Revista Interamericana de Psicología/Interamerican Journal of Psychology
1999, Vol. 33, No. 2, pp. 29-48

Measuring the Experience, Expression and Control of Anger in Latin America: The Spanish Multi-Cultural State-Trait Anger Expression Inventory[1]

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Abstract

The goal of this study was to develop a psychometric scale to assess the experience, expression and control of anger in Latin American countries. Items for the Spanish Multicultural State-Trait Anger Expression Inventory (STAXI-SM) were adapted from the English State-Trait Anger Expression Inventory (STAXI). In keeping with the STAXI conceptual definitions of state-anger, trait-anger, and anger expression and control, new items were also constructed to replace those containing English idiomatic expressions. The initial item pool was reviewed by 26 psychologists from 10 Spanish-speaking Latin American countries, and modified on the basis of their comments. The resulting set of 56 items was administered to 257 Spanish native speakers at the XXV Interamerican Congress of Psychology in San Juan, Puerto Rico. Responses to the items, factored in separate principal factors analyses for males and females with promax rotations, identified 8 factors comparable to those of the English STAXI: two state anger factors (feeling angry, feeling like expressing anger), two trait anger factors (angry temperament, angry reaction), and four anger expression and control factors: Anger-In, Anger-Out, Anger/Control-In, Anger/Control-Out. Based on the consistency of the dominant factor loadings for females and males, 44 items were selected for the experimental STAXI-SM, which consists of four 5-item scales for measuring the components of state and trait anger, and four 6-item scales for assessing anger expression and control. Alpha coefficients for these brief scales for females and males varied between .79 and .92.

Compendio

El propósito de este estudio fue construir una escala psicométrica para la evaluación de la experiencia, expresión y control de la cólera en países de

América Latina. Adaptamos los reactivos del Inventario Multicultural de la Expresión de la Cólera Estado-Rasgo, de acuerdo a la versión original del inglés (STAXI). A base de las definiciones conceptuales de cólera-estado, cólera-rasgo, y de la expresión y control de la cólera del STAXI, elaboramos reactivos nuevos con el propósito de reemplazar las frases idiomáticas de la versión inglesa del STAXI. Veintiseis (26) psicólogos y psicólogas de 10 países de Latinoamérica revisaron el grupo inicial de reactivos en castellano. Hicimos modificaciones a base de los comentarios de estos/as colegas. Administramos los 56 reactivos que seleccionamos a una muestra de 257 participantes de habla castellana durante el XXV Congreso Interamericano de Psicologia que se realizó en San Juan, Puerto Rico. Analizamos las respuestas a base del análisis factorial de componentes principales con rotaciones promax, tanto en hombres como en mujeres. Surgieron 8 factores similares a aquellos de la versión en ingles del STAXI: dos factores cólera-estado (sintiendo cólera y sintiendo deseos de expresar cólera), dos factores cólera-rasgo (temperamento y reacción), y cuatro factores de la expresión y control de cólera (cólera contenida, cólera manifiesta, control de la cólera contenida, y control de la cólera manifiesta). A base de la consistencia de las cargas factoriales dominantes en hombres y mujeres, seleccionamos 44 reactivos para conformar el STAXI-SM, el cual consiste de cuatro escalas de 5 reactivos cada uno para la medición de la cólera, estado-rasgo; además de cuatro escalas de 6 reactivos cada uno para la evaluación de la expresión y control de la cólera. Los coeficientes alpha de estas escalas variaron entre .79 y .92 en hombres y mujeres.

Key Words: Anger; Measurement; Adaptation; STAXI
Palabras claves: Cólera; Medición; Adaptación; STAXI

Anger and hostility are recognized as critically important determinants of family violence and abuse, the most prevalent forms of aggression against women and young children in Latin America, which often result in physical injuries or even death. In addition, anger and hostility contribute to serious physical health problems, such as coronary heart disease (CHD), the leading cause of death among adults in the United States and other western countries (McCranie, Watkins, Brandsma, & Sisson, 1986; Moscoso, 1995; Spielberger & Moscoso, 1995). Anger and hostility also contribute to elevated blood pressure (Spielberger, Krasner, & Solomon, 1988) and hypertension (Johnson, 1989), and suppressed anger may contribute to cancer (Cooper & Faragher, 1993).

The identification of the Type-A Behavior Pattern (TABP) as a major risk factor for CHD (Friedman & Rosenman, 1974; Review Panel on Coronary Prone Behavior, 1981) has stimulated

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considerable interest in the measurement of anger because of growing evidence that anger and hostility are the lethal components of the TABP which contributes to cardiovascular disease (Dembrosky & Costa, 1987; Moscoso, 1989; Williams, 1989; Williams, et al., 1988, Williams, Barefoot & Shekelle, 1985). Measuring the experience and expression of anger requires clearly-defined conceptions of anger-related constructs, which distinguish between the situations or circumstances (stressors) that evoke angry feelings, the nature of anger as an emotional reaction, and how anger is provoked, expressed, and controlled. A coherent theoretical framework for distinguishing between anger, hostility and aggression as psychological concepts also requires taking the state-trait distinction into account.

The *State-Trait Anger Expression Inventory* (STAXI) was developed by Spielberger and his colleagues (Spielberger, 1980; Spielberger, Jacobs, Russell, & Crane, 1983; Spielberger, Johnson, Russell, Crane, Jacobs, & Worden, 1985; Spielberger, Krasner, & Solomon, 1988; Spielberger, Reheiser, & Sydeman, 1995) as a multidimensional measure for assessing the experience, expression and control of anger. The construction of the STAXI took place in four distinct stages. In the initial stage, the *State-Trait Anger Scale* (STAS) was constructed to assess two aspects of the experience of anger: the intensity of feelings of anger as a psychobiological emotional state, and individual differences in anger proneness as a personality disposition or trait (Spielberger, 1980; Spielberger, et al., 1983). The second stage in the development of the STAXI involved the construction of the *Anger Expression (AX) Scale*, which was stimulated by the recognized need to distinguish between the experience of anger and how angry feelings are expressed (Spielberger, et al., 1985). The third stage began with identifying anger control as an independent factor, which stimulated the development of a scale to assess efforts to control angry feelings (Spielberger, et al., 1988). In the fourth and final stage, scales were constructed to measure two major mechanisms for controlling anger, the control of anger out and reducing the intensity of suppressed anger (Spielberger, et al., 1995).

Measuring State and Trait Anger

The STAS State Anger (S-Anger) Scale measures the intensity of the experience of anger as an emotional state; the STAS Trait Anger

(T-Anger) Scale evaluates how often anger is generally experienced. In constructing the STAS, S-Anger was defined as "..an emotional state marked by subjective feelings that vary in intensity from mild annoyance or irritation to intense fury and rage, which is generally accompanied by muscular tension and arousal of the autonomic nervous system" (Spielberger, 1988, p. 1). The intensity of S-Anger may vary over time, as a function of perceived injustice, or of being attacked or treated unfairly by others.

Research on the factor structure of the STAS (Spielberger et al., 1983) has consistently identified two independent factors: state anger (S-Anger) and trait anger (T-Anger). Alpha coefficients for the 10-item S-Anger Scale were .90 or higher for both University students and navy recruits (Spielberger, 1988; Westberry, 1980), indicating a high degree of internal consistency and suggesting that the S-Anger scale measures a unitary emotional state. However, in studies of the factor structure of the 10-item STAS S-Anger Scale (van der Ploeg, 1988) and the 44-item STAXI, strong evidence suggesting that there are two S-Anger factors was found (Fuqua, Leonard, Masters, Smith, Campbell, & Fisher, 1991). These findings were corroborated in both, males and females, by Forgays, Forgays & Spielberger (1997). The content of the items with strong loadings on the second anger factor ("Feel like breaking things", "Feel like hitting someone") describe feelings of expressing anger in aggressive behavior. We should indicate that van der Ploeg's study was based entirely on the responses of male subjects, whereas Forgays et al. (1997) factored the responses of a large sample of university students, taking gender differences into account.

The STAS T-Anger Scale assesses individual differences in the disposition to perceive a wide range of situations as frustrating, and in the general tendency to experience angry feelings in such situations (Spielberger, et al., 1983). Factor analyses of the 10-item T-Anger Scale have consistently identified two substantially correlated factors: T-Anger/Temperament and T-Anger/Reaction (Forgays, et al., 1997; Spielberger, 1988). The STAS T-Anger/Temperament subscale assesses individual differences in the disposition to experience anger without provocation. In contrast, the T-Anger/Reaction subscale measures individual differences in the tendency to react with anger in situations that involve frustration, negative evaluations, or being treated unfairly (Spielberger, 1988). Alpha coefficients for the T-

Anger/Temperament scale vary from .84 to .89. Although the Alpha's for T- Anger/Reaction Scale are lower, ranging from .70 to .75, these values are quite satisfactory for a subscale comprised of only 4 items.

Measuring the Expression of Anger

The second stage in the development of the STAXI was the construction of a scale to measure the direction of anger expression, the *Anger Expression (AX) Scale*. The instructions for responding to the AX Scale differ considerably from those used with the STAS T-Anger Scale and other trait measures. Rather than directing subjects to respond according to how they generally feel, they are instructed in responding to the AX Scale items to indicate how often they behave in a particular manner when they feel "angry or furious" (e.g., "I say nasty things"; "I boil inside, but I don't show it").

The AX Scale was originally designed and intended to be a unidimensional bipolar continuum of individual differences in how often anger was held-in or suppressed, or expressed toward other persons or objects in the environment. However, factor analyses indicated that the AX items were actually tapping two independent dimensions (Spielberger et al., 1985). The two orthogonal factors that were identified in these analyses were labeled Anger-In and Anger-Out. Scales comprised of the 8 items with the highest loadings on each of these factors were constructed to measure the underlying dimensions.

Essentially zero correlations were found between the AX/In and AX/Out scales for large samples of male and female high school and college students (Johnson, 1984; Pollans, 1983), providing further evidence that these scales assess two conceptually distinct and empirically independent dimensions. The internal consistency of the AX/In and AX/Out scales, as measured by alpha coefficients, ranged from .73 to .84, which is satisfactory for brief 8-item measures. The median item-remainder correlations for the AX/In and AX/Out items were .53 and .44 respectively.

Measuring the Control of Anger

In the third stage of construction of the STAXI, an anger control scale was developed to assess individual differences in the frequencies that a person endeavors to control anger expression.

Three items from the original 20-item AX Scale (e.g., "control my temper"; "keep my cool"), which had moderate loadings on both the anger-in and anger-out factors in previous research (Spielberger et al., 1985), guided the construction of additional items for the anger-control item pool (e.g., "control my temper"; "keep my cool"). These items were administered to large samples of university students, along with the STAXI S-Anger, T-Anger, and AX Scale. Factor analyses of the items in the anger control pool identified, for both males and females, one very strong factor and several weak factors. Those items with the highest loadings on the strong factor for both sexes were selected for the AX Anger Control (AX/Con) Scale. To confirm that this anger control factor was relatively independent of the anger-in and anger-out factors previously identified, the items comprising the 8-item AX/Con scale, were factored together with the AX/In and AX/Out items in separate analyses for males and females. An anger control factor, consisting of all 8 AX/Con items, was the strongest factor to emerge in these analyses.

The fourth stage in the construction of the STAXI underscores the importance of distinguishing between two different mechanisms for controlling the expression of anger. The development of subscales to measure these two anger-control mechanisms was stimulated by psycholinguistic research that identified English metaphors for anger (Lakoff, 1987). In the content of Lakoff's analysis of anger metaphors, the intensity of anger as an emotional state may be considered analagous to the heat of a hot liquid in a container, where the body is the container and blood is the hot liquid. *Boiling inside* indicates a high level of intensity of suppressed anger; *blowing off steam* reflects the outward expression of angry feelings; *keeping the lid on* refers to controlling the outward expression of anger in aggressive behavior. Thus, Lakoff's anger metaphors suggest that there are two different mechanisms for controlling anger: keeping it bottled up and not letting it escape, and reducing the intensity of suppressed anger by cooling down inside.

Most of the items in the original AX/Con scale were concerned primarily with controlling anger out (e.g., "Control my temper"). To assess the control of anger-in, items were constructed in accordance the conception of reducing the intensity of suppressed anger by calming down or cooling off (Spielberger et al. 1995;

Sydeman, 1995). In separate factor analyses of large samples of male and female university students, using oblique rotation, two-factors were identified for both sexes. Loadings of individual items on the anger-in control factor were .54 or higher, with a median factor loading of .76. Item loadings on the anger-out control factor were also quite strong for both sexes, with a median loading of .65. These items with the strongest loadings on each of these anger control factors were selected to form the new AX/Con-In and AX/Con-Out scales. The content of most of the items comprising the AX/Con-In scale describe calming down, cooling off, or relaxing in an effort to reduce the intensity of suppressed anger. The AX/Con-Out scale consists of items related to inhibiting the outward expression of angry feelings.

In the past decade, the STAXI has been frequently used to assess anger in the United States (Spielberger et al., 1995), Europe (van der Ploeg, 1988), and South America with the Brazilian version in Portuguese (Spielberger & Biaggio, 1992). The STAXI provides brief, highly focused psychometric scales for assessing the experience, expression, and control of anger. This inventory was developed to assess the major components of anger in evaluations of clinical and non-clinical populations, and to provide a means of determining the contributions of various components of anger to medical conditions, such as hypertension, elevated blood pressure, coronary heart disease, and cancer. Recognizing the demonstrated utility of the STAXI and its extensive use in health psychology and behavioral medicine, the availability of a similar measure for Spanish speaking countries could possibly stimulate research on the role of anger and hostility in medical disorders and other social concerns such as domestic violence.

The major goal of this article is to report the construction and development of a Spanish adaptation of the STAXI for measuring the experience, expression and control of anger in culturally diverse populations in Latin America and the Spanish-speaking culture in the United States, taking gender into account. Gender differences were incorporated because they have long been recognized in previous studies regarding the expression of anger and hostility (Brody, 1985; Davidson & Hall, 1995; Forgays et al., 1997). The research form of the Spanish Multicultural State-Trait Anger Expression Inventory (STAXI-SMC) was designed to assess the same dimensions of anger that are measured by the original STAXI

(Moscoso & Reheiser, 1996a, 1996b). This study reports findings that demonstrate the correspondence of the factor structure of the STAXI-SMC with the revised and expanded English-language form of the STAXI, namely STAXI-2. The psychometric properties of the experimental STAXI-SMC are also reported.

METHOD

Participants

Participants in this study were 257 persons (179 females, 78 males) attending the 25th Interamerican Congress of Psychology held in San Juan, Puerto Rico. They were recruited in large conference meeting rooms at the Hilton Hotel in which participation in the "anger research study" was encouraged. Given the number of variables (56 items) in the study, a sample size of approximately 250 participants was necessary to satisfy the *subjects-to-variable (STV) ratio* and the *minimum of 100 observations rule* of thumb (Bryant & Yarnold, 1995; Gorsuch, 1983). The sample consisted of participants from the Caribbean (48%), South America (32%), Central America (16%), and Spain (4%). They ranged in age from 20 to 78 years (mdn age=36). All participants had completed training in psychology, or were currently enrolled as students in undergraduate or graduate psychology programs. Information about gender, nationality, age, and level of education was obtained from each respondent.

Construction of Items for the Spanish Multicultural-STAXI (STAXI-SM)

Based on the conceptual framework developed by Spielberger (1988), 56 items were adapted or constructed for the Latin-American culture to measure the following dimensions of anger: State Anger consisting of three subscales; Trait Anger including subsets of items measuring Temperament and Reaction; and the Expression and control of Anger consisting of four subsets of items for measuring Anger-In, Anger-Out, Anger-In Control, and Anger-Out Control. Conceptually based and written specifically for the STAXI-SMC, these items were reviewed and commented by 26 prominent Latin American psychologists who suggested modifications and corrections to conform to the appropriate

linguistic expression of the items in their own countries. The criteria for selecting these judges was having the necessary knowledge and experience in measurement and adaptation of psychological test in their own countries. The vast majority of these collaborators are currently involved in academic work in Argentina, Chile, Colombia, Cuba, Ecuador, Guatemala, Honduras, Mexico, Peru, Puerto Rico, Salvador and Venezuela (Moscoso & Spielberger, 1997).

The number of items included in the STAXI-SMC to assess each of the following dimensions of anger were: S-Anger, 12 (Feeling Angry, 4; Feeling like Expressing Anger Verbally, 4; Feeling like Expressing Anger Physically, 4); T-Anger, 12 (Temperament, 6; Reaction, 6); Anger-In, 8; Anger Out, 8; Anger-In Control, 8; Anger-Out Control, 8. In responding to the S-Anger items, participants noted the intensity of their angry feelings on the following 4-point scale: (1) *not at all* (2) *somewhat*; (3) *moderately so*; (4) *very much so*. Responses to the T-Anger and Anger Expression Scales were rated on 4-point frequency scale: (1) *almost never*, (2) *sometimes*, (3) *often*, and (4) *almost always*.

Procedure

The participants were approached in the Convention conference rooms at the Hilton Hotel, as well as outside of meeting time. The measure was administered in groups varying from 5 to 10 individuals over 40 different sessions, each lasting approximately 20 minutes. Information about the study was provided, and a written informed consent statement was obtained from all participants. They were informed that participation in the study was voluntary and that all information would be strictly confidential. Respondents were given standardized oral and written instructions in Spanish. Each subject completed the demographic data information and the Spanish Multicultural State-Trait Anger Expression Inventory. Following the completion of the STAXI-SMC, written comments from the participants were encouraged regarding the linguistic connotation of words that describe "angry feelings" in their own country. The comments of 67 participants on words that describe "angry feelings" such as *"ira", "coraje", "enojo", "furia", "rabia", "enfado", "cólera"* and *"molestia"* were presented and discussed in a symposium at the

Regional Congress of Psychology for Professionals in the Americas: Interfacing the Science and Practice of Psychology held in Mexico City (Moscoso & Spielberger, 1997).

RESULTS

To determine whether the proposed dimensions of the STAXI-SMC were supported by factor analysis in the Latin American population, the 56 items were subjected to a principal components factor analyses with promax rotations, both for male and female respondents. Exploratory factor analyses rather than confirmatory factor analyses were carried out, because such analyses were judged to be more conservative (Gorsuch, 1988). Well defined State, Trait, and Anger-expression factors with eigenvalues greater than 1.0 were found for both, female and males respondents.

The 56 State, Trait, and Anger-expression items were factored in separate analyses for males and females. Salient items were identified as possessing factors loadings equal to or greater than .35. These are represented in Tables 1, 2 and 3. Results of the 2-factor solutions with promax rotation of the 12 S-Anger items show a first factor, "feeling angry", accounting for 73% of the variance for females only; while for males, the second factor, "feel like expressing anger", accounts for 70% of the variance. These two subscales present high loadings. The "feeling angry" subscale items range from .55 to .95 (median = 75) for males; and .64 to .77 (median = .71) for females. The "feel like expressing anger" subscale items vary from .49 to .99 (median = .74) for males; and .60 to .98 (median = .79) for females (See Table 1).

Alpha coefficients and item-remainder correlations for the S-Anger items were computed separately for males and females. The alpha coefficients for this scale were .92 for males, and .92 for females, indicating a high degree of internal consistency (See Table 4). The median item-remainder correlation was .91 for males, and .91 for females.

Results of the analysis of the 12 Trait Anger items yielded two distinct subsets of six items each, the Trait-Temperament and the Trait-Reaction. The former accounts for 58% of the variance for males, and 73% of the variance for females. These two subscales also present high loadings. The "trait-temperament" subscale items vary from .47 to .79 (median = 63) for males; and .37 to .79 (median= .58) for females. The "trait-reaction" items also present high loadings for both genders (.47 or higher for females; median

Table 1
Factor Loadings of the State Items of the Spanish Multicultural Anger Expression Inventory for Females (N=179) and Males (N=78) .

	Feeling Angry		Feel like Expressing Anger	
State Items	Female	Male	Female	Male
01. Me siento enojado	.77	.95		
02. Estoy colérico	.64	.89		
03. Me siento irritado	.64	.77		
10. Me dan ganas de gritar a alguien	.71	.55		.46
06. Me dan ganas de insultar a alguien	.75			.72
09. Me dan ganas de decir groserías	.75			.64
11. Me dan ganas de maldecir	.68			.36
05. Me dan ganas de romper cosas		.99		.98
08. Me dan ganas de golpear a alguien			.82	.99
12. Tengo ganas de destrozar algo			.86	.91
07. Me dan ganas de pegar a alguien			.60	.99
04. Estoy furioso		.51	.63	.49
Eigenvalues	6.42	1.89	1.11	6.86
Percentage of variance	73%	58%	16%	21%

= .60; and .37 or higher for males; median = .57). Table 2 shows eigenvalues, percentage of variances and factor loadings for individual items of the Trait subscales.

Alpha coefficients and item-remainder correlations for the T-Anger scale were performed separately for males and females. The alpha coefficients for this scale were .87 for females, and .83 for males, indicating a very high degree of internal consistency (See Table 4). The scale median item-remainder correlation was .83 for males, and .85 for females.

Alpha coefficients and item-remainder correlations for the T-Anger scale were performed separately for males and females. The alpha coefficients for this scale were .87 for females, and .83 for males, indicating a very high degree of internal consistency (See Table 4). The scale median item-remainder correlation was .83 for males, and .85 for females.

Factor analysis of the 32 Anger Expression items yielded four factors with eigenvalues greater than 1.0, for females and males,

using the same procedures and factor extraction criteria described above. The Anger-In/Control and Anger-Out/Control factors identified in these analyses are consistent with the factor analyses studies reported by Spielberger, Rehaiser, and Sydeman (1995). The first factor, Anger-In/Control accounts for 52% of the variance for males, and 43% of the variance for females. The median factor loadings for the "anger-in/control" subscale are .75 for males, and .79 for females; for the "anger-out/control" subset are .73 for males, and .72 for females; for the "anger-out" subscale are .60 for males, and .43 for females; and, for the "anger-in/control" subset are .56 for males, and .54 for females. Table 3 presents the eigenvalues and factor loadings on these subscales.

The alpha coefficients for the 32-item Anger Expression and Anger Control Scale ranged from .79 to .81 for females, and .81 to .83 for males. For the 8-item subscales comprising this measure, the alpha coefficients were reasonably high, which indicates that such items are clearly homogeneous in nature and measure a unitary construct. These coefficients, along with the State Anger and Trait Anger Scales coefficients, are presented in Table 4.

DISCUSSION AND CONCLUDING COMMENTS

The main goal of this study was to report the construction and development of an instrument for measuring the experience, expression and control of anger in Latin America and the Spanish-speaking culture in United States. Another goal was, to evaluate the factor structure of the State, Trait, and Anger Expression Scales to determine the extent to which the structural properties of this measure corresponded with the conceptual constructs on which the STAXI scales and subscales were based.

The term "Latin America" is usually applied collectively to 20 of the independent republics of the New World. They include the 18 countries whose national language is Spanish; Brazil where Portuguese is spoken; and Haiti, where the national language is French. Occasionally the meaning of "Latin America" is extended to include more recently independent, English-speaking countries such as Jamaica or Trinidad and Tobago, but the standard list of 20 nations remains the most widely accepted. It is critically important to recognize that Latin America's population represents exceptionally complex social and cultural diversity within the

Table 2
Factor Loadings of the Trait Items of the Spanish Multicultural Anger Expression Inventory for Females (N=179) and Males (N=78)

	Temperament		Reaction	
Trait Items	Female	Male	Female	Male
03. Soy una persona exaltada	.79	.79		
12. Tengo un humor colérico	.78	.72		
02. Tengo un carácter irritable	.77	.51		
06. Me enojo muy fácilmente	.73	.74		
01. Soy muy temperamental	.60	.47		
07. Pierdo las riendas	.37	.72		
10. Me siento furioso cuando hago buen trabajo...			.75	.77
05. Me enfado cuando hago algo bien y no es...			.68	.54
11. Me enfado cuando alguien arruina mis planes...			.62	.76
08. Me pone furioso que me critiquen delante de...			.56	.64
09. Me pone furioso cometer errores estúpidos...			.47	.54
04. Me enojo cuando me retraso por errores...		.37	(.34)	.37
Eigenvalues	4.53	3.88	1.01	1.41
Percentage of Variance	73%	58%	16%	21%

Table 3

Factor Loadings of the Anger Expression Items of the Spanish Multicultural State-Trait Anger Expression Inventory. Females (N=179) and Males (N=78)

Anger Expression Items	AX/Con-In		AX/Con-Out		Anger-In		Anger-Out	
	Female	Male	Female	Male	Female	Male	Female	Male
24. Hago algo relajante...	.88	.92						
23. Trato de relajarme...	.85	.79						
22. Algo reconfortante...	.80	.89						
25. Reduzco mi rabia...	.79	.58		.38				
26. Trato de calmarme...	.75	.75						
27. Respiro profundo...	.70	.86						
21. Tranquilizo tan pronto...	.59	.57						
32. Mantengo el control...			.83	.65				
13. Puedo controlarme...			.75	.71				
06. Mantengo la calma...			.75	.66				
01. Controlo mi humor ...			.73	.81				
09. Controlo mi forma de...			.66	.77				
20. Controlo mis...			.61	.75				
16. Cosas desagradables...			.37					
15. Estoy mas enfadado...					.70	.59		
17. Me irrito mucho más...					.62	.61		
04. Contengo mi enojo...					.57	.45		
05. Me aparto de la gente...					.52	.45		
14. Secretamente soy...					.50	.53		
30. Hago comentarios...					.42			.45
11. Guardo rencores y...					.38	.66		

Table 3 (Cont.)
Factor Loadings of the Anger Expression Items of the Spanish Multicultural State-Trait Anger Expression Inventory. Females (N=179) and Males (N=78)

Anger Expression Items	AX/Con-In		AX/Con-Out		Anger-In		Anger-Out	
	Female	Male	Female	Male	Female	Male	Female	Male
07. Muestro mi enojo a...							.80	.83
02. Expreso mi cólera...							.78	.79
19. Digo como me siento...							.60	.73
29. No expresar mi enojo.						.36		.60
08. Hiervo por dentro...						.48	.51	
03. Expreso mi furia...							.47	.37
12. Difícil mostrar enojo...							.41	.41
10. Discuto con los demás...							(.26)	.36
18. Pierdo los estribos...				.37			(.12)	.41
28. Controlo deseos expresar...		.53					.39	
31. Camino tranquilizarme.		.35						
Eigenvalues	7.55	9.79	3.68	2.80	1.28	1.43	2.34	2.39
Percentage of Variance	43%	52%	21%	15%	7%	8%	13%	13%

Table 4
Alpha Coefficients of the Spanish Multicultural State-Trait Anger Expression Inventory Measures for Females (N=179) and Males (N=78)

	Alpha Coefficients	
	Female Scores	Male Scores
State Anger	.92	.92
Trait Anger	.87	.83
Anger –Out	.81	.83
Anger-In	.80	.83
Anger Control/In	.79	.81
Anger Control/Out	.79	.82

region, where it can be argued that the differences in spoken language among these countries more than outweigh the similarities. Recognizing the utility of the STAXI and its extensive use in health psychology and behavioral medicine, the availability of a measure that assesses the experience, expression and control of anger, taking into consideration the diversity in Spanish language in Latin America, becomes a top priority. The STAXI-SMC intends to stimulate research on the role of anger and hostility in family violence and child abuse, and to facilitate understanding of the role these emotions play in medical disorders.

Results of the factor analyses to the 56 STAXI-SMC items confirmed the assumed structural properties of the inventory and provided empirical support for conceptualizing anger as a multidimensional construct. The S-Anger scale items clearly provide evidence of two distinctive factors: "Feeling Angry" and "Feeling Like Expressing Anger", while raising very interesting questions in regard to how Latin American men and women may differ in the experience and expression of anger. For females, "Feeling Angry" items account for 73% of the variance, while for males, this factor accounts for only 19% of the variance. "Feel Like Expressing Anger" items loaded on the second factor

accounting for 70% of the variance for males, and 13% of the variance for females.

Examining the factor loadings in Table 1, several points can be made. Item "*estoy furioso*" (#4) presents with double loadings for males and females, which may indicate that this item taps the physical expression of anger in addition to feeling angry. We can make the same observation on item #10 "*me dan ganas de gritar a alguien*" for males only. Items "*me dan ganas de insultar a alguien*" (# 6), "*me dan ganas de decir groserías*" (# 9), and "*me dan ganas de maldecir*" (# 11) clearly indicate the experience of anger (feeling angry) for females, while for males, these items have high loadings on the expression of anger (feel like expressing anger). This finding may suggest that the male respondents in this sample are more prone to the expression of their angry feelings as compared to female respondents.

In evaluating the factor loadings in Table 2, the findings provide excellent evidence of the structural validity of the Trait Anger Scale. Except for the item "*me enojo cuando me retraso por errores de otros*" (# 4), all the rest of the items had very high loadings on one factor, with relatively low loadings on the other. These results lend substantial credibility to the multidimensional framework of the anger construct represented by the T-Anger scale of the English version of the STAXI (Spielberger, 1988), and provide striking confirmation of the unique structure of the Angry temperament and Angry Reaction subscales.

Table 3 clearly reflects the same four-factor structure found on the Anger Expression Scale of the revised English version of the STAXI (STAXI-2), that includes the 2 new Anger-Control subscales (Spielberger et. al., 1995). Seven items on the AX/Con-In and 6 items on the AX/Con-Out had very high loadings on factor 1 and factor 2 respectively, which was essentially the same for both sexes, providing strong verification of the underlying factor structure for the AX/Con subscales. Furthermore, 6 items on the AX/Anger-In and 5 items on the AX/Anger-Out had high loadings on one factor, with marginally low loadings on the other.

Examining the Alpha coefficients in Table 4, it is important to point out that all the coefficients for the State, Trait, and Anger Expression and Control Scales are very high, which adds significant internal consistency and credibility to the STAXI-SMC. This is surprising given the factorial complexity of these scales.

In summary, the analyses reported in the present study substantially verified the factor structure of the English version of the STAXI-2 in a Latin American sample. The State Anger dimension was essentially confirmed, along with evidence that this scale is comprised of two distinctive components, "Feeling Angry" and "Feeling Like Expressing Anger". The Trait Anger dimension was also confirmed, reflecting evidence of the two clearly different factors, Trait Temperament and Trait Reaction. Finally, the Anger Expression Scale shows good evidence of the four factors previously found in the original English version.

Although the factor structures that emerged from this multicultural sample were remarkably similar, in essence, to the factor structures of the English version of the STAXI-2, these findings should be taking cautiously. This is a first step in measuring the experience, expression, and control of anger with Spanish-speaking populations; and this instrument should be considered exploratory, in nature, to provide a measure that is sensitive to cultures with significant differences in language in Latin America for the assessment of this core emotion.

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