were those who report concerns in any of the areas evaluated. We found that patients with emotional distress had greater concerns in general ($\chi^2 = 38.33$, $p < .001$). Specifically, those with emotional distress reported more family concerns ($\chi^2 = 28.04$, $p < .001$), emotional concerns ($\chi^2 = 78.44$, $p < .001$), concerns related to disease and treatments ($\chi^2 = 29.52$, $p < .001$), and other concerns ($\chi^2 = 9.40$, $p = .002$).

Regarding the associations between emotional distress and external signs of discomfort, we found that patients who were above the cutoff point of 9 tended to have at least one external sign of discomfort ($\chi^2 = 54.55$, $p < .001$). Of the signs evaluated, facial expression ($\chi^2 = 72.74$, $p < .001$), isolation ($\chi^2 = 6.44$, $p = .011$), and excessive demand for care ($\chi^2 = 9.50$, $p < .002$) differed from those who did not report emotional distress.

TABLE 2. Descriptive Data of the ES-D, the HADS, and the BRS

ES-D scores			
		M (SD)	
Sadness		3.23 (2.96)	
Anxiety		3.29 (3.02)	
Emotional distress (sadness + anxiety)		6.51 (5.31)	
		n	%
Family concerns	Yes	266	44
	No	339	56
Work concerns	Yes	71	11.7
	No	534	88.3
Emotional concerns	Yes	184	30.4
	No	421	69.6
Spiritual concerns	Yes	31	5.1
	No	574	94.9
Illness and treatment concerns	Yes	346	57.2
	No	259	42.8
Concerns related to professionals	Yes	44	7.3
	No	261	92.7
Other concerns	Yes	60	9.9
	No	545	90.1
Concerns in at least one area	Yes	479	79.2
	No	126	20.8
Facial expression of discomfort	Yes	117	19.3
	No	488	80.7
Maladaptive isolation	Yes	32	5.3
	No	573	94.7
Demands constant attention	Yes	29	4.8
	No	576	95.2
Behavioral disorders	Yes	17	2.8
	No	588	97.2
Other discomfort signs	Yes	29	4.8
	No	576	95.2
Discomfort signs in at least one area	Yes	151	25
	No	454	75

HADS and BRS scores			
	M (SD)		
Anxiety (HADS-A)	5.35 (4.10)		
Depression (HADS-D)	5.29 (3.87)		
Total HADS score	10.64 (7.08)		
Resilience (BRS)	3.36 (0.91)		
		n	%
Anxiety (HADS-A)	No anxiety (<8)	434	71.7
	Moderate (8–11)	103	17
	High (>11)	68	11.2
Depression (HADS-D)	No depression (<8)	445	73.6
	Moderate (8–10)	96	15.9
	High (≥11)	64	10.6
Total score HADS	No clinical case (<16)	469	77.5
	Clinical case (≥16)	136	22.5
Resilience (BRS)	Moderate–high (≥24)	162	26.8
	Medium–low (<24)	443	73.2

Note. BRS = Brief Resilience Scale; ES-D = Emotional State Instrument for Dialysis Patients; HADS = Hospital Anxiety and Depression Scale; HADS-A = Hospital Anxiety and Depression Scale, anxiety subscale; HADS-A = Hospital Anxiety and Depression Scale, depression subscale; *M* = mean, *SD* = standard deviation; *M* = mean, *SD* = standard deviation.

Staff Satisfaction Levels

A total of 75 professionals (73 nurses and 2 psychologists) evaluated the 605 patients. Some 93.3% of these professionals were women, and their mean age was 41.09 years (*SD* = 10.37). Regarding their satisfaction with the tool (minimum–maximum = 0–4), these professionals perceived the tool as useful, highlighting its usefulness in exploring the patient's emotional state (*M* = 3.07, *SD* = 0.89), exploring the patient's concerns (*M* = 3.03, *SD* = 0.82), establishing a relationship with the patient (*M* = 2.79, *SD* = 1.02), knowing how to help the patient (*M* = 2.69, *SD* = 0.94), exploring the patient's coping resources (*M* = 2.67, *SD* = 0.76), and increasing their self-confidence to explore emotional aspects (*M* = 2.61, *SD* = 1.01).

DISCUSSION

The results of this study showed evidence of the psychometric validity of the ES-D scores. First, the internal consistency was adequate (α = .73). In addition, correlations between emotional distress and HADS scores were significant and positive, providing evidence of the ES-D scores' convergent validity. On the other hand, those patients who expressed concerns showed higher levels of anxiety and depression and lower levels of resilience, which provided indicators of the ES-D scores' concurrent validity. No differences were found in emotional distress based on the type of dialysis technique (hemodialysis, continuous peritoneal dialysis, automated peritoneal dialysis, home-based hemodialysis); therefore, ES-D may be useful to assess emotional distress in every patient undergoing dialysis, independent of the technique.

The ROC curve analysis enabled us to calculate the specificity and sensitivity of the ES-D scores and to obtain a cutoff point. This cutoff point, above which 35.4% of the patients scored, presents evidence of validity given the patients who scored above it reported more concerns and showed more external signs of discomfort. Employing this cutoff point may make it easier to detect which patients might require referral to specialized professionals.

Professionals who used the ES-D expressed their satisfaction with it, indicating that it was useful for exploring the patient's emotional state, understanding their concerns, and establishing a therapeutic relationship. All these aspects are of special relevance in the case of a chronic disease (Cukor et al., 2007; Leiva-Santos et al., 2012), as is the case with ESRD. Given nurses have close contact with patients treated with dialysis (García-Llana & Coca, 2016), we believe they are the ideal professionals to perform this preliminary screening assessment. In future studies, it would be advisable to evaluate how this tool works when applied by other professionals, such as nephrologists.

This study also enabled us to obtain relevant data on levels of anxiety, depression, emotional distress, and coping resources. Some 28.3% and 26.4% of the patients were above the cutoff points in anxiety and depression, respectively. These data are consistent with those found in previous studies (Chen et al.,

TABLE 3. ES-D (Sadness, Anxiety), Anxiety, Depression, and Resilience Associations

	Nervousness (ES-D)	Total ED (ES-D)	Depression (HADS)	Anxiety (HADS)	Total HADS	Resilience
Sadness (ES-D)	.576***	.885***	.557***	.563***	.630***	−.438***
Nervousness (ES-D)		.890***	.406***	.587***	.562***	−.392***
Total ED (ES-D)			.542***	.648***	.671***	−.467***
Depression (HADS)				.578***	.881***	−.442***
Anxiety (HADS)					.895***	−.495***
Total HADS						−.528***

Note. ED = emotional distress (sadness + anxiety); ES-D = Emotional State Instrument for Dialysis Patients; HADS = Hospital Anxiety and Depression Scale.
*** $p \leq .001$.

2010; Cukor et al., 2008; Feroze et al., 2010; Watnick et al., 2003) and confirm the importance of exploring the emotional dimension in these patients (García-Llana et al., 2016; García-Llana & Coca, 2016). As for the main resources reported by patients for dealing with the disease and treatments, it is important to patients to have access to renal transplantation, social support, and leisure activities. Understanding the patients' coping resources is fundamental to promoting interventions based on the enhancement of these resources (Albee, 1980; Arranz et al., 1996; Bayés et al., 1996; Costa & López, 1996).

This study has a number of strengths including that it was a multicenter study with a large and varied sample. The analysis has allowed the establishment of a cutoff point for the ES-D, which has important implications from a clinical perspective. The resulting tool is a screening instrument and is therefore easy to use by healthcare professionals.

The study also has limitations. First, the majority of the patients evaluated were receiving hemodialysis (86%); thus, there was an underrepresentation of patients using in-home dialysis techniques. In addition, the characteristics that make the ES-D suitable for clinical practice make the characteristics of ES-D limited in psychometric terms; it is a semistructured interview that includes a small number of questions and various response formats. On the other hand, although this tool could be useful to explore the evolution of the patient's emotional state, we do not have data on the behavior of the ES-D when applied to repeated measures over time. Also, the findings of this study only apply to patients receiving treatment in Spanish clinics; consequently, the ES-D should be tested and adapted in other countries and cultures before being used in clinical practices.

Providing a tool with adequate psychometric properties is a necessary step for professional teams but is not sufficient to detect the patient's emotional state and make clinical decisions. Therefore, health professionals seeking to provide support for patients undergoing dialysis should receive appropriate training in therapeutic communication strategies (Bristowe et al., 2014; Costa & Arranz, 2013; García-Llana et al., 2011).

Conclusion

In summary, the ES-D instrument allows healthcare professionals to explore the emotional dimension of the patient with kidney disease treated with dialysis, making it easier to fulfill the priority objective of 21st century healthcare: alleviate patients' suffering. The validation process of this tool is an

TABLE 4. Differences Between Patients Reporting Concerns or Not in the Areas Evaluated

		n	Anxiety, *M (SD)*	Depression, *M (SD)*	Resilience, *M (SD)*
Concerns in at least one area	No	126	2.41 (2.38)***	3.25 (3.06)***	23.17 (4.64)***
	Yes	479	6.12 (4.11)	5.83 (3.89)	19.39 (5.56)
Family concerns	No	339	4.07 (3.42)***	4.55 (3.47)***	21.52 (5.22)***
	Yes	266	6.97 (4.32)	6.23 (4.15)	18.48 (5.60)
Work concerns	No	534	5.13 (4.08)***	5.27 (3.88)	20.23 (5.64)
	Yes	71	6.96 (3.95)	5.45 (3.84)	19.82 (5.20)
Emotional concerns	No	421	3.98 (3.35)***	4.30 (3.34)***	21.37 (5.27)***
	Yes	184	8.48 (3.93)	7.57 (4.05)	17.46 (5.36)
Spiritual concerns	No	574	5.29 (4.06)	5.20 (3.86)*	20.28 (5.58)
	Yes	31	6.35 (4.78)	6.90 (3.87)	18.24 (5.54)
Illness and treatment concerns	No	259	3.89 (3.52)***	4.23 (3.57)***	21.60 (5.10)***
	Yes	346	6.44 (4.17)	6.09 (3.90)	19.12 (5.71)

Note. M = mean, *SD* = standard deviation.
* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

TABLE 5. Categories for ES-D Item 4 "Since Starting Dialysis, What Things Make You Happy?"

Categories	*n*	%	Example
Nothing/no answer	72	11.9	"I've lost excitement for everything."
Family issues	162	26.8	"The silly behavior of my children, their laughter and their jokes, make me happy."
Healthcare professionals	28	4.6	"That nurses work very well and are concerned about us."
Transplant issues	50	8.3	"It makes me happy to think about the transplant."
Finishing dialysis/ days without dialysis	44	7.3	"The end of the dialysis session when I can go home and finish the treatment."
Leisure/free time/traveling	79	13.1	"Being able to go on vacation. Being able to live a normal life, to exercise, to go to the stadium."
Good control of my renal disease	58	9.6	"Being free of any incidents during the session. To have good biochemical results."
The same things as before dialysis	37	6.1	"The same as before I started dialysis."
Dialysis friends	21	3.5	"To have relationships with people who share dialysis with me and to make friends."
Other	54	8.9	"I'm really excited when I have new followers on my blog or on my Instagram."

important step in the improvement of the integral care of patients with kidney disease who are treated with dialysis.

Accepted for publication June 28, 2018.

The authors acknowledge the participation in data collection of all members of the Emotional State Working Group: L. Baena Ruiz, MP, F. Dapena Vielba, MP, A. Dorado, MP, M. J. Fernández Manjón, MP, A. Gómez Gómez, MP, S. Hermida Cerro, MP, E. Hernández Meca, MP, A. M. Matamala Gascón, MP, M. A. Morán Caballero, MP, A. Quintano Pintado, MP, Y. Ravelo Valiente, MP, A. Rico González, MP, M. J. Rollán de la Sota, MP, F. L. Sánchez Izquierdo, MP, A. Sánchez Martín, MP, M. Santana Díez, MP, and F. Trocóli González, MP.

Research reported in this publication was supported by the Spanish Society of Nephrology Nursing (SEDEN).

The study was approved by the Ethics Committee of the study's coordinating hospital (Code HULP:PI-2298).

The authors have no conflicts of interest to report.

Corresponding author: Rocío Rodríguez-Rey, PhD, Department of Psychology, School of Biomedical Sciences, Universidad Europea de Madrid, C/ Tajo S/N Urb El Bosque, Villaviciosa de Odon, Madrid, 28670, Spain (e-mail: rocio.rodriguez.rey@gmail.com).

REFERENCES

Albee, G. W. (1980). A competency model to replace the deficit model. In M. S. Gibbs, J. R. Lachenmeyer & J. Sigal (Eds.), *Community psychology: Theoretical and empirical approaches* (ed., pp. 213–238). New York, NY: Gardner.

Alcazar-Arroyo, R., Orte-Martinez, L., & Otero-González, A. (2008). Enfermedad renal crónica avanzada [Advanced chronic kidney disease]. *Nefrología*, 3–6.

Arranz, P., Costa, M., Bayés, R., Cancio, H., Magallón, M., & Hernández-Navarro, F. (1996). *El apoyo emocional en hemofilia*. Madrid, Spain: Real Fundación Victoria Eugenia.

Bayés, R., Arranz, P., Barbero, J., & Barreto, P. (1996). Propuesta de un modelo integral para una intervención terapéutica paliativa [Proposal of an integral model for a palliative therapeutic intervention]. *Medicina Paliativa*, *3*, 114–121.

Bristowe, K., Shepherd, K., Bryan, L., Brown, H., Carey, I., Matthews, B., … Murtagh, F. E. (2014). The development and piloting of the renal specific advanced communication training (REACT) programme to improve advance care planning for renal patients. *Palliative Medicine*, *28*, 360–366. doi:10.1177/0269216313510342

Callahan, D. (2000). Death and the research imperative. *New England Journal of Medicine*, *342*, 654–656. doi:10.1056/NEJM200003023420910

Charlson, M. E., Charlson, R. E., Peterson, J. C., Marinopoulos, S. S., Briggs, W. M., & Hollenberg, J. P. (2008). The Charlson comorbidity index is adapted to predict costs of chronic disease in primary care patients. *Journal of Clinical Epidemiology*, *61*, 1234–1240. doi:10.1016/j.jclinepi.2008.01.006

Charlson, M. E., Pompei, P., Ales, K. L., & MacKenzie, C. R. (1987). A new method of classifying prognostic comorbidity in longitudinal studies: Development and validation. *Journal of Clinical Epidemiology*, *40*, 373–383. doi:10.1016/0021-9681(87)90171-8

Chen, C. K., Tsai, Y. C., Hsu, H. J., Wu, I. W., Sun, C. Y., Chou, C. C., … Wang, L. J. (2010). Depression and suicide risk in hemodialysis patients with chronic renal failure. *Psychosomatics*, *51*, 528. doi:10.1176/appi.psy.51.6.528

Coca, C., Rodríguez-Rey, R., & Arranz, P. (2018). Claves de comunicación con pacientes, familiares y equipo asistencial en Nefrología [Key tools for communication with patients, families, and healthcare providers in Nephrology]. In A. Alonso-Barbarro, R. Sánchez-Hernández, J. P. Leiva-Santos, & H. García-Llana, (Eds.), *Manual de cuidados paliativos en enfermedad renal avanzada [Handbook of renal palliative care]. Sant Cugat del Vallés: Pulso Ediciones.*

Costa, M., & Arranz, P. (2013). Comunicación y counseling en oncología: El encuentro con el paciente oncológico [Communication and counselling in oncology: The encounter with oncologic patients]. In & J. A. Cruzado (Ed.), *Manual de psicooncología: Tratamientos psicológicos en pacientes con cáncer [Handbook of psychooncology: Psychological treatments in patients with cancer] (ed., pp. 55–77). Madrid, Spain: Pirámide.*

Costa, M., & López, E. (1996). *Educación para la salud: Una estratega para cambiar los estilos de vida [Education health: A strategy to change the lifestyles]. Madrid, Spain: Pirámide.*

Cukor, D., Cohen, S. D., Peterson, R. A., & Kimmel, P. L. (2007). Psychosocial aspects of chronic disease: ESRD as a paradigmatic illness. *Journal of the American Society of Nephrology*, *18*, 3042–3055. doi:10.1681/ASN.2007030345

Cukor, D., Coplan, J., Brown, C., Friedman, S., Newville, H., Safier, M., … Kimmel, P. L. (2008). Anxiety disorders in adults treated by hemodialysis: A single-center study. *American Journal of Kidney Diseases*, *52*, 128–136. doi:10.1053/j.ajkd.2008.02.300

Feroze, U., Martin, D., Reina-Patton, A., Kalantar-Zadeh, K., & Kopple, J. D. (2010). Mental health, depression, and anxiety in patients on maintenance dialysis. *Iranian Journal of Kidney Diseases*, *4*, 173–180.

García-Llana, H., Barbero, J., Remor, E., Díaz-Sayas, L., Rodríguez-Rey, R., del Peso, G., & Selgas, R. (2011). Impact of an interdisciplinary training course on counselling and decision making support for nephrology department professionals. *Nefrología*, *31*, 322–330. doi:10.3265/Nefrologia.pre2011.Apr.10833

García-Llana, H., & Coca, C. (2016). Cuidados paliativos no oncológicos: Consideraciones especiales [Non-oncological palliative care: Neuropsychological diseases, chronic diseases and advanced polypathology: Special considerations]. In Batiste, J. Maté, & D. Mateo (Eds.). *Manual para la atención psicosocial y espiritual a personas con enfermedades avanzadas: Intervención psicológica y espiritual (pp. 455–466) [Manual of psychosocial and spiritual intervention for people with advanced diseases]. Barcelona, Spain: Obra Social La Caixa.*

García-Llana, H., & Rodríguez-Rey, R. (2017). El acompañamiento a los profesionales que trabajan con las personas que se encuentran en el proceso de morir y con sus familias [The accompaniment of professionals who work with people who are in the process of dying and with their families]. *Revista de Treball Social*, *210*, 115–126.

García-Llana, H., Rodríguez-Rey, R., Rollán de la Sota, M. J., Vielba, F. D., Peña, F. R., González, F. T., & Gutiérrez, R. S. (2016). Desarrollo de un instrumento para la evaluación del malestar emocional para pacientes renales en diálisis. *Enfermeria Nefrologica*, *19*, 349–357.

Larson, E. B., & Yao, X. (2005). Clinical empathy as emotional labor in the patient-physician relationship. *JAMA*, *293*, 1100–1106. doi:10.1001/jama.293.9.1100

Leiva-Santos, J. P., Sánchez-Hernández, R., García-Llana, H., Fernández-Reyes, M. J., Heras-Benito, M., Molina-Ordas, Á., … Álvarez-Udec, F. (2012). Cuidados de soporte renal y cuidados paliativos renales: Revisión y propuesta en terapia renal sustitutiva [Renal supportive care and palliative care: Revision and proposal in kidney replacement therapy]. *Nefrología*, *32*, 20–27. doi:10.3265/Nefrologia.pre2011.Nov.11065

Limonero, J. T., Mateo, D., Maté-Méndez, J., González-Barboteo, J., Bayés, R., Bernaus, M., … Viel, S. (2012). Evaluación de las propiedades psicométricas del cuestionario de detección de malestar emocional (DME) en pacientes oncológicos [Assessment of the psychometric properties of the Detection of Emotional Distress Scale in cancer patients]. *Gaceta Sanitaria*, *26*, 145–152. doi:10.1016/j.gaceta.2011.07.016

Maté, J., Mateo, D., Bayés, R., Bernaus, M., Casas, C., González-Barboteo, J., … Viel, S. S. (2009). *Elaboración y propuesta de un instrumento para la detección de malestar emocional en enfermos al final de la vida* [Preparation and proposal of an instrument for the detection of emotional distress in patients at the end of life]. *Psicooncología*, *6*, 507–518.

Quintana, J. M., Padierna, A., Esteban, C., Arostegui, I., Bilbao, A., & Ruiz, I. (2003). Evaluation of the psychometric characteristics of the Spanish version of the Hospital Anxiety and Depression Scale. *Acta Psychiatrica Scandinavica*, *107*, 216–221. doi:10.1034/j.1600-0447.2003.00062.x

Rodríguez-Rey, R., Alonso-Tapia, J., & Hernansaiz-Garrido, H. (2016). Reliability and validity of the Brief Resilience Scale (BRS) Spanish Version. *Psychological Assessment*, *28*, e101–e110. doi:10.1037/pas0000191

Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The Brief Resilience Scale: Assessing the ability to bounce back. *International Journal of Behavioral Medicine*, *15*, 194–200. doi:10.1080/10705500802222972

Untas, A., Aguirrezabal, M., Chauveau, P., Leguen, E., Combe, C., & Rascle, N. (2009). Anxiety and depression in hemodialysis: Validation of the Hospital Anxiety and Depression Scale (HADS). *Nephrologie & Therapeutique*, *5*, 193–200. doi:10.1016/j.nephro.2009.01.007

Watnick, S., Kirwin, P., Mahnensmith, R., & Concato, J. (2003). The prevalence and treatment of depression among patients starting dialysis. *American Journal of Kidney Diseases*, *41*, 105–110. doi:10.1053/ajkd.2003.50029

Windle, G., Bennett, K. M., & Noyes, J. (2011). A methodological review of resilience measurement scales. *Health and Quality of Life Outcomes*, *9*, 8. doi:10.1186/1477-7525-9-8

Zigmond, A. S., & Snaith, R. P. (1983). The Hospital Anxiety and Depression Scale. *Acta Psychiatrica Scandinavica*, *67*, 361–370. doi:10.1111/j.1600-0447.1983.tb09716.x

APPENDIX 1.

INSTRUMENT FOR THE ASSESSMENT OF THE EMOTIONAL STATE OF PATIENTS WITH KIDNEY DISEASE UNDERGOING DIALYSIS

1. Place an "X" in the number that better describes how did you feel during the last week (ranged "0 = not sad at all" to "10 = extremely sad"; "0 = "not nervous at all" to "10 = "extremely nervous").

Not sad at all — Extremely sad

0	1	2	3	4	5	6	7	8	9	10

Not nervous at all — Extremely nervous

0	1	2	3	4	5	6	7	8	9	10

2. *(Complete by the professional based on the patient's responses)*. We would like to explore your current concerns to see if we could be of any help for you.

Area	Do you have any concerns?		What concerns you the most?
	Yes	No	
Family			
Work			
Emotional/ psychological			
Spiritual/ religious			
Disease or treatments			
Relation with healthcare providers			
Other			

3. Since you are in dialysis treatment, what do you think that helps you feel better?

_____

_____

4. Since you are in dialysis treatment, what makes you feel excited or happy?

_____

_____

5. *(Complete by the professional trying to detect symptoms that may be particularly worrying).* Check if you detect any of the following external signs of distress in the patient.

- Facial expression of discomfort *(sadness, fear, hostility...)* Yes__ No__
- Maladaptive isolation *(mutism, feeling of being bored, sleeping all the dialysis session, never ask questions…)* Yes__ No__
- Demands constant attention from the personnel (*Constant complaints, ask for glycemias, call the nurses for different symptoms during the dialysis session, call to the dialysis telephone very frequently…)* Yes___ No__
- Behavioral disorders *(arrives late to dialysis sessions/medical checkups, complaints about the entrance order to dialysis, shouts, threats, insults, hostility…)* Yes___ No__
- Other discomfort signs Yes___ No__ which ones? _____

Comments:

_____

_____