Dimensional Assessment of Anxiety in Puerto Rican Patients: Evaluating Applicability of Psychological Questionnaires

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Objective: A dimensional assessment model as a supplement to the diagnosis process could overcome the current pitfalls in classifying psychopathology in ethnic minorities. The aim of the study described herein was to examine a sample of Puerto Rican patients diagnosed with anxiety disorder in order to evaluate the psychometric properties of the specific scales that assess the following 3 domains: clinical symptoms, personality/trait, and affective style.

Methods: 80 subjects were recruited and interviewed using the Structured Clinical Interview for DSM-IV to identify the presence of anxiety disorders. Following this, various questionnaires assessing each proposed domain were administered to the participants. Reliability and validity of these questionnaires were examined using Cronbach's alpha and exploratory factor analysis. The effect of the individual items of the questionnaires on the overall reliability and validity was assessed using factor scores component matrix.

Results: Analyses revealed moderate to high reliability and validity scores within all 3 domains. The sample obtained moderate to high scores on the scales comprising clinical and personality/trait domains.

Conclusion: The use of self-report scales in accordance with the proposed dimensional framework may be an effective way to supplement categorical diagnoses within the Hispanic population represented by this sample. [*P R Health Sci J 2016;35:134-141*]

Key words: Dimensional assessment, Anxiety, Psychological questionnaires, Validity, Reliability, Hispanics

The task force for the DSM-V has called for the development of dimensional assessments for anxiety disorders (1). Across the spectrum of anxiety disorders there are common traits that are part of an individual's temperament and personality, as well as shared symptom dimensions across different forms of psychopathology (2,3). For example, increased neuroticism and negative affect, high emotional dysregulation, and intense fears have been found to characterize many anxiety disorders (4–6). Given these shared traits, it is also common to find high comorbidity between the anxiety disorders (7,8). This high rate of comorbidity emphasizes the need to assess these broad dimensions so that the differences between the specific disorders comprising the anxiety spectrum can be better defined (7–9).

The overlapping of such dimensions across anxiety disorders is more evident among ethnic minority populations, where temperament, personality, and symptom presentation have been shown to vary because of racial, ethnic, and cultural factors (9–15). Furthermore, the differences found among ethnic groups are influenced by the limited validity of current diagnostic criteria, lack of measurement applicability across cultures, and actual differences in the prevalence rates of anxiety disorders (6,16–18). A dimensional assessment model, adjunct to the process of diagnosis, could solve the current pitfalls in classifying psychopathologies in ethnic minorities (8,12). The proposition is not to abandon the current categorical model but to use dimensional constructs to improve the assessment process, especially in minority groups (5,7,18).

Roberto Lewis-Fernandez and colleagues (2010) state that dimensional assessment is particularly important in Puerto

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Ricans, since previous studies have evidenced differences between the presentation and manifestation of anxiety disorders in this group, in comparison to other minorities (5). For example, panic attacks in response to acute stressors have been found to be more prevalent in Puerto Ricans than in non-Latino whites (18). For Puerto Rican patients, the available validated assessment tools that measure constructs and manifestations of anxiety are limited to the Beck Anxiety Inventory (BAI), the Beck Depression Inventory-II (BDI-II), the State-Trait Anxiety Inventory (STAI), and the NEO Five Factor Personality Inventory (NEO-FFI) (20–27). This sustains previous impressions that more effort needs to be invested in validating scales that measure different dimensions that influences the manifestation of anxiety.

In order to define the dimensional constructs that should be assessed, Shear and colleagues (2007) suggested that a) core-specific diagnostic features should be defined and assessed, b) facets common to different anxiety disorders should form part of dimensional assessment (i.e. personality and affect constructs), and c) factor analytic approaches in testing and validating such assessment propositions should lead to adequate dimensional assessment protocols. Given the importance of dimensional assessment in minority groups, and particularly in Puerto Ricans (9), we evaluated the psychometric properties (validity and reliability) for specific scales that assess 3 proposed dimensions: clinical symptoms, personality/trait, and affective style, in a sample of Puerto Rican patients diagnosed with an anxiety disorder.

Methods

Participants

The participants were recruited as part of an experimental protocol for fear learning and extinction (details published elsewhere) (26). In this study, subjects were recruited via advertisements placed around the community and the university campus. Subjects who were interested in volunteering proceeded to an orientation that discussed informed consent. After informed consent was discussed, the subjects who complied with the study requirements (26) continued on, becoming part of the study protocol. The data from 80 subjects with anxiety disorders were used. A Structured Clinical Interview based on the DMS-IV (SCID) was used to confirm the presence of an Axis-I anxiety disorder (27). Subjects who were determined (upon being interviewed) to be suffering from depression, psychosis, or schizophrenia and/or who had a history of a CNS disorder were excluded from the study.

Written informed consent was obtained from all participants in accordance with the requirements of the Institutional Review Board of the University of Puerto Rico School of Medicine. Subjects then underwent a psychological assessment session, which included using the questionnaires to evaluate the proposed dimensions.

Measures

The dimensions were assessed with self-report measures. Following are the selected questionnaires (all of which have previously been used with Spanish-speaking populations):

Clinical symptoms

When assessing clinical symptoms in anxiety disorders, cognitive and physiological manifestations of the disorder must be considered. For this reason, we aimed to validate the use of the BAI, BDI-II, and STAI in the assessment of clinical symptoms.

The BAI

The BAI is a widely used 21-item self-report inventory used to assess anxiety levels in adults and adolescents (28). BAI items are rated on a 4-point scale: 0 (not at all) to 3 (severely). Among a Spanish-speaking sample, one study obtained an alpha of 0.93 (29). In addition, the BAI showed high internal consistency ($\alpha = 0.94$) in a sample of elderly participants from Puerto Rico (30).

The BDI-II

The BDI-II is a 21-item multiple-choice self-report inventory. The BDI is a widely used instrument that measures the existence and severity of depression. Item scores range from 0 to 3. Alpha internal consistency coefficients for the scale have ranged from 0.88 to 0.93 (23, 31). In a sample of college-aged Puerto Rican individuals, an adapted version of the BDI (BDI-S) showed high internal consistency ($\alpha = 0.88$) (20).

The STAI

The STAI is a self-report instrument that differentiates between the temporary condition of state anxiety and the longstanding quality of trait anxiety (32). It has 20 items for assessing trait anxiety and 20 for state anxiety. Alpha internal consistency coefficients for the scale have ranged from 0.86 to 0.95. Among the studies that have been performed with the Spanish version of the STAI (33), one that examined college students in Puerto Rico yielded a high internal consistency in both the state ($\alpha = 0.83$ to 0.92) and the trait ($\alpha = 0.86$ to 0.92) scales.

Personality & Trait

Within samples of anxiety disorders, there is a high correlation between neuroticism and emotional dysregulation, both of which are associated with risks for developing these disorders (36–38). To evaluate this dimension of personality and trait, we validated the NEO-FFI, the Barratt Impulsiveness Scale (BIS-11), and the Emotional dysregulation Scale (EDS).

The NEO-FFI

The NEO-FFI is a 60-item self-report scale developed to assess the 5 main domains of personality in the Five-Factor Model: neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. Previous studies have

validated its use in clinical and research samples (39,40). However some authors recommend revisions to the factor structure (41–43). Among studies performed with Spanish-speaking participants, a study by Martinez and Cassaretto yielded adequate alpha internal consistencies: 0.83 (N), 0.78 (E), 0.67 (O), 0.84 (C), 0.67 (28). To date, no studies using a Puerto Rican sample have been undertaken to examine the psychometric properties of this version of the NEO-FFI; however, the long version of the NEO (NEO-PI-R) has shown moderate to high consistency when used in studies assessing Puerto Rican populations (43).

The BIS-11

The BIS-11 is a 30-item self-report questionnaire that measures impulsive behavior (41,42). Of those who have performed studies with the Spanish version, Orozco-Cabal and colleagues (2010) found that a short version of the BIS-11 (BIS-15S) has satisfactory internal consistency ($\alpha = 0.79$) (26). This questionnaire has not been validated for use in PR.

The EDS

Emotional dysregulation refers to the inability to regulate intense, negative, or shifting emotional states (47). This construct has been found to be a crucial component in diverse mental disorders and psychiatric conditions. The EDS, Spanish version, is a 40-item self-report scale designed to measure an individual's perceptions of his or her inability to cope with and manage emotions. Studies have not been done to assess the psychometric properties of this 40-item version, and the questionnaire has not been validated for use in PR.

Affective style

Negative affect has been found to influence patterns of fear learning and extinction in individuals diagnosed with anxiety disorders (5). Negative affect can increase the severity of anxiety, which in turn can lead to poor treatment response because individuals generalize their fear and anxiety responses (47). For these reasons, for this dimension we will validate the Positive and Negative Affect Schedule (PANAS).

The PANAS

The PANAS is a 20-item scale that is used to assess 10 positive (PA) and 10 negative affective (NA) states; it addresses the 2 dominant mood components of affectivity: positive and negative (44,45). Respondents are asked to rate (using a 5-point Likert scale) the extent to which they have experienced each particular emotion. This short form is used predominantly in research settings. A Spanish adaptation of the PANAS showed bidirectional confirmatory factors, as proposed by the original developers of the scale, as well as similar consistency ($\alpha = 0.89$ for males and $\alpha = 0.87$ for females in PA; $\alpha = 0.91$ for males and $\alpha = 0.89$ for females in NA) (45). This questionnaire has not been v for use in PR.

Data analysis

We used descriptive statistics to assess the demographic characteristics of our sample. The internal consistency of each scale was calculated using Cronbach's alpha (α) reliability index (i.e. 65). Alpha values greater than or equal to 0.70 were considered satisfactory. To evaluate the construct validity of each scale, we conducted an exploratory factor analysis (EFA) with a principal component analysis (PCA) using promax oblique rotation. We used Kaiser's eigenvalue-greater-than-1 rule and Cattell's scree test criterion (retaining factors above the break). Items with 0.30 or greater loadings and forming part of the theoretical construct for each factor were included. After obtaining factors for each scale, item loadings were averaged in order to obtain a factor score, creating a factor score (FS) component matrix (the same Cronbach's cut-off [≥ 0.70] was used). This allowed exploring the goodness of factorial structure obtained per scale and the preliminary assessing of the relationship within each domain. To evaluate convergent and discriminant validity between the factors obtained, Pearson correlations were performed. We used Stata statistical software, Release 13, for all analyses.

Results

Demographic information

The sample in the study was composed mostly of females (66.3%), with a mean age of 38 (±12.5) years. The majority of the participants reported being married or living with someone (52.6%) and having an associate's or a bachelor's degree (51.3%). The most frequent diagnosis found in the initial clinical interview (SCID) was specific phobia (28.7%), followed by OCD (17.5%) and GAD (12.5%). Almost half of the sample had comorbidity with other anxiety disorders (41.2%) but no comorbidity with other Axis I disorders, as these cases were excluded from the study (Table 1). In the subsequent analysis for each domain, sample size varied from 69 to 80 (Table 2). This was due mainly to missing item values for the scales included in each domain.

Domain: Clinical scales

The means and standard deviations for the STAI, the BAI, and the BDI-II are shown in Table 1. The means for the clinical scales confirm the presence of clinically significant anxiety. However, a wide variety of scores, from mild to severe, was found in all clinical scales (total scores>30 for BDI and BAI; >50 for STAI). All the clinical symptom scales demonstrated adequate reliability, with alphas ranging from 0.90 to 0.95 (Table 2), and there was confirmation of factor structure within the scales. The BAI yielded the strongest factorial components, those being anxiety and somatic complaints. The first factor (anxiety) was the most reliable ($\alpha = 0.94$) of all clinical symptom scales. The State component of the STAI yielded 3 factors (stress, contentment, and edginess), while the Trait component yielded 2 (wellbeing and symptoms/anxiety/stress), with an alpha that

was greater than 0.80 (Table 3). The BDI also obtained a strong factorial structure of 3 factors, with an alpha that was greater than or equal to 0.80 (neuro-vegetative symptoms, sad/low mood, and low self-esteem). All scales within the domain presented satisfactory reliability and validity indices.

Table 1. Demographic and Diagnostic characteristics

Characteristic	Total (N = 80) (%)	Mean (SD) (N = 80)
Sex		
Male	27 (33.8)	-
Female	53 (66.3)	-
Age	-	38.0 (12.5)
Marital status		
Married/living with	40 (52.6)	-
Never married	21 (27.6)	-
Divorced/separated/ Widowed	15 (19.8)	-
Education		
High school or less	14 (17.6)	-
Bachelor's/Associate's degree	41 (51.3)	-
Grad school	25 (31.3)	-
Main diagnosis		
PD w/ago	9 (11.3)	-
PD w/o ago	7 (8.8)	-
Agoraphobia	1 (1.3)	-
Spec. phobia	23 (28.7)	-
Social phobia	7 (8.8)	-
OCD	14 (17.5)	-
PTSD	9 (11.3)	-
GAD	10 (12.5)	-
Comorbidity		
Yes	33 (41.3)	-
No	47 (58.8)	-

Table 2. Sample and Reliability indexes by domain

	n	Mean	SD	Cronbach's alpha coefficients
Clinical scales				
State	74	38.85	10.76	0.93
Trait	75	42.45	12.16	0.92
BAI	76	16.65	14.37	0.95
BDI-II	75	10.27	8.71	0.91
Personality & Trait scales				
NEO-FFI	69	148.62	15.83	0.69
Neuroticism	71	22.58	8.72	0.83
Extraversion	71	30.69	8.53	0.86
Openness to experience	71	30.65	6.61	0.71
Agreeableness	69	30.97	6.96	0.73
Conscientiousness	70	32.97	6.96	0.48
Emotional dysregulation scale	70	109.88	48.88	0.96
BIS-11	73	60.59	10.27	0.80
Affect scales				
PANAS-T	77	58.5	10.7	0.79
Positive affect	77	34.5	6.2	0.78
Negative affect	77	24.2	10.2	0.92

(Decrease in sample size is due to missing values in each scale)

Domain: Personality scales

The means and standard deviations for the NEO-FFI, the BIS-11, and the EDS are also shown in Table 1. Neuroticism obtained the highest mean scores of the NEO factor scales (M = 59.20). In addition, the BIS-11 mean score (M = 60.59) evidences that there were high levels of impulsivity in our sample as well as moderate levels of emotional dysregulation (M = 109.88; max score = 211). Such results are validated with reliability indices ranging from 0.79 to 0.97; see Table 2 for all scales. The EDS obtained the highest Cronbach's alpha (α = 0.97) and had a clinically consistent factorial structure of 3 factors (lability, experiential responses, and self-harm/depression) with an alpha greater than 0.80 (Tables 2 and 3). The BIS-11 and NEO sub-scales yielded varied factor structures (Table 3). From the NEO, neuroticism yielded the strongest alpha (0.88), consisting of 1 factor, while conscientiousness obtained the poorest factorial structure of 2 factors (efficiency and disorganized) with the FS being less than 0.72. The BIS-11 also obtained varied factorial loadings, having 3 factors (motor/impulsivity, household/financial/practical, and stability/plan) and alphas ranging from 0.65 (non-satisfactory) to 0.81 (Table 3).

Domain: Affective style

The PANAS-T is composed of 2 sub-scales—positive and negative affect—which are also the factorial structure of the scale (Table 3). Negative affect yielded a stronger alpha (0.92) than did positive affect (α = 0.78) (Table 1). However, the sample scored higher in terms of positive affectivity (M = 34.57) compared to negative affectivity (M = 24.23) (Table 2). These findings are unexpected, given that subjects with anxiety typically present higher negative affect.

Dimension validity

Pearson correlations (Table 4) assessing convergent and discriminant validity between factor scores in dimensions revealed high correlations amongst factors measuring symptoms, neurotic traits, emotional experiences, and lability ($r>0.30$; $p<0.05$). Consistent discrimination was found between these factors and those measuring intellect, organization, agreeableness and extraversion, and stability ($p>0.05$).

Discussion

In our sample (consisting of Puerto Ricans with various anxiety disorders), women were in the majority; in addition, over half of the sample members were married (at the time of the survey), and well over half had earned a college degree or higher (Table 1).

The clinical symptom domain showed deviations from moderate to high scores on the STAI and BAI scales. Within the affective domain, the PANAS demonstrated moderate scores, as did the personality and trait domain. In terms of personality and trait, the BIS-11 and the EDS were most prominent. Average to low scores were seen on the NEO-FFI and the BDI-II (Table 1). Average scores obtained in our sample are similar to those obtained by previous studies describing patients with anxiety disorders (18,34,35,39). Interestingly, the members of our

sample showed higher positive than negative affect, which contradicts the findings of previous studies (47). However, considering the low reliability indices obtained with the PANAS, the validity of such results are questionable. Considering the strongest psychometric properties obtained, our data suggest that the Spanish translations of the BAI, BDI, STAI, and NEO are reliable in terms of their performance with Puerto Rican participants. Additionally, the findings also present consistent psychometric data on novel scales not previously studied in PR (BIS, EDS, PANAS).

In accordance with the proposed dimensional framework, assessing clinical symptoms, personality and traits, and affective styles with self-report measures yielded high reliability across this sample of Puerto Rican individuals diagnosed with anxiety disorders. Pearson correlations revealed moderate to high correlations between the clinical and affect dimensions. The personality and trait domain were found to be better for discrimination then the other domains, with non-significant correlations. However this domain maintained an association with neuroticism, lability, and emotional experience. This demonstrates a convergent relationship among domains in anxiety disorders. Associations exemplify that anxiety disorders are more than just the presence or absence of diagnostic criteria; they are intertwined with an individual's personality, experiences, and affect, all of which should be properly assessed (47–50).

Table 3. Factor structure for each domain: clinical, personality and trait, and affect

Domain	Scale	Factors	Items per factor	Factor Alpha
Clinical symptom scales	State anxiety	1. Stress	1, 3*, 4, 7, 9, 12, 17,	0.89
		2. Contentment	19*	0.87
		3. Edginess	2*, 5*, 8*, 10*, 11*, 15*, 16*, 20*	0.82
	Trait anxiety	1. Wellbeing	6, 13, 14, 18 21, 22, 23, 25, 26, 27,	0.87
		2. Anxiety & Stress	30, 33, 35, 36, 39, 24, 28, 29, 31, 34, 37, 38, 40	0.89
	Beck anxiety (BAI)	1. Anxiety	1, 4–10, 14–18	0.94
		2. Somatic complaints	2, 3, 11–13, 19–21	0.83
	Beck depression (BDI-II)	1. Neuro-vegetative	11, 15, 16, 18, 19, 20 1, 4, 9, 10, 12, 17, 21	0.84
		2. Sad mood	2, 3, 5, 6, 7, 8, 13, 14	0.83
		3. Low Self-Esteem		0.80
Personality & Trait scales	NEO-FFI			
	Neuroticism	1. Neuroticism	1, 6*, 11, 16, 21, 26, 31, 36, 41*, 46*, 51, 56*	0.88
	Extraversion	1. Extraversion	2, 7, 12, 17*, 22, 27*, 32, 37*, 42*, 47, 52, 57*	0.87
	Openness**	1.Intellectualism/ Engagement	13, 23*, 28, 33, 43	0.73
		2. Connectedness/ Sensibility	3, 8*, 18, 38*	0.81
	Conscientiousness	1. Efficiency	10, 20, 25, 30, 40, 45, 50*	0.72
	Agreeableness	1. Disorganized	5, 15, 55, 60	0.60
		2. Communication & Compliance	4, 24, 29, 39, 44, 49, 59*	0.77
		3. Confrontation	9*, 14*, 19*	0.62
	Emotional dysregulation	1. Lability/ Heightened	1–8, 10, 13–15, 18, 20, 22, 23, 25, 29, 30, 33–36, 39	0.96
		2. Experiential response	16, 17, 19, 24, 32, 37, 38, 40	0.87
		3. Self-Harm/ Depression	11, 12, 26–28, 31	0.79
	BIS II	1. Motor/ Impulsivity	2, 4, 6, 7, 9, 12, 13, 15, 16, 27, 29	0.81
		2. Household, Financial & Practicality	8, 10, 11, 17, 21, 22, 25, 30 1, 3, 5, 14, 20, 23	0.77
		3. Stability/ Planning		0.65
Affect scales	PANAS-T			
	Positive	1. Positive affect	1, 3, 5, 9, 10, 12, 14, 16, 17, 19	0.78
	Negative	1. Negative affect	2, 4, 6, 7, 8, 11, 12, 15, 18, 20	0.92

*Recoded items in each scale, **3 items (48, 53, 58) excluded due to loadings <0.30

Patients with anxiety disorders have been characterized as having multiple problems that are beyond the current diagnostic criteria. Further, some patients meet the complete diagnostic criteria, while others present overlapping symptoms and traits that move away from the diagnostic criteria for anxiety (9). For such cases, this conceptual framework of assessment provides a nuanced depiction of clinically significant components within the disorders, making it possible for a patient's individuality (i.e. cultural background) to be considered.

For each dimension assessed, the strongest psychometric properties are seen with clinical symptom scales. This may be because they are based on sound psychological theories aiming to treat anxiety and depression. Theories such as Beck's Cognitive Behavioral theory explain the physiological manifestations of psychological illness. For the other 2 dimensions—personality and trait as well as affect—most of the scales chosen have been created in more experimental terms and following specific research aims, instead of following psychological theories as

Table 4. Factor correlations

	Neuro. Veg.	Sadness	Low Self-Esteem	Anx.	Somatic Complaints	Stress	Contentment	Edginess	Experience	Symptoms	Negative Affect
Neuro. Veg.	1.0										
Sadness	0.609 **	1.0									
Low Self-Esteem	0.635**	0.577**	1.0								
Anxiety Somatic	0.562**	0.495**	0.554**	1.0							
Complaints	0.843**	0.825**	0.806**	0.585**	1.0						
Stress	0.556**	0.559**	0.575**	0.518**	0.710**	1.0					
Contentment	0.382**	0.269	0.408*	0.326*	0.485**	0.717**	1.0				
Edginess	0.318*	0.289*	0.292*	0.215*	0.407**	0.539**	0.491**	1.0			
Experience 1	0.628**	0.566**	0.590**	0.526**	0.717**	0.751**	0.711**	0.466**	1.0		
Symptoms	0.524**	0.473**	0.587**	0.660**	0.652**	0.717**	0.515**	0.409**	0.677**	1.0	
Negative Affect	0.518**	0.532**	0.593**	0.795**	0.602**	0.582**	0.413**	-0.201	0.685**	0.754**	1.0
Positive Affect	-0.319*	-0.251*	-0.245*	-0.268*	-0.351*	-0.491**	-0.528**	-0.201*	-0.455**	-0.337*	-0.243*
Neuroticism	0.598**	0.505**	0.639**	0.703**	0.642**	0.594**	0.500**	0.219	0.689**	0.690**	0.726**
Extraversion	-0.284*	-0.166	-0.235	-0.309*	-0.300*	-0.435*	-0.3861**	-0.063	-0.434*	-0.392**	-0.295**
Intellect	-0.173	-0.316*	-0.093	-0.071	-0.217	-0.151	-0.161	-0.15	-0.217	-0.182	-0.144
Connectedness	0.002	-0.086	-0.178	-0.056	-0.112	-0.248	-0.248	-0.171	-0.154	-0.27	-0.088
Efficiency	-0.136	-0.148	-0.230	-0.277*	-0.277*	-0.397**	-0.336**	-0.132	-0.399**	-0.372**	-0.205
Disorg.	-0.281*	-0.009	-0.252*	-0.132	-0.271*	-0.192	-0.25*	-0.236	-0.252*	-0.163	0.078
Lability	0.532**	0.528**	0.576**	0.690**	0.605**	0.532**	0.415**	-0.325	0.314**	0.641**	0.648**
Emotional Exp.	0.427**	0.452**	0.498**	0.483**	0.459**	0.421**	0.316*	0.198	0.593**	0.440**	0.628**
Self-Harm	0.437*	0.452**	0.472**	0.418*	0.531**	0.442*	0.387*	0.321**	0.645**	0.429**	0.571**
Hyp. Dit.	0.578**	0.545**	0.556**	0.633**	0.647**	0.544**	0.474**	0.268*	0.587**	0.613**	0.579**
House Finan.	0.05	0.0081	0.288	0.2	0.133	0.084	0.173	-0.05	0.164	0.061	0.21
Stability & Plan.	0.0473	0.188	0.217	0.114	0.179	0.176	0.235*	-0.022	0.234	0.135	0.149
Agree 1	-0.1196	-0.207	-0.177	-0.256*	-0.215	-0.43*	-0.427*	-0.168	-0.317**	-0.356**	-0.268*
Agree 2	-0.156	-0.263*	-0.152	-0.142	-0.243*	-0.234	-0.194	-0.262*	-0.281*	-0.154	-0.182

*p<0.05; **p<0.01

their conceptual framework. This is true for all the self-report measures included in those 2 dimensions except for the NEO-FFI. Costa and McCrae (1992) developed this personality inventory based on the Five-Factor Theory of Personality. Moreover, the constructs of neuroticism and extraversion have previously been shown to have neurobiological correlates, and there are specific neurological patterns related to the predominance of one or the other in a given individual (49,50), as well as the previous relationship found between neuroticism and extraversion with the dimensions of anxiety and the depressive disorder (43).

In conclusion, results demonstrate that using a dimensional approach to measure anxiety disorders, with specific psychological questionnaires, can be effective with a Hispanic population such as the one described in this manuscript. However, the current limitation of having a small sample size prevented further analysis, which may lead to norms for general use and may, in addition, test goodness of fit in the proposed dimensions. Furthermore, the lack of a healthy control group limited scoring contrast and further analysis of construct validity. Considering all the previous, future research should be directed at continuing psychometric studies to develop adequate norms for the use of these scales within the dimensional assessment of anxiety disorders in Hispanic patients. Further studies may provide a clearer understanding of how the factor structures of each scale fit within the proposed dimensions, using confirmatory factor analysis as well as adding more scales to test for discriminations. Notwithstanding the previously mentioned limitations, using culturally valid psychological scales to make dimensional assessments to aid in the evaluation of anxiety disorders will encourage further research and should, as well, lead to treatment guidelines that target every aspect of a given disorder.

Resumen

Objetivo: Un modelo dimensional como complemento al proceso diagnóstico en las enfermedades mentales podría avanzar dificultades actuales en la clasificación de las psicopatologías, en especial en los grupos étnicos minoritarios. El objetivo de este estudio fue examinar las propiedades psicométricas de varias escalas específicas que evalúan tres dominios propuestos: síntomas clínicos, la personalidad / rasgos, y estilos afectivos. Métodos: Se realizó un estudio de corte transversal con una muestra total de 80 sujetos. Estos fueron entrevistados utilizando la Entrevista Clínica Estructurada para el DSM-IV para identificar la presencia de un diagnóstico de ansiedad. Siguiendo la entrevista se administraron varias escalas de medición para cada dominio propuesto. La confiabilidad y validez fueron examinadas usando el alfa de Cronbach y

análisis factorial exploratorio. La carga de cada reactivo fue analizada para obtener las puntuaciones de los factores que componen la matriz. Resultados: Los análisis revelaron una confiabilidad y validez entre moderada y alta dentro de los tres dominios. La muestra obtuvo puntuaciones entre moderado y alto en las escalas que comprenden los dominios clínicos y de personalidad y rasgos. Conclusión: La aplicación de las escalas auto-reportadas, en acuerdo con la estructura dimensional propuesta, puede ser una manera eficaz para complementar los diagnósticos categóricos dentro de la población Hispana representada por nuestra muestra.

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References

1. Lopez MF, Compton WM, Grant BF, Breiling JP. Dimensional approaches in diagnostic classification: a critical appraisal. Int J Methods Psychiatr Res 2007;16 Suppl 1:S6–S7.
2. Brown TA, Chorpita BF, Barlow DH. Structural relationships among dimensions of the DSM-IV anxiety and mood disorders and dimensions of negative affect, positive affect, and automatic arousal. J Abnorm Psychol 1998;107:179–92.
3. Kendler KS, Prescott CA, Myers J, Neale MC. The structure of genetic and environmental risk factors for common psychiatric and substance use disorders in men and women. Arc Gen Psychiatry 2003;60:929–37.
4. Lang PJ, McTeague LM. The Anxiety Disorder Spectrum: Fear Imagery, Physiological Reactivity and Differential Diagnosis. Anxiety Stress Coping 2009;22:5–25.
5. Lewis-Fernandez R, Hinton DE, Laria AJ, et al. Culture and the anxiety disorders: recommendations for DSM-V. Depress Anxiety 2010;27: 212–29.
6. Widiger TA, Samuel DB. Diagnostic categories or dimensions? A question for the Diagnostic and Statistical Manual for Mental Disorders--fifth edition. J Abnorm Psychol 2005;114:494–504.
7. Brown TA, Barlow DH. A proposal for a dimensional classification system based on the shared features of DSM-IV anxiety and mood disorders: implications for assessment and treatment. Psychol Assess 2009;21:256–71.
8. Antony MM, Rowa K. Evidence–Based Assessment of Anxiety Disorders in Adults. Psychol Assess 2005;17:256–66.
9. Sue DW, Torino GC. Racial–cultural competence: Awareness, knowledge, and skills. In: Carter RT, ed. Handbook of Racial–Cultural Psychology and Counseling, Vol. 2. Hoboken, NJ: Wiley; 2005:3–18.
10. Sue DW, Capodilupo CM, Torino GC, et al. Racial micro aggressions in everyday life: Implications for clinical practice. Am Psychol 2007;62: 271–86.
11. Reich SM, Pinkard T, Davidson H. Including history in the study of psychological and political power. J Community Psychol. 2008;36:173–86. doi:10.1002/jcop.20229.
12. Brown LS. Cultural competence: A new way of thinking about integration in psychotherapy. J Psychother Integr. 2009;19:340–53. doi:10.1037/a0017967.
13. Dadlani M, Overtree C, Perry-Jenkins M. Culture at the center: A reformulation of diagnostic assessment. Prof Psychol Res Pr 2012;43:175–82. doi: 10.1037/a0028152.
14. Macdonald A, Greene CJ, Torres JG, Frueh BC, Morland LA. Concordance between clinician-assessed and self-reported symptoms of post-traumatic stress disorder across three ethnoracial groups. Psychol Trauma. 2013;5:401–8. doi:/10.1037/a0027313.
15. Betancourt H, Lopez SR The study of culture, ethnicity, and race in American psychology. Am Psychol 1993;48:629–37.
16. Ozaki S, Sue S. Methodological issues in assessment research with ethnic minorities. Psychol Assess 1995;7:367–75.
17. Whatley PR, Allen J, Dana RH. Racial identity and the MMPI in African American male college students. Cultur Divers Ethnic Minor Psychol 2003;9:345–53. doi:10.1037/1099–9809.9.4.345.
18. Brown TA, Barlow DH. Classification of anxiety and mood disorders. In: Barlow DH, ed. Anxiety and Its Disorders: The Nature and Treatment of Anxiety and Panic, 2nd ed. New York, NY: Guilford Press; 2002:292–327
19. Virella B, Arbona C, Novy DM. Psychometric Properties and Factor Structure of the Spanish Version of the State-Trait Anxiety Inventory. J Pers Assess 1994;63:401–12.
20. Bonilla J, Bernal G, Santos A, Santos D. A Revised Spanish Version of the Beck Depression Inventory: Psychometric Properties with a Puerto Rican Sample of College Students. J Clin Psychol 2004;60:119–30.
21. Orozco-Cabal L, Rodríguez M, Herin DV, Gempeler J, Uribe M. Validity and Reliability of the Abbreviated Barratt Impulsiveness Scale in Spanish (BIS-15S). Rev Colomb Psiquiatr 2010;39:93–109.
22. Martinez-Uribe P, Cassaretto-Bardales M. Validation of the Spanish version of the Five Factor Inventory NEO-FFI in Peruvian college students. Rev Mexicana Psicol 2011;28:63–74.
23. Sashidharan T, Pawlow LA, Pettibone JC. An examination of racial bias in the Beck Depression Inventory-II. Cultur Divers Ethnic Minor Psychol 2012;18:203–9. doi: 10.1037/a0027689.
24. Moriondo M, Palma P, Medrano LA, Murillo P. Adaptación de la Escala de Afectividad Positiva y Negativa (PANAS) a la población de adultos de la ciudad de Córdoba: análisis psicométricos preliminaries [Adaptation of Positive and Negative Affectivity Scale (PANAS) to adults in Cordoba city: Preliminary psychometric analysis]. Univ Psychol 2012;11: 187–96.
25. Shear MK, Bjelland I, Beesdo K, Gloster AT, Wittchen HU. Supplementary dimensional assessment in anxiety disorders. Int J Methods Psychiatr Res. 2007;16 Suppl 1:S52–64. doi: 10.1002/mpr.215.
26. Martínez KG, Castro-Couch M, Franco-Chaves JA, et al. Correlations between psychological tests and physiological responses during fear conditioning and renewal. Biol Mood Anxiety Disord 2012;2:16. doi: 10.1186/2045-5380-2-16.
27. First MB, Spitzer RL, Gibbon M, Williams JBW. Structured Clinical Interview for DSM-IV-TR Axis I Disorders-Patient Edition-Bilingual (Spanish/English) SCID-I/P). (2005). New York State Psychiatric Institute: Biometrics Research Department.
28. Beck AT, Steer R. Beck Anxiety Inventory Manual. San Antonio, TX: Psychological Corporation; 1993.
29. Magán I, Sanz J, García-Vera MP. Psychometric Properties of a Spanish Version of the Beck Anxiety Inventory (BAI) in General Population. Span J Psychol 2008;11:626–40.
30. Rodríguez RM, Rodríguez-Gómez J, Martínez-Lugo M. Estudio de las características psicométricas del Inventario de Ansiedad Beck (en castellano) en una muestra de envejecidos puertorriqueños [Psychometric features of the Beck Anxiety Inventory (Spanish version) with a Puerto Rican elderly sample]. Rev Esp Geriatr Gerontol 2001;36:353–60.
31. Steer RA, Clark DA. Psychometric characteristics of the Beck Depression Inventory II with college students. Meas Eval Couns Dev 1997;30: 128–36.
32. Spielberger CD, Gorsuch RL, Lushene R, Vagg PR, Jacobs GA. Manual for the State-Trait Anxiety Inventory. Palo Alto, CA: Consulting Psychologists Press; 1983.
33. Spielberger CD, Díaz-Guerrero R. IDARE Inventario de Ansiedad: Rasgo-Estado. Mexico City, Mexico: Editorial El Manual Moderno, SA; 1975.
34. Clark LA, Watson D, Mineka S. Temperament, personality, and the mood and anxiety disorders. J Abnorm Psychol 1994;103:103–16. doi: 10.1037/0021-843X.103.1.103.
35. Weinstock LM, Whisman MA. Neuroticism as a common feature of the depressive and anxiety disorders: a test of the revised integrative hierar-

chical model in a national sample. J Abnorm Psychol. 2006;115:68–74. doi: 10.1037/0021-843X.115.1.68. PII: 2006-02317-008.
36. Costa PT, McCrae RR. Revised Neo Personality Inventory (NEO-PI-R) and Neo Five-Factor Inventory (NEO-FFI): professional inventory. Odessa. FL: Psychological Assessment Resources; 1992.
37. Manga D, Ramos F, Morán C. The Spanish norms of the NEO five-factor inventory: New data and analyses for its improvement. Rev Int Psicol Ter Psicol 2004;4:639–48.
38. Tokar DM, Fischer AR, Snell AF, Harik-Williams N. Efficient assessment of the five-factor model of personality: Structural validity analyses of the NEO five-factor inventory (Form S). Meas Eval Couns Dev 1999;32: 14–30.
39. Rosellini AJ, Brown TA. The NEO five-factor inventory: Latent structure and relationships with dimensions of anxiety and depressive disorders in a large clinical sample. Assessment. 2011;18:27–38. doi: 136.145.90.90:2073/10.1177/1073191110382848.
40. McCrae RR, Terracciano A. Universal features of personality traits from the observer's perspective: data from 50 cultures; Personality Profiles of Cultures Project. J Pers Soc Psychol 2005;88:547–61.
41. Patton JH, Stanford MS, Barratt ES. Factor structure of the Barratt Impulsiveness scale. J Clin Psychol 1995;51:768–74.
42. Stanford MS, Mathias CW, Dougherty DM, Lake SL, Anderson NE, Patton JH. Fifty years of the Barratt Impulsiveness Scale: An update and review. Pers Individ Dif 2009;47:385–95. doi: http://dx.doi.org/10.1016/j.paid.2009.04.008.
43. Bradley B, DeFife JA, Guarnaccia C, et al. Emotional dysregulation and negative Aaffect: association with psychiatric symptoms. J Clin Psychiatry 2011;72:685–91. doi:10.4088/JCP.10m06409blu.
44. Watson D, Clark LA, Tellegen A. Development and Validation of Brief Measures of Positive and Negative Affect: The PANAS Scales. J Pers Soc Psychol 1988;54:1063–70.
45. Sandín B, Chorot P, Lostao L, Joiner TE, Santed MA, Valiente RM. Escalas PANAS de afecto positivo y negativo: Validación factorial y convergencia transcultural [PANAS scales of positive affect and negative: Validation and factorial transcultural convergence]. Psicothema 1999;11:37–51.
46. Clark LA, Watson D. Tripartite model of anxiety and depression: Psychometric evidence and taxonomic implications. J Abnorm Psychol 1991;100:316–36.
47. Hofmann SG, Sawyer AT, Fang AT, Asnaani A. Emotional dysregulation Model of Mood and Anxiety Disorders. Depress Anxiety 2012;29:409–16. doi: 10.1002/da.21888.
48. Watson D, Gamez W, Simms LJ. Basic dimensions of temperament and their relation to anxiety and depression: A symptom-based perspective. J Res Pers 2005;39:46–66. doi: 10.1016/j.jro.2004.09.006.
49. DeYoung CG, Hirsh JB, Shane MS, Papademetris X, Rajeevan N, Gray JR. Testing predictions from personality neuroscience: Brain structure and the big five. Psychol Sci 2010;21:820–8. doi: 10.1177/0956797610370159.
50. Eisenberger NI, Lieberman MD, Satpute AB. Personality from a controlled processing perspective: An fMRI study of neuroticism, extraversion, and self-consciousness. Cogn Affect Behav Neurosci 2005;5: 169–81.