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The Hispanic Stress Inventory-Adolescent Version: A Culturally Informed Psychosocial

Assessment

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Author Note

This research was supported by the National Institute of Mental Health, Grant No. 1R43MH073180-01A1 and 2R44MH073180-02 to Dr. Richard C. Cervantes. Funding for Dr. Napper's participation was obtained from National Research Service award F32DA022902 from the National Institute on Drug Abuse. Correspondence concerning this article should be addressed to Richard C. Cervantes, Behavioral Assessment Inc., 291 S. La Cienega, Suite 308, Beverly Hills, CA 90211. Email: bassessment@aol.com

### Abstract

A 2-phase study was conducted to develop a culturally informed measure of psychosocial stress for adolescents, the Hispanic Stress Inventory-Adolescent Version (HSI-A). Phase I involved item development through the collection of open-ended focus group interview data (n=170) from a heterogeneous sample of Hispanic youth residing in the southwest and northeast United States. Phase 2 examined the psychometric properties of the HSI-A (n=1637) involving the use of factor analytic procedures to determine the underlying scale structure of the HSI-A, for foreign-born and U.S.-born participants in an aggregated analytic approach. Criterion related validity estimates were calculated to determine relationships between HSI-A and other measures of child psychopathology, behavioral and emotional disturbances. Reliability estimates for the HSI-A were conducted and yielded high reliability coefficients.

Keywords: Hispanic, Adolescent, Assessment, Mental Health, Stress

There have been numerous advances in the development of mental health assessment and diagnostic tests and inventories for children and adolescents (Conner & Rueter, 2009). Most of this development and research has aimed at specifying psychological symptomatology and distinct emotional disorders among youth. Self report, parent report, and teacher report measures are now available to assess depression (Kovacs, 2006; Kovacs & Beck, 1977; Sitarenios & Kovacs, 1999), behavioral disorders (Achenbach, 1991; Achenbach, 1998; Achenbach, Dumenci, & Rescorla, 2002; Achenbach & Rescorla, 2001; Hogan, Quay, Vaughn, & Shaprio, 1989; Quay, 1983; Quay & Peterson, 1993; Connor-Smith, Compas, Wadsworth, Thomsen, & Saltzman, 2000), trauma (Bernstein, Ahluvalia, Pogge, & Handelsman, 1997; Bernstein & Fink, 1998), anxiety (Chorpita, Yim, Moffit, Umemoto, & Francis, 2000; Gerard & Reynolds, 1999; Reynolds & Richmond, 1985), and parenting stress (Sheras, Abidin, & Konold, 1998). Specific to adolescents, there exist tools to assess stress among parents of adolescents (Abidin, 1986), coping measure that focus on family crises management (Olsen, 2004), dating violence (Hokoda et al., 2006), acculturation (Barona & Miller, 1994), and anxiety and depression (Szabó, 2010).

Work has also been done in the area of development of culturally appropriate measures for adults. Cervantes, Padilla, Salgado de Snyder (1991), for example, developed both immigrant and non-immigrant versions of the Hispanic Stress Inventory (HSI) to assess stress events across 6 life domains, including acculturation stress. In addition, culturally appropriate measures are now available to assess acculturation (Cuellar, Arnold, & Maldonado, 1995), biculturality (Cortés & Rogler, 1994), mental health (Cortés et al., 2007), and physical activity (Martinez, Ainsworth, & Elder, 2008).

One gap, however, in assessment science is the lack of measures of psychological status specific to minority group adolescents, more specifically Hispanic youth. In spite of the fact that

Hispanics now constitute the largest ethnic minority group in the U.S. (Census, 2007), a dearth of mental health and stress assessment instruments exist that are culturally tailored to meet the needs of this highly overlooked and understudies population (Cervantes, Cordova, Fisher & Kilp, 2008). The development of assessment tools aimed at Hispanic youth populations have largely been limited to translation and cultural adaptation (e.g., Eisen et al., 2010). The New Freedom Commission's (NFC) Final Report (Department of Health and Human Services [DHHS], 2003) affirms the need to eliminate disparities in behavioral health services, and expand and improve early mental health screening, assessment and referral in Hispanic populations. This study presents a factor analysis to determine the psychometric properties of the Hispanic Stress Inventory-Adolescent version, a psychosocial stress instrument developed specifically for Hispanic adolescents.

#### Purpose of the Study

This 2-phase study was aimed at developing and determining the psychometric properties of the Hispanic Stress Inventory-Adolescent Version (HSI-A), a culturally informed psychosocial stress assessment instrument. Based on previous studies by these investigators, this study specifically aimed to create and test item content in specific domains of live events stress and include assessment of both stressor event exposure and stress appraisal in the new assessment instrument. By including immigrant and Spanish speaking youth in each step of the sampling, we also expected to find unique immigration stressors, as well as stressors specific to the acculturation process.

#### Method

##### *Phase I: Generation of Item Pool*

An expert panel comprised of four recognized researchers in the field of Hispanic adolescent mental health was interviewed to determine current perspectives on Hispanic psychosocial stress domains and specific stressor events related to Hispanic minority status. These interviews were used in the construction of 1) Operational definitions of conceptual stress domains, and 2) development of the open-ended focus group interview guide. The interview guide consisted of six grand tour areas of inquiry and potential probes related to these broad areas. Specifically, each of the grand tour open-ended questions asked participants about stressful life experiences and difficulties. The six grand tour areas of inquiry were consistent with the conceptual domains and included: 1) immigration stress, 2) communication and language stress, 3) school and academic stress, 4) peer and intimate relationships stress, 5) family stress, and 6) social and economic stress.

Subsequent to the development of the interview guide, focus group methodology was implemented. Focus groups have been shown to be a powerful investigative tool to facilitate collection of rich data (Denzin & Lincoln, 2005; Patton, 2002). Moreover, focus groups gather large amounts of data in a relatively short frame, yet produce insights that would not be obtained through individual interviews or quantitative methods (Morgan, 1997; Stewart, Shamdasani, & Rook, 2007). Guidelines established by Umaña-Taylor and Bámaca (2004) and found effective with Hispanic populations were implemented in the study design.

### *Phase 1 Sample*

A total of N=170 youth participants were interviewed in 25 focus groups. Participants were recruited from middle schools, high schools and community-based clinical (i.e., behavioral health) programs in two research sites located in the northeast and southwest regions of the U.S., including Trenton, New Jersey (n=70), and Los Angeles, California, (n=100). A mixed stratified

sampling strategy was designed to elicit information about stressors that are relevant to a wide range of Hispanic adolescents from diverse cultural origins, both immigrant and non-immigrant. To be considered for this study, participants had to: (a) identify themselves as Hispanic or Latino, (b) be between the ages of 11 to 19 years old, and (c) give assent and provide parental consent. The exclusion criterion included those individuals who were identified as having more severe forms of adolescent mental health disorders such as developmental disorders (e.g., autism, mental retardation) and/or childhood/adolescent psychosis.

A descriptive analysis indicated that 42 % of the focus group participants were recruited from middle school, 35% from high school and 23% from clinics. The mean age of the sample was 14.8 (SD=2.20) years and more females (62%) than males (38%) participated in this study. The majority of the sample (52%) reported Mexico as their family's country of origin, followed by Guatemala (14%), and Puerto Rico (10%), respectively. The remainder of the sample's family country of origin included South America, Central American and Caribbean countries including Honduras, El Salvador, Costa Rica, and Ecuador. The majority of the participants were foreign born (52%). Sixty percent of the participants reported Spanish as their primary language, followed by bilingual (26%) and English (14%).

#### *Phase I Item Development*

Employing similar methods used in the development of the original HSI for adults (Cervantes et al., 1991), the first author along with trained research assistants identified salient stressor and appraisal coded text segments. A series of short statements that captured the meaning of the longer coded segments were developed in English in an easily comprehensible format. The first item development analytical procedure captured a full range of stressors and appraisals for both non-clinical and clinical adolescent groups. Next, the specificity of items for

each group, with sensitivity for age, gender and most importantly for immigration status differences, was identified. The salient and high frequency stress experience statements elicited were then reworded for inclusion in the HSI-A draft version.

The rating sheet data and response validity data were quantified as in the HSI adult content validity study (Cervantes et al., 1991). The content validity task asked two expert clinicians to assign each item into one of six conceptual domains by filling in a Content Validity Rating Form. The experts were instructed to simply assign the number of the one domain that they thought the item best fits under. Statistical analysis used Cohen's kappa index of inter-rater agreement to measure the extent of consensus among the judges (Cohen, 1960). This statistic is used when coding qualitative/ categorical variables and is considered to be an improvement over using percentage agreement to evaluate inter-rater consensus because it considers chance in the calculation. Kappa is the proportion of agreements after chance agreement has been excluded. Its upper limit is +1.00 (total agreement). If judges agree at a chance level,  $k = 0.00$ . A Kappa greater than 0.70 is considered satisfactory.

The research team evaluated the agreement among the two experts for each item and for the total scale. The researchers then constructed a data file making use of a weight variable to specify the counts for each cell in the 6 (Expert 1 rating) x 6 (Expert 2) contingency tables. The SPSS Count procedure reduced the total scale item data to a large contingency table that was input into the SPSS Crosstabs procedure where the kappa statistic was calculated. The Kappa was calculated on the basis of pair-wise contingency tables built from the responses of successive pairs of judges.

Expert 1 and Expert 2 had an agreement in rating of 75% of the total 160 items. The kappa index coefficient was .59 and highly statistically significant ( $p < .001$ ). On the basis of the

kappa analysis of Expert 1 and Expert 2, all of the scale items were retained. While the kappa was lower than the .70 convention used for inter-item reliability of existing scales, it was based only on two experts' ratings of scale items and highly statistically significant. Since we were dealing with a set of items generated from Hispanic adolescents themselves in a first phase of scale development, we concluded that the kappa was sufficiently high enough not to warrant further item exclusion at this phase of the scale construction process that would have undoubtedly increased the kappa magnitude. An item-level analysis of the patterns of disagreements also indicated that the operational definitions of some of the domains upon which the ratings were based could be sharpened. For example, there were 16 disagreements concerning whether to rate a given item in domain 5 (family stress) or domain 6 (social and economic stress).

*Phase II: Multi-site Sampling, Factor Analysis and Reliability Analysis of HSI-A*

The research design included four data collection sites that represent the diversity of the national Hispanic adolescent population: Los Angeles, Miami, El Paso, and Boston. The total research sample consisted of  $n=1,637$  Hispanic adolescents, ages 12 to 17. The sample was recruited from middle and high schools and clinics. The sampling methodology of random classroom selection of school homerooms was complemented by a sampling method of consecutive admissions into clinics in two of the sites (i.e., Los Angeles, Miami). The clinical subjects provided contrast groups for the validity analysis. These contrast groups consisted of adolescents with a diagnosis of a behavioral health disorder. The importance of this contrast group is that it provided clinicians with profiles of adolescents likely to present in clinical settings that can be compared with normal Hispanic adolescents. The use of a contrast group also increased the evidence-base supporting the scientific validity of the scale and will conform to

designs used in stress instrument development studies. A total of (n=140) clinical adolescent participants were sampled. In addition, in efforts to assess the psychometric properties of the HSI-A for a range of acculturation levels and immigrant responses, a total of (n=246) self-identified immigrant adolescents were sampled and included in the analysis.

### *Procedure*

Site data coordinators contacted and made arrangements with middle schools, high schools, and clinics (in Los Angeles and Miami only) to be included in the sampling frame. Each school was provided an orientation of the study and a classroom teacher roster was provided by each participating school. These rosters were then separated by grade level, and all 6<sup>th</sup> – 12<sup>th</sup> grade homeroom classrooms were assigned a consecutive number and then randomly selected within grade level using the SPSS Randomizer program. Once selected, each classroom teacher was provided a more detailed orientation by the site data coordinators and an informed parental consent form was distributed to each potential adolescent participant. Once all consent forms were returned, the data site coordinator scheduled the group data administration. This procedure was used for all school-based data collection.

Clinic based samples of convenience were selected at two sites. Consecutive adolescent outpatient admissions were provided with parental consent forms and upon return a group administration was scheduled and conducted. All youth participants in the clinic sample had met DSM-IV criteria for a diagnosed disorder.

### *Measures*

Participants completed the 160 item version of Hispanic Stress Inventory -Adolescent (HSI-A) items. For each stressor the participant was asked whether they had experienced the stressor (*Yes / No*). If participants reported experiencing a stressor, he or she was asked to rate

the appraised stressfulness of the event on a 5-point Likert scale (1= *Not at all worried / tense*; 2 = *A little worried / tense*; 3 = *Moderately worried / tense*; 4 = *Very worried/ tense*; 5 = *Extremely worried tense*). Where participants reported they had not experienced a stressor, the appraisal score was coded to 1 (*not at all stressful*). The factor analysis was performed on the appraisal scores.

To examine the validity of the HSI-A, participants also completed the Children's Depression Inventory (CDI; Kovacs & MHS Staff, 2003) and the Youth Self Report (YSR) portion of the Achenbach System of Empirically Based Assessment (ASEBA; Achenbach & Rescorla, 2001). The CDI is a 27-item self-report measure of depression, which has previously been used in Hispanic populations (Cowell, Gross, McNaughton, Ailey, & Fogg, 2005; Worchel et al., 1990). Missing data values were replaced with the mean of the remaining items. Where more than 10% of the items were missing, the case was excluded from the validity analysis. The total CDI score was calculated, along with scores on the 5 subscales (negative mood, interpersonal problems, ineffectiveness, anhedonia, negative self-esteem).

The YSR provides a measure of children's psychopathology. Cases where more than 8 items were missing were excluded from the validity analysis. The YSR total score was calculated, as well as 8 syndromes (anxious/depressed, withdrawn/depressed, somatic complaints, social problems, thought problems, attention problems, rule-breaking behavior, aggressive behavior) and the Internalizing and Externalizing groups of syndromes.

## Results

### *Demographic Characteristics*

A cross-sectional school survey was implemented in the 4 research sites. The demographics of the sample are presented in Table 1. The research sites were selected to afford a

sample that is representative of the heterogeneity of U.S. Hispanic adolescents in terms of nationality, generation status and geographic location. The sample represented at least 16 national origins, including Mexican (52.2%), Dominican (11.5%), Cuban (10.5%), and Puerto Rican (6.3%). The majority of the sample reported that they were born in the U.S. (84.2%), but that their mother (72.7%) and/or father (79.1%) was born outside the U.S. Participants were more likely to report speaking Spanish at home (30.1%) than with friends (3.7%). The sample ranged in age from 10 to 20 years of age ( $M = 14.8$ ,  $SD = 1.79$ ).

[INSERT TABLE 1 HERE]

Participants who did not identify as Hispanic were excluded from any further analysis ( $n = 81$ ). A small number of participants ( $n = 18$ ), did not self-report being Hispanic, but did indicate their race to be, for example, Mexican, or that the parents were Mexican, or reported speaking Spanish at home and experiencing stress due to being Hispanic. These participants were retained in the analysis. We wanted to create a tool that would be appropriate to all acculturation levels and that would capture immigration related issues, including those that affect non-immigrants. For that reason we determine to not separate immigrant from non-immigrant samples as was done in the original HSI adult development study.

#### *Item Relevance and Analysis*

Items were examined for relevance and were excluded from the factor analysis where less than 5% of the sample reported having experienced a stressor. Based on these exclusion criteria, 36 items were not included in further analyses. The data were also examined for completeness. Participants who did not complete 11 or more HSI-A appraisal items were excluded from further analysis ( $n = 377$ ).

The HSI-A items were examined for skewness. As expected, all items were found to be positively skewed. This is likely to reflect the nature of the measure and sample, and not a bias in the observed data; therefore we opted not to correct for skew. Instead, for the exploratory factor analysis, a principal factors extraction method was used as it does not assume a normal distribution (Recklitis et al., 2006). The exploratory factor analysis was performed on a correlation matrix with correlations between complete-item pairs. Two pairs of gender-specific items (e.g. "I got pregnant", "My girlfriend got pregnant") were combined into single items. Inter-item correlations were examined, and three items were deleted that had very similar item content and were highly correlated with other items ( $.74 < r < .87$ ).

#### *Exploratory Factor Analysis*

The item pool was subjected to exploratory principal factor analysis with the square of the multiple correlation coefficient (SMC) used to obtain preliminary estimates of communalities. Both orthogonal and oblique rotations were examined and factor solutions were compared for interpretability.

The decision to delete items from the item pool was based on several factors, including item loading, cross-loading and internal consistency. Items with factor loadings less than .32 on all factors were removed first. After several iterations of deleting items on the basis of low item loadings, items were deleted that had multiple loadings greater than .32 on two or more factors. Finally coefficient alphas were examined, and one item removed that reduced the internal consistency of a subscale. Through this iterative process the item pool was reduced from 121 items to 67 items. This pool of items was subjected to a final principal factor analysis using a promax rotation (see Table 2). A total of nine factors were extracted on the basis of Velicer's Minimum Average Partial (MAP) Test, eigenvalues greater than 1 and interpretability. These

nine factors accounted for 90.4% of item variance. The first factor, *Family Economic Stress* (13 items), reflects family financial struggles, including problems paying bills and having access to medical care. The second factor, *Acculturation Gap Stress* (10 items), includes items assessing intercultural and intergeneration conflict. The third factor, *Culture and Educational Stress* (10 items), includes stress experienced due to Hispanic culture not being recognized at school, racial tensions at school, and items reflecting family problems as a consequence of immigration. Factor 4, *Immigration-Related Stress* (8 items), reflects personal experiences of stress due to immigration. The fifth factor, *Community and Gang-Related Stress* (9 items), includes items relating to both personal experiences of violence and gangs, and stress related to violence in the community. Factor 6, *Marginalized* (4 items), reflects stress due to feelings of separation due to language or clothes, difficulty making friends and social isolation. The seventh factor, *Discrimination Stress* (6 items), includes experiences of bullying, racism and disrespect at school. The eighth factor, *Family, Drug/Legal Stress* (4 items), reflects stress associated with violence, drug use and criminal activity in the family. The final factor, *Family Immigration Stress* (3 items), reflects stress due to legal problems experienced by family members when immigrating. The factors were moderately correlated ( $.05 < r < .51$ ; see Table 2).

[INSERT TABLE 2 HERE]

### *Reliability*

Coefficient alphas were calculated to examine the internal consistency of the HSI-A subscales (Table 3). The Family Economic Stress subscale displayed the highest internal consistency ( $\alpha = .90$ ) and the Family, Drug/Legal Stress subscale had the lowest ( $\alpha = .67$ ). All of the HSI-A subscales exhibited acceptable estimates of internal consistency.

[INSERT TABLE 3 HERE]

*Validity Estimates*

Pearson correlation coefficients were calculated to examine the relation between the HSI-A total stress-appraisal score (the mean of all HSI-A items), HSI-A subscales and the CDI and YSR (Tables 4 and 5). The HSI-A total stress-appraisal score was positively correlated with the total CDI score ( $r = .48, p < .001$ ), indicating that higher appraisals of stress were associated with higher levels of depression. The total stress-appraisal score was most strongly associated with anhedonia ( $r = .45, p < .001$ ) and negative mood ( $r = .42, p < .001$ ). The HSI-A acculturation-gap subscale was most highly correlated with the CDI subscales ( $.22 > r > .40$ ).

The HSI-A total stress-appraisal score was positively correlated with the YSR total score ( $r = .50, p < .001$ ), and was more strongly associated with Internalizing ( $r = .51, p < .001$ ) than Externalizing ( $r = .39, p < .001$ ). The HSI-A total stress-appraisal score was most strongly associated with the anxious/depressed YSR syndrome scale ( $r = .49, p < .001$ ), followed by social problems ( $r = .47, p < .001$ ), attention problems ( $r = .43, p < .001$ ) and the withdrawn/depressed syndrome scale ( $r = .42, p < .001$ ). The Family Economic Stress, Acculturation-Gap Stress, Culture and Education Stress, and Marginalized HSI-A subscales were most strongly associated with anxiety and depression on the YSR. The HSI-A Immigration-Related Stress, Community and Gang-Related Stress, and Discrimination Stress subscales were most strongly associated with social problems on the YSR. The HSI-A Family, Drug and Legal Stress subscale was most strongly associated with aggressive behavior. Of the HSI-A subscales, the Acculturation-Gap subscale was most highly correlated with the YSR syndrome scales ( $.38 > r > .52$ ).

[INSERT TABLE 4 HERE]

[INSERT TABLE 5 HERE]

[INSERT TABLE 6 HERE]

### Discussion

This study aimed to systematically develop an instrument that would have high utility to both professionals and researchers who conduct research or practice with foreign-born and U.S.-born Hispanic adolescents. Specifically, this study aimed to establish the psychometric properties and factor structure of the HSI-A, a culturally-informed stress assessment specifically tailored to Hispanic adolescents. The development of the Hispanic Stress Inventory-Adolescent version draws heavily on previous work in the area of assessment in Hispanic populations (Cervantes et al., 1991).

Exploratory factor analysis procedures were implemented, testing the nine-factor model against two higher-order models. EFA yielded an interpretable nine-factor solution, with factors labeled Family Economic Stress, Acculturation-Gap Stress, Culture and Educational Stress, Immigration Related Stress, Community and Gang-Related Stress, Marginalized, Discrimination Stress, Family, Drug/Legal Stress, and Family Immigration Stress. This finalized 67 item version of the HSI-A is appropriate for use in clinical and research settings where there is a paucity of culturally informed assessment measures and tools available for professionals and scholars alike. Findings from the study suggest that appraisals of stress as measured by the HSI-A is associated with higher levels of psychopathology, behavioral and conduct problems, as well as higher levels of emotional disturbance among youth participants. Separately, many of the HSI-A subscales show unique relationships with particular behavioral and emotional syndromes. One sub-scale factor, Acculturation Gaps, appears to be one of the more robust measures of psychosocial stress in Hispanic adolescents with high scores corresponding to increased risk for childhood depression as measured Kovacs' Children's Depression Inventory. The role of acculturation gaps

and related problems among youth and their potential for increasing depression in this population is in need of much more study. Additionally, we noted that the Family Drug/Legal Stress subscale factor corresponded with increased reports of aggressive behavior, reinforcing previous research on the link between family instability, poor parenting practices and conduct related problems in Hispanic youth (Santisteban & Mena, 2009). Again, research into the nature of this relationship and the HSI-A's potential as a screening and early detection tool is needed. Culturally informed early screening and assessment with tools such as the HSI-A may prove beneficial to school personnel, as well as trained clinicians desiring more relevant diagnostic information for treatment planning purposes.

#### Limitations

The study has several limitations that merit attention. In Phase I, the study design consisted of a convenience sample and thus participants were not randomly selected. The study sample was also predominately of Mexican-origin and few participants represented Central and South America. Another limitation is that participants were recruited from two research sites, in contrast to four sites in the Phase II study design. With regard to Phase II study limitations, a limited number of Hispanic immigrant adolescents were recruited, relative to non-Immigrant. This may be in part because of the current sociopolitical and anti-immigrant climate. Nevertheless, recruiting a larger immigrant sample would be useful. Finally, the clinic-based sample was collected at two sites and consisted of a convenience sample. Notwithstanding these limitations, the study design aimed to recruit Hispanic adolescents from various ethnic backgrounds to represent the heterogeneous Hispanic adolescent U.S. population.

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Table 1. Participant Demographics

Variable	Total ( <i>n</i> = 1556)
Mean Age	14.8y (1.79 <i>SD</i> )
Sex of Subject	
Male	47.7% ( <i>n</i> = 739)
Female	52.3% ( <i>n</i> = 811)
Data collection site	
Los Angeles, CA	54.1% ( <i>n</i> = 842)
El Paso, TX	5.6% ( <i>n</i> = 88)
Miami, FL	20.6% ( <i>n</i> = 320)
Lawrence, MA	19.7% ( <i>n</i> = 306)
National origin	
Mexican / Mexican American	52.2% ( <i>n</i> = 793)
Central American	6.1% ( <i>n</i> = 93)
South American	2.8% ( <i>n</i> = 43)
Cuban	10.5% ( <i>n</i> = 159)
Puerto Rican	6.3% ( <i>n</i> = 95)
Dominican	11.5% ( <i>n</i> = 175)
Mixed	9.4% ( <i>n</i> = 142)
Other	1.2% ( <i>n</i> = 18)
Born in the U.S.	84.2% ( <i>n</i> = 1310)
Parent(s) born outside U.S.	85.7% ( <i>n</i> = 1302)
Language spoken at home	
English	23.4% ( <i>n</i> = 360)
Spanish	30.1% ( <i>n</i> = 463)



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**II. Acculturation-Gap Stress**

My parents were too traditional	.71
Parents overprotective	.66
Parents did not understand me	.61
Parents disapprove of friends	.57
No privacy at home	.42
Parents upset that I wanted to date outside my race /ethnicity	.41
Hard for me to speak with family	.39
Parents used different rules for daughters / sons	.37
Expected to do many chores at home	.36
Forgot some Spanish	.36

**III. Culture and Educational Stress**

School ignored cultural history	.69
Customs and holidays not recognized at school	.66
Had to translate personal information for parents	.52
Family was forced to migrate	.50
Racial tensions at school	.50
Family had to pay a lot of money to	.44

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 migrate

Arguments with non-Hispanic students	.41
Felt forced to be family translator	.37
Expected to fail by teachers	.37
Family started all over after migrating	.33

**IV. Immigration-Related Stress**

Left close friends in home country	.79
Thought about life in home country	.70
Separated from some family members	.69
Hard leaving people in home country	.67
Had to leave family behind in home country	.62
Saw more violence here than in home country	.40
Problems learning English	.38
Members of family "homesick"	.34

**V. Community and Gang-Related Stress**

Involved in physical fights	.57
A lot of fights at school	.49
Fought with other students	.48
Saw drive-by shooting	.48
Saw weapons at school	.47

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Labeled a trouble maker	.47
Neighborhood dangerous	.42
A lot of pressure to get involved with gangs	.41
Stereotyped as a gang member	.40
<b>VI. Marginalized</b>	
People were suspicious of me when I spoke Spanish	.75
Difficulty meeting friends	.70
Ridiculed because of clothes	.61
Pointed at and called names	.53
<b>VII. Discrimination Stress</b>	
Picked on by other students	.64
Students made racist comments	.61
Bullied by other students	.57
Students said racist things	.56
Not respected at school	.49
Disrespected by other students	.46
<b>VIII. Family, Drug/ Legal Stress</b>	
Family member had a drug problem	.61
Family member sold drugs	.55

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Family member arrested	.52
Violence in family	.51
<b>IX. Family Immigration Stress</b>	
Family had problems with immigration papers	.58
Family afraid of getting caught by immigration officials	.55
Family were caught when migrating	.52

Table 3. Summary of Coefficient Alphas, Means and Standard Deviations for Scores on the Hispanic Stress Inventory-Adolescent

	$\alpha$	Items	SUM	MEAN
HSI-A Total Stress-Appraisal Score		67	84.53 (23.09)	1.26 (.34)
Family Economic Stress	.90	13	17.40 (7.9)	1.34 (.61)
Acculturation-Gap Stress	.82	10	13.80 (5.71)	1.38 (.57)
Culture and Educational Stress	.85	10	11.53 (3.94)	1.15 (.39)
Immigration-Related Stress	.79	8	9.27 (3.38)	1.16 (.42)
Community and Gang-Related Stress	.76	9	11.45	1.27

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			(4.31)	(.48)
Marginalized	.77	4	4.77	1.19
			(2.23)	(.56)
Discrimination Stress	.79	6	7.13	1.19
			(2.92)	(.49)
Family, Drug/Legal Stress	.67	4	5.53	1.38
			(2.65)	(.66)
Family Immigration Stress	.68	3	3.69	1.23
			(1.84)	(.61)

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Table 4. Summary of intercorrelations of the Hispanic Stress Inventory-Adolescent and Children's Depression Inventory (CDI)

<i>N</i> = 943	CDI	CDI	CDI	CDI	CDI	CDI
	Total	Negative Self	Anhedonia	Ineffectiveness	Interpersonal	Negative Mood
HSI-A Total Stress- Appraisal Score	.48***	.37***	.45***	.37***	.26***	.42***
Family Economic Stress	.37***	.29***	.36***	.27***	.15***	.34***
Acculturation-Gap Stress	.43***	.32***	.39***	.33***	.22***	.40***
Culture and Educational Stress	.30***	.22***	.30***	.25***	.18***	.24***
Immigration-Related Stress	.20***	.15***	.22***	.15***	.08*	.17***
Community and Gang- Related Stress	.34***	.24***	.25***	.30***	.31***	.30***
Marginalized Discrimination Stress	.29***	.29***	.26***	.22***	.17***	.22***
Family, Drug/ Legal Stress	.34***	.31***	.32***	.22***	.20***	.28***
Family Immigration	.17***	.13***	.17***	.13***	.11**	.14***
	.13***	.08*	.13***	.11**	.06*	.11***

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Stress

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\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

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Family Immigration Stress	.23**	.21**	.21**	.17**	.16**	.21**	.16**	.20**	.19**	.17**	.21**
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*Note.* Int = Internalizing; Ext = Externalizing; I = Anxious/Depressed; II = Withdrawn/Depressed; III = Somatic complaints; IV = Social problems; V = Thought problems; VI = Attention problems; VII Rule-breaking behavior; VIII Aggressive behavior.

\**p* < .01. \*\**p* < .001.

Table 6. Inter-correlations between Hispanic Stress Inventory-Adolescent Subscales

<i>N</i> = 1179	1	2	3	4	5	6	7	8	9
1. Family Economic Stress	1.0								
2. Acculturation-Gap Stress	.51**	1.0							
3. Culture and Educational Stress	.50**	.48**	1.0						
4. Immigration-Related Stress	.28**	.26**	.34**	1.0					
5. Community and Gang-Related Stress	.38**	.45**	.47**	.20**	1.0				
6. Marginalized	.27**	.31**	.50**	.22**	.28**	1.0			
7. Discrimination Stress	.38**	.43**	.45**	.19**	.38**	.45**	1.0		
8. Family, Drug/ Legal Stress	.33**	.31**	.17**	ns	.28**	.09*	.19**	1.0	
9. Family Immigration Stress	.38**	.34**	.34**	.18**	.25**	.12**	.17**	.22**	1.0

*Note.* ns = non-significant.

\* $p < .01$ . \*\* $p < .001$ .