

# Development of the Stress of Immigration Survey

## *A Field Test Among Mexican Immigrant Women*

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The Stress of Immigration Survey (SOIS) is a screening tool used to assess immigration-related stress. The mixed methods approach included concept development, pretesting, field testing, and psychometric evaluation in a sample of 131 low-income women of Mexican descent. The 21-item SOIS screens for stress related to language, immigrant status, work issues, yearning for family and home country, and cultural dissonance. Mean scores ranged from 3.6 to 4.4 (a scale of 1-5, higher is more stress). Cronbach  $\alpha$  values were more than 0.80 for all subscales. The SOIS may be a useful screening tool for detecting high levels of immigration-related stress in low-income Mexican immigrant women.

**Key words:** immigration stress, Mexican immigrant women, stress

IN 2012, the United States was home to almost 41 million immigrants (13% of the total US population), most of whom were of Mexican origin<sup>1</sup>; more than 20 million were females, and more than one quarter (26%) of those who were female were of Mexican origin.<sup>2,3</sup> Thus, Mexican immigrant women constitute a significant and growing proportion of the US population. A 2008 Pew Hispanic Center survey reported that half of all adult Latinos agree that the situation for Latinos living in this country is worse than it was in the past, citing anti-immigrant sentiment as the biggest cause.<sup>4</sup> The survey found that a majority of Latinos worry about deportation either for themselves, family members, or close friends. In addition, perceived housing and job discrimination were major concerns. Prevailing immigration issues and anti-immigration policies are contributing to a myriad of psychosocial problems for immigrant Latinos and their families.<sup>5</sup> Accordingly, a literature review on

the associations between current polarization because of US immigration reform efforts and psychological stress and trauma called for further studies to identify risk factors among vulnerable Latino immigrants.<sup>6</sup>

A number of factors contribute to chronic elevated stress levels among Latina immigrant women, often referred to as immigration-related stress. Immigrant Latina women in the United States are more likely than non-Latina white women to live in poverty, have less formal education, and have limited or no health insurance.<sup>7,8</sup> Immigrant Latinas face additional stressors related to language barriers, family separation, employment uncertainties, poverty, discrimination, societal prejudices, and xenophobia stemming from national anti-immigrant sentiments.<sup>5,9</sup> Compared with US citizens who are fluent in English, immigrants reported poorer self-rated health, which was largely explained by stressors associated with language barriers and immigration.<sup>10</sup>

Among Latina immigrants, chronic immigration-related stress has been associated with greater psychological distress and depressive symptoms.<sup>11</sup> Several risk factors contribute to these mental health disparities. Fleeing poverty or civil unrest and abuses in their home countries,<sup>12</sup> many report prolonged psychological distress and trauma associated with relocation and separation from their families.<sup>13-15</sup> Immigration-related stressors can lead to declines in family cohesion, especially among undocumented Latinas.<sup>16,17</sup> Separation from their children places Latina immigrants at particularly high risk of depression.<sup>18</sup> In addition, less acculturated, low-income immigrant Latina women are at high risk of being victims of intimate partner violence, which, in turn is associated with posttraumatic stress disorder and major depression.<sup>19,20</sup>

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This study was funded by an award for Under-represented Faculty in Clinical and Translational research by UCSF Clinical and Translational Science Institute (CTSI) Strategic Opportunities Support (SOS) Program; an NIA grant no. 1 P30 AG15272 awarded to the Center for Aging in Diverse Communities and by a T32 NIH grant awarded to the UCSF School of Nursing.

The authors declare no conflict of interest.

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DOI: 10.1097/FCH.0000000000000088

The experiences of Mexican immigrants are unique and differ from immigrants originating in Spain or South America in several ways. Because of Mexico's contiguous proximity to the United States, Mexican immigrants more often enter the United States without proper immigration documentation; in 2004, 57% of all unauthorized migrants were born in Mexico.<sup>6</sup> A review article on the mental health of undocumented Mexican immigrants identified the following factors, which elevate their risk of stress, depression, and poor mental health: failure to succeed in the country of origin, dangerous border crossings, limited resources, restricted mobility, marginalization/isolation, blame/stigmatization, guilt/shame, and vulnerability/exploitability.<sup>21</sup> Compared with documented Latina immigrants, undocumented Latina immigrants reported greater distress because of separation from family, challenges to traditional family values, poverty, and language difficulties.<sup>22,23</sup> With heightened immigration enforcement in recent years,<sup>12</sup> fear of deportation is particularly strong, even among those with legal documentation in the United States.<sup>7,24,25</sup> Finally, immigrants from South America demonstrated occupational and income attainment similar to Cubans, whereas those of Mexicans and Central Americans were substantially lower.<sup>23</sup>

Compared with their Latino male counterparts, immigrant Latinas report higher psychological distress and worse physical health.<sup>26</sup> Even when they return to Mexico, Mexican women immigrated to the United States continue to be at higher risk of depressive symptoms and anxiety than Mexican women without a migration experience.<sup>27</sup> Immigrant Latina women experience greater stressful change associated with family and personal issues during migration than their male counterparts.<sup>28</sup> These higher levels of distress could be associated with traditional sex roles in which Latinas assume a subordinate role to Latino men such that their psychosocial needs often go unvoiced and undetected.

Because of their relatively higher levels of chronic immigration stress, the unique nature of their immigration experiences, their psychosocial health disparities, and their lower socioeconomic status, a valid screening tool for immigration-related stress among low-income Mexican immigrant women is warranted. Although several immigration-related stress measures are available, few have been designed with the unique needs of Mexican immigrants in mind.<sup>29</sup> To be appropriate, measures need to focus on stressors related to the immigration experience rather than on stressors related to being a minority in the United States and measures need

to address the stress associated with the current US anti-immigrant climate.

In considering existing measures, we found several measures that were in part relevant to our population group of Mexican immigrants. Three were designed to assess specific stressors or demands related to being an immigrant, including: the Demands of Immigration Scale (DOIS),<sup>30</sup> the Barcelona Immigration Stress (BIS) Scale,<sup>31</sup> and the Border Community Immigration Stress (BCIS) Scale.<sup>32</sup> However, these measures were designed to assess immigration stress experienced by individuals in contexts that differ from those associated with the pre- and postmigration experience of lower-income Mexicans who immigrate to the United States. For example, the DOIS focuses on European and former Soviet Union immigrants living in the United States who had legal refugee status and relatively high levels of education. The BIS was designed to assess stress among Latino immigrants living in Spain and the Canary Islands where Spanish is the official language. The BCIS was designed to measure immigration stress among Mexican immigrants living in a specific region along the US Mexico border and may not completely capture or be relevant to stressors experienced by Mexican immigrant women living in other US regions away from border areas. For example, items in the BCIS relating to stress because of possible encounters with "coyotes and polleros" (guides and human smugglers) and/or immigration authorities may not be as relevant to Mexican immigrant women living in areas farther removed from the US-Mexican border. Furthermore, the BCIS has not been validated in other nonborder Mexican immigrant populations. Thus, the aim of this study was to develop the Stress of Immigration Survey (SOIS) using mixed methods and assess its psychometric properties through a field test among a sample of adult Mexican immigrant women living in Northern California.

## METHODS

### Conceptual framework

Our aim was to capture the multidimensional aspects of immigration experienced particularly by low-income Mexican immigrant women who do not live in border towns. We used 4 sources to develop the conceptual framework and the draft survey for the SOIS: the literature related to stress among US Latino immigrants, relevant components of existing immigration stress measures,<sup>30-32</sup> our prior research with Latina transnational mothers (ie, women who migrate leaving their children back in their home countries and mother from afar),<sup>33</sup>

and our clinical experience with low-income Latinos, in particular with Mexican women.<sup>34</sup>

Stress is a cognitive appraisal defined as a situation in which external demands exceed the adaptive resources of the individual.<sup>35,36</sup> Immigration stress refers to psychological strain or distress responses to immigration-related challenges that people encounter as they adapt to life in a new country.<sup>7</sup> Immigration stress is a multidimensional construct consisting of functionally related behaviors, attitudes, processes, and experiences.<sup>37,38</sup> It can be acute (eg, a response to a relatively intense life event such as a dangerous clandestine migratory process) or chronic (eg, ongoing stress related to documentation status). Thus, immigration stress encompasses difficulties adjusting to the new country, family separation, language barriers, poverty, and perceptions of ethnic and racial discrimination.<sup>31,39</sup>

On the basis of the literature and existing Latino immigrant stress measures, our framework contained initially concepts of language, immigration status, employment, family and culture, and life in the United States. The concepts of language, work, family, and life in the United States were drawn from the literature and from the work of Aroian et al.<sup>30</sup> and Carvajal et al.<sup>32</sup> The concepts of immigration status and discrimination emerged from the literature and from the work of Carvajal et al.<sup>32</sup> Although some domains overlap between the BCIS and the SOIS (language, discrimination at work, immigration status, and limited contact with family), the names of domains and specific items used

to assess these domains in the SOIS were modified on the basis of the results of qualitative interviews with Mexican immigrant women living in Northern California. These interviews explored sources of immigration stress, as well as cognitive testing of wording used by participants to describe these domains. On the basis of these qualitative interviews, the framework was modified to include 5 concepts (described next) and item wording reflected content described by women during the interviews.

Our conceptual framework of immigration stress includes 5 broad subscales: (1) limited English proficiency, (2) lack of legal immigrant status, (3) disadvantages in the workplace, (4) yearning for family and home country, and (5) cultural dissonance with the United States. Definitions for the 5 subscales are provided in Table 1. The SOIS was designed as a brief screening tool that can be used to assess immigration-related stress in low-income, immigrant women of Mexican descent.

### Survey development

A draft survey containing 29 items was developed in which each of the 5 subscales was represented by several items. The questionnaire was developed in English and then translated into Spanish by 3 bilingual investigators from Chile, Mexico, and Cuba. The initial 29-item survey was pretested with 14 Spanish-speaking Mexican immigrant women using cognitive pretest interview methods.<sup>40,41</sup> Cognitive interviews were conducted face to face in Spanish using scripted and spontaneous probing of items

**TABLE 1. Conceptual Framework of the Stress of Immigration Survey**

Domain (# of Items)	Definition
Limited English proficiency (3)	Stress because of limited English proficiency and its adverse effects on employment opportunities and ability to do things for the family and enjoy life in the United States
Lack of legal immigrant status (5)	Stress because of lack of legal immigration status and associated factors: fear of deportation; limited employment opportunities; inability to obtain a driver's license and health insurance, travel outside the United States to visit family, and meet the material needs of the family
Disadvantages in the workplace (4)	Stress because of inability to compete with Americans in the workplace; secure a job with benefits, including health insurance, time off when needed, sick days, vacation, and advancement opportunities
Yearning for family and home country (3)	Stress because of missing family and friends in home country; feeling sad and emotional when thinking about life in home country; inability to enjoy cultural traditions of home country
Cultural dissonance with the United States (7)	Stress because of difficulty with learning how to do things in the United States; facing new situations and circumstances in the United States; raising children in the United States; family conflict because of cultural differences in the United States; discrimination and treatment as a second-class citizen; Americans thinking you do not belong in their country; and feeling this is not your country

and phrases and concurrent think aloud techniques (respondents verbalize their thought processes as they are answering the items). Participants received a \$40 gift card for their time and effort. Pretest interview participants were recruited through San Francisco Bay Area community-based organizations with the assistance of promotoras (community health workers). Participants were recruited from a low-income, predominately Mexican community in Northern California. Inclusion criteria for participants in the cognitive interviews were: (1) self-reported Latina immigrant female from Mexico, (2) age 18 years and more, (3) living in the United States 1 year or longer.

Respondents' comments were aggregated by item and reviewed by the research team, which had extensive experience developing self-report surveys in diverse populations.<sup>42,43</sup> The team discussed the comments and reached consensus on whether to drop, modify, or retain the original item. Initially, the response format consisted of a 5-point scale (1 = no stress, 2 = a little stress, 3 = moderate stress, 4 = a lot of stress, and 5 = severe stress), with instructions to circle the number under the word that best describes the level of immigration stress they experienced in the past 3 months (timeframe adopted in other immigration stress measures such as the DOI and the BCIS). Nearly all pretest respondents were confused by having to circle numbers associated with labels, which required extensive explanation and guidance. Thus, we changed the response format to a modified visual analogue scale that used a 1 to 5 numbered scale of histograms with labels describing stress intensity (0 = not applicable, 1 = no stress, 2 = a little stress, 3 = moderate stress, 4 = a lot of stress, and 5 = severe stress) adapted from Lorig and colleagues<sup>44</sup> and shown in Appendix. In addition, the stem was repeated for every item (eg, "In the past 3 months, how much stress or worry have you experienced..."). Although redundant, repeating the stem was necessary to keep participants focused on quantifying their level of stress. Seven items were found to be redundant and were revised. Each item was reworded to be consistent with similar existing items. On the basis of pretest results, a revised SOIS emerged with 22 items and 5 subscales, to be administered in the field test (Appendix).

### Field test sample

For the field test, a sample of Mexican immigrant women was recruited through flyers posted in community organizations serving predominantly low-income Mexican women, supplemented with snowball sampling methods. Eligibility criteria for the field test were the same as for cognitive interview

pretesting and designed to identify by self-report women who were: (1) low-income, (2) Latina immigrant from Mexico, (3) age 18 years and more, and (4) living in the United States 1 year or longer.

Interviews were conducted between winter 2012 and spring 2013 by the principal investigator (PI) and 2 trained promotoras; they were conducted in local restaurants, coffee shops, and in participants' homes according to their preference. Participants completed a 15-item demographic questionnaire, the 22-item SOIS, and the 14-item Perceived Stress Scale (PSS) questionnaire.<sup>35</sup> The method of administration was personal interview in which the interviewer provided a brief description of the questionnaire and answered any questions as the participants completed the survey. Participants received a \$25 gift card for their time and effort. A random sample of 20 participants was reinterviewed in person by the PI and the trained promotoras at the participant's home approximately 2 weeks later (17 days after the first administration, on average) to examine test-retest reliability. Written informed consent to participate was obtained and study procedures were approved by the University of California San Francisco Committee on Human Research.

### Data analysis

The hypothesized 5-factor measurement model was defined by clustering the 22 SOIS items within the 5 sub-subscales of the conceptual framework. A confirmatory factor analysis (CFA) of the hypothesized measurement model was fit via maximum likelihood using LISREL 8.72.<sup>45</sup> Model goodness of fit was assessed by examining Satorra-Bentler scaled chi-square goodness-of-fit test statistics,<sup>46,47</sup> the root mean square error of approximation (RMSEA),<sup>48,49</sup> the comparative fit index (CFI),<sup>46</sup> and the standardized root-mean-square residual (SRMR). Generally, significant chi-square tests indicate lack of "exact fit." Pairwise combinations of RMSEA values below 0.06, CFI values above 0.95, and SRMR values below 0.08 suggest approximate model fit.<sup>50</sup> Empirical model modifications were guided by LISREL's modification indices. Finally, we tested a CFA model where the 5 SOIS factors defined a single, second-order factor. For CFA modeling, multiple imputation was used to accommodate missing SOIS item values (6.3% all data points).

Participant SOIS scale scores for each factor were created as the mean of corresponding nonmissing items: possible scale scores ranged from 1 to 5, with higher scores indicating more stress. Descriptive analyses of the survey data assessed the mean, standard deviation, and range for each item in the SOIS. Internal consistency reliability of SOIS scales

was assessed with Cronbach  $\alpha$ . Two-week test-retest reliability was examined by estimating correlations between administrations for each person completing the second assessment. To examine convergent validity, we examined correlations between each of the SOIS scales and a 7-item modified version of Cohen's PSS<sup>35</sup> consisting of only the negatively worded items in the PSS (upset because of something unexpected, unable to control important things, felt nervous and stressed, felt that could not cope with all the things you had to do, being mad and feeling out of control, thinking about unfinished things, and difficulties were piling up so that could not overcome them). Consistent with results from another study conducted in Latinas,<sup>51</sup> the validity of the full 14-item PSS was not supported in our sample. Only the modified PSS with the negatively worded items had excellent psychometric properties (item-scale correlations corrected for overlap ranging from 0.50 to 0.67; Cronbach  $\alpha$  of 0.82); therefore, this was the version used in the present study.

## RESULTS

For the field test, 138 potential participants were identified. Of the 138 women approached by the PI and promotoras, 2 were ineligible because they were not immigrants. Five declined to participate, 3 expressed how they did not like answering questions related to immigration, and 2 simply declined to partake in the study. The final analytic sample for the SOIS field test consisted of 131 Spanish-speaking community dwelling low-income Mexican immigrant women. Twenty participants completed the SOIS a second time. The survey required less than 15 minutes to administer.

Mean age of women was 35 years (standard deviation = 11.0; range = 18-75 years) and mean number of living in the United States was 9.2 years (standard deviation = 4.2; range = 1-35 years). The majority of the sample was married, had children, was undocumented, and unemployed, had less than a high school education, spoke primarily Spanish, and had no health insurance (Table 2).

The initial confirmatory analysis of the hypothesized measurement model suggested good approximate model fit:  $\chi^2_{SB}(199) = 314.75, P < .001, RMSEA = 0.067, CFI = 0.983, SRMR = 0.082$ . Modification indices suggested that one item assigned to Factor 4 (*yearning for family and home country*) in the hypothesized model was also strongly related to Factor 5 (*cultural dissonance with the United States*): "How much stress or worry have you experienced because you feel that you cannot enjoy your cultural traditions here the way that you could in your country?" A revised model suggested the item had nearly equivalent standardized

**TABLE 2. Sociodemographic Characteristics of Mexican Immigrant Women Participating in SOIS Field Test, Northern California (N = 131)**

Characteristic	n (%)
Age, y	
<25	15 (11)
25-39	83 (63)
40-59	28 (21)
≥60	5 (4)
Duration in the United States, y	
1-4	4 (3)
5-9	86 (66)
10-19	35 (27)
≥20	4 (3)
Marital status: married	88 (67)
Has children	120 (92)
Immigration status: unauthorized	101 (77)
Level of education	
Less than high school	99 (76)
Completed high school	15 (11)
Some college	9 (7)
Completed college or higher	4 (3)
Country where attended school	
Mexico	110 (84)
The United States	2 (2)
Both Mexico and the United States	15 (11)
Primary language spoken at home	
Spanish	123 (94)
Both English and Spanish	6 (5)
Employed	
Yes	43 (33)
No	82 (63)
Health insurance	
Yes	45 (34)
No	86 (66)
People living at home, n	
2-4	65 (50)
5-8	60 (46)
>8	5 (4)

factor loadings on the 2 factors (0.48 and 0.45, respectively):  $\chi^2_{SB}(198) = 291.60, P < .001, RMSEA = 0.060, CFI = 0.986, SRMR = 0.066$ . A subsequently revised first-order model dropped that item, resulting in a modified 21-item SOIS instrument:  $\chi^2_{SB}(179) = 260.08, P < .001, RMSEA = 0.059,$

CFI = 0.987, SRMR = 0.067. Finally, the second-order model of the 21-item SOIS instrument also demonstrated good approximate model fit:  $\chi^2_{SB}(184) = 271.61, P < .001, RMSEA = 0.061, CFI = 0.986, SRMR = 0.071$ . Furthermore, the fit of the second-order model did not significantly differ from that of the 21-item first-order model, providing additional support for the second-order factor structure,  $\Delta\chi^2_{SB}(5) = 8.92, P = .112$ .<sup>52</sup> Standardized factor loadings from the second-order model are presented in Table 3.

To calculate scale scores for each of the 5 first-order factors, we averaged items within each scale with responses from 1 (no stress) to 5 (severe stress) (item groupings are shown in Table 3). The scale scores thus ranged from 1 to 5, with higher scores indicating more stress. No items required reversing before averaging. The creation of an SOIS total score was calculated by averaging all 21 items. In addition, the 5 items with the strongest loading on each of the 5 first-order factors were aggregated to create a 5-item SOIS Short Form measure. The complete 21-item SOIS can be found in Appendix, and items included in the Short Form are indicated in Table 3 and Appendix.

Correlations between scale scores ranged from a low of  $r = 0.32$  for the association between *yearning for family* and *limited English proficiency*, to  $r = 0.75$  for *lack of legal immigrant status* and *disadvantages in the workplace*. Mean (standard deviation) scores on the 5 SOIS scales ranged from 3.61 (1.07) for *cultural dissonance with the United States* to 4.40 (1.03) for *yearning for family and home country*, indicating that stress levels were fairly high (1 = no stress, 5 = severe stress) (Table 4). Cronbach  $\alpha$ s for all 5 scales exceeded 0.80, indicating excellent internal consistency reliability. The 2-week test-retest reliability of the 5 scale scores, tested with 20 participants, ranged from 0.92 to 0.97 demonstrating good consistency.<sup>53</sup> The correlations between each of the scales and the modified PSS were all significant and positive as hypothesized, ranging from  $r = 0.20$  to  $r = 0.40$ , supporting the convergent validity of the SOIS scales.

The 5-item SOIS Short Form was positively correlated with the total score SOIS ( $r = 0.96$ ) and with each of the SOI scales, with correlations ranging from  $r = 0.68$  to  $r = 0.86$ .

## DISCUSSION

The SOIS is a new, brief, easy-to-administer screening tool designed to assess stress among low-income, immigrant women of Mexican descent living in the United States. In the field test conducted among adult Mexican immigrant women, the SOIS demonstrated excellent psychometric

properties, providing confirmatory evidence that the instrument measures the hypothesized constructs conceptualized as 5 distinct sources of immigrant stress: *limited English proficiency, lack of legal immigrant status, disadvantages in the workplace, yearning for family and home country, and cultural dissonance with the United States*. Findings suggest that the SOIS successfully captures constructs useful to clinicians and investigators interested in measuring stress levels among Mexican immigrant women and the unique factors that contribute to their elevated levels of stress.<sup>14</sup>

Similar to our study, others have documented the relatively high levels of immigrant stress and the associations of these stressors with poorer physical and mental health of Latino immigrants.<sup>7,32,54</sup> Latina immigrants who are experiencing high levels of stress and depressive symptoms may present in primary care settings with a variety of problems and complaints that are not always articulated in ways that are clear to clinical providers (eg, somatization of distress).<sup>55,56</sup>

The SOIS can assist clinicians and other health care providers with recognition of specific stressors related to their experience as an immigrant. By applying the SOIS, we can gain an improved understanding of the ways in which psychological stress is experienced and understood in the specific cultural context of immigrant Latinas in the United States.<sup>57</sup> Administering the SOIS could facilitate a dialog between clinicians or mental health professionals and Latina immigrants about their immigration experiences and enable the optimal provision of mental health services to address these factors.<sup>58</sup>

Although others have identified similar domains of immigrant stress, this study seeks to draw attention to these issues, document their persistence, and develop a relevant screening tool that clinicians and social service providers might use to identify women at increased risk of poor psychosocial outcomes. Time-constrained primary care visits, especially in the context of language barriers, may require longer visits, making our screening tool relevant.<sup>59</sup> Screening for specific stressors related to immigration can promote patient-provider communication about these risk factors and improve the cultural appropriateness and quality of health care.<sup>60-62</sup> By applying the SOIS, we can gain an improved understanding of the ways in which psychological stress is experienced and understood in the specific cultural context of low-income Mexican immigrant women in the United States.<sup>57</sup>

Further validation studies of the SOIS are warranted, including the Short Form version. Although we included only Mexican-origin immigrant women, the measure may be appropriate for other

**TABLE 3. Standardized Factor Loadings From the Second-Order SOIS Factor Model**

Items <sup>a</sup>	First-Order Factors				
	Factor 1: Limited English Proficiency	Factor 2: Lack of Legal Immigrant Status	Factor 3: Disadvantages in the Workplace	Factor 4: Yearning for Family and Home Country	Factor 5: Cultural Dissonance With the United States
1. You do not speak English well enough to get a good job and to do important things for yourself and your family	0.79				
2. You cannot communicate in English well enough to enjoy life in this country (SF <sup>b</sup> )	0.91				
3. You feel that speaking and understanding English is very difficult	0.81				
4. You or your family might be deported		0.59			
5. You cannot get a driver's license because you do not have the right documents		0.74			
6. Documentation problems keep you from getting the things you need for you and your family (SF <sup>b</sup> )		0.77			
7. Documentation problems keep you from getting the health care that you need for you and your family		0.76			
8. Documentation problems make it difficult for you to visit your country		0.69			
9. You do not have a job with benefits such as health insurance			0.83		
10. You do not have a job where you can take time off when you need it (sick days or vacation) (SF <sup>b</sup> )			0.88		
11. You are not able to advance or get a promotion in your job			0.81		
12. You cannot compete with Americans in your workplace			0.80		
13. You miss your family and friends back in your home country				0.87	
14. You feel emotional and sentimental when thinking of your life back in your country (SF <sup>b</sup> )				0.99	

(continues)

**TABLE 3. Standardized Factor Loadings From the Second-Order SOIS Factor Model (Continued)**

Items <sup>a</sup>	First-Order Factors				
	Factor 1: Limited English Proficiency	Factor 2: Lack of Legal Immigrant Status	Factor 3: Disadvantages in the Workplace	Factor 4: Yearning for Family and Home Country	Factor 5: Cultural Dissonance With the United States
15. How hard it is to learn how to do things here in the United States (such as signing up your child for school or registering your car)					0.76
16. You feel it is hard to face new situations and circumstances here in the United States (such as renting an apartment)					0.75
17. You feel it is hard to raise children in the United States					0.79
18. You feel that cultural differences in the United States are causing conflicts within your family					0.74
19. You feel people discriminate against you and you are treated as a second-class citizen					0.78
20. You feel Americans think that you do not really belong in their country (SF <sup>b</sup> )					0.86
21. You feel this is not your country although you live here	0.67	0.93	0.93	0.67	0.82
Loadings of first-order factors on second-order factor					0.79

<sup>a</sup>Stem for all items: "In the past 3 months, how much stress or worry have you experienced because (of)..."; response options were 1 = no stress, 2 = a little stress, 3 = moderate stress, 4 = a lot of stress, and 5 = severe stress.

<sup>b</sup>The item is part of the 5-item Short Form. The following item was dropped: "How much stress or worry have you experienced because you feel that you cannot enjoy your cultural traditions here the way that you could in your country?" It was originally assigned to Factor 4 in the conceptual model. Empirical results suggested standardized cross-loadings of nearly equivalent magnitude on Factors 4 and 5 (0.48 and 0.45, respectively).



**TABLE 4. SOIS Descriptive Statistics, Internal Consistency, 2-Week Test-Retest Reliability, Item-Scale Correlations, and Correlations With Modified Perceived Stress Scale**

Scales (# of Items) <sup>a</sup>	Mean (Standard Deviation)	Observed Range	Internal Consistency Reliability: Cronbach $\alpha$	2-wk Test-Retest Reliability <sup>b</sup>	Range of Item-Scale Correlations	Correlations With Modified Perceived Stress Scale
Limited English proficiency (3)	3.78 (1.11)	1-5	0.88	0.96	0.72-0.83	0.25 <sup>c</sup>
Lack of legal immigrant status (5)	4.12 (1.03)	1-5	0.81	0.94	0.51-0.64	0.18 <sup>d</sup>
Disadvantages in the workplace (4)	3.79 (1.26)	1-5	0.90	0.92	0.74-0.84	0.30 <sup>c</sup>
Yearning for family and home country (2)	4.40 (1.03)	1-5	0.93	0.97	0.87	0.19 <sup>c</sup>
Cultural dissonance with the United States (7)	3.61 (1.08)	1-5	0.92	0.94	0.70-0.81	0.40 <sup>c</sup>
Summary (total) score (21)	3.87 (0.92)	1-5	0.94	0.97	0.43-0.76	0.35 <sup>c</sup>
Short Form (5)	3.96 (0.98)	1-5	0.79	0.94	0.46-0.68	0.36 <sup>c</sup>

<sup>a</sup>Possible range is 1 to 5, with a higher score indicating more stress.

<sup>b</sup>Tested in a random subsample of 20 women.

<sup>c</sup> $P < .01$ .

<sup>d</sup> $P < .05$ .

Latino national-origin groups or Latino men. Our work makes a substantial contribution because accurate assessment of stressors in Latino immigrant groups can identify the nature of needed interventions to help preserve their health and avoid long-term effects of cumulative immigration stress.<sup>12</sup> This new measure facilitates our ability to study the health effects of immigration stress and to develop appropriate interventions for Mexican women living in the United States, the largest female immigrant group in this country.

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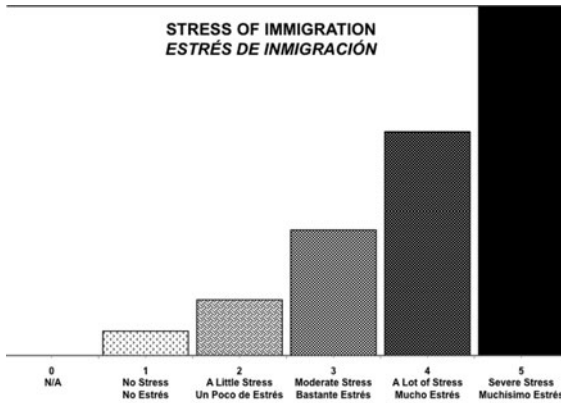
## APPENDIX

### 21-Item Stress of Immigration Survey in English and Spanish

#### Stress of Immigration Survey

**Estrés de Inmigración.** Below you will find a list of questions about being an immigrant in the United States. Please write the number that indicates the level of stress or worry that you have felt in the past 3 months.

*Abajo usted encontrará preguntas relacionadas con su experiencia como inmigrante en los Estados Unidos. Por favor escriba el número que corresponda al nivel de estrés o preocupación que haya sentido en los últimos 3 meses.*



- How much stress or worry have you experienced because you do not speak English well enough to get a good job and to do important things for yourself and your family?  
*¿Cuánto estrés o preocupación le ha causado el que usted no hable inglés lo suficientemente bien como para encontrar un buen trabajo y realizar cosas que son importantes para su familia?*
- How much stress or worry have you experienced because you cannot communicate in English well enough to enjoy life in this country? (SF)  
*¿Cuánto estrés o preocupación le ha causado el que usted no pueda comunicarse en inglés suficientemente bien como para poder disfrutar de la vida en este país?*
- How much stress or worry have you experienced because you feel that speaking and understanding English is very difficult?  
*¿Cuánto estrés o preocupación le ha causado el que a usted le resulta muy difícil hablar y entender inglés?*

- How much stress or worry have you experienced because you are worried that you or your family might be deported?  
*¿Cuánto estrés o preocupación le ha causado el que usted o un miembro de su familia puedan ser deportados?*
- How much stress or worry have you experienced because you cannot get a driver's license because you do not have the right documents?  
*¿Cuánto estrés o preocupación le ha causado el que usted no pueda tener una licencia para conducir porque no tiene documentos (papeles)?*
- How much stress or worry have you experienced because documentation problems keep you from getting the things that you need for you and your family? (SF)  
*¿Cuánto estrés o preocupación le ha causado el que usted tenga problemas por falta de documentos (papeles) y no pueda obtener las cosas que usted y su familia necesitan?*
- How much stress or worry have you experienced because documentation problems keep you from getting the health care that you need for you and your family?  
*¿Cuánto estrés o preocupación le ha causado el que a usted sin documentos (papeles) le sea difícil conseguir los cuidados de salud que necesita para usted y su familia?*
- How much stress or worry have you experienced because documentation problems make it difficult for you to visit your country?  
*¿Cuánto estrés o preocupación le ha causado el que los problemas de documentos (papeles) hacen que usted no pueda viajar a su país?*
- How much stress or worry have you experienced because you do not have a job with benefits like health insurance?  
*¿Cuánto estrés o preocupación le ha causado el que usted no tenga un trabajo que ofrezca seguro de salud?*
- How much stress or worry have you experienced because you do not have a job where you can take time off when you need it (sick days or vacation)? (SF)  
*¿Cuánto estrés o preocupación le ha causado el que usted no tenga un trabajo que ofrezca beneficios, como días libres si esta enferma (o) o si necesita tomar tiempo libre como vacaciones?*
- How much stress or worry have you experienced because you are not able to advance or get a promotion in your job?

- ?‘Cuánto estrés o preocupación le ha causado el que usted sienta que no puede avanzar o subir de posición en su trabajo?’
12. How much stress or worry have you experienced because you cannot compete with Americans in your workplace?  
?‘Cuánto estrés o preocupación le ha causado el que usted sienta que en su trabajo no puede competir con los americanos?’
13. How much stress or worry have you experienced because you miss your family and friends back in your home country?  
?‘Cuánto estrés o preocupación le ha causado el que usted extraña a la familia y amigos que dejó en su país?’
14. How much stress or worry have you experienced because you feel emotional and sentimental when thinking of your life back in your country? (SF)  
?‘Cuánto estrés o preocupación le ha causado el que usted se sienta triste cuando piensa en su país y extraña la vida en su país?’
15. How much stress or worry have you experienced because of how hard it is to learn how to do things here in the United States (such as signing up your child for school or registering your car)?  
?‘Cuánto estrés o preocupación le ha causado el que usted sienta que es difícil aprender como es el sistema en los Estados Unidos? (como inscribir a los niños en la escuela o como registrar el carro, por ejemplo)’
16. How much stress or worry have you experienced because you feel it is hard to face new situations and circumstances here in the United States (such as renting an apartment)?  
?‘Cuánto estrés o preocupación le ha causado el que usted sienta que es difícil enfrentarse a situaciones nuevas aquí? (como alquilar un apartamento, por ejemplo)’
17. How much stress or worry have you experienced because you feel it is hard to raise children in the United States?  
?‘Cuánto estrés o preocupación le ha causado el que usted sienta que es difícil criar hijos en los Estados Unidos?’
18. How much stress or worry have you experienced because you feel that cultural differences in the United States are causing conflicts within your family?  
?‘Cuánto estrés o preocupación le ha causado el que usted sienta que las diferentes costumbres y creencias están causando problemas en su familia?’
19. How much stress or worry have you experienced because you feel people discriminate against you and you are treated as a second-class citizen?  
?‘Cuánto estrés o preocupación le ha causado el que usted sienta que aquí le tratan como si fuera una persona inferior o de segunda clase y que la gente le discrimina?’
20. How much stress or worry have you experienced because you feel Americans think that you do not really belong in their country? (SF)  
?‘Cuánto estrés o preocupación le ha causado el que usted sienta que los americanos no crean que usted realmente pertenece a este país?’
21. How much stress or worry have you experienced because you feel that this is not your country although you live here?  
?‘Cuánto estrés o preocupación le ha causado el que usted sienta que éste no es su país aunque viva aquí?’
- Note: SF indicates that the item is part of the 5-item Short Form.