The Border Community & Immigration Stress Scale: A Preliminary Examination of a
Community Responsive Measure in Two Southwest Samples

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RUNNING HEAD: Border Stressors

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ABSTRACT

Background: Understanding contemporary socio-cultural stressors may assist educational,

clinical and policy-level health promotion efforts. This study presents descriptive findings on a

new measure, the Border Community & Immigration Stress Scale (BCISS).

Methods: The data were from two community surveys as part of community based participatory projects conducted in the Southwestern US border region. This scale includes stressful experiences reflected in extant measures, with new items reflecting heightened local migration pressures and health care barriers.

Results: Stressors representing each main domain, including novel ones, were reported with frequency and at high intensity in the predominantly Mexican-descent samples. Total stress was also significantly associated with mental and physical health indicators.

Discussion: The study suggests particularly high health burdens tied to the experience of stressors in the US border region. Further, many of the stressors are also likely relevant for other communities within developed nations also experiencing high levels of migration.

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There is a long history of behavioral and allied health sciences research examining social and contextual sources of stress and its impact on well-being. The current investigation reports on a new measure of stress in response to particular challenges associated with the US-Mexico border. Descriptive data on this scale was derived from survey components of two border-area community-based projects investigating social environmental determinants of health and multi-level intervention strategies[1] to address them.

Themes and paradigms from extant social and acculturative stress literature in part guided the current investigation. First, the experience of stressful event has an objective component (e.g., did the event occur) and a subjective component (the same event may have a different impact on different persons); both are expected to contribute to stress and health relationships.[2] Second, the experience of many stressors is context specific, and may depend on many cultural factors, community characteristics, and minority status.[3-7] Finally, in contrast to acculturation stress scales--which are typically one pan-ethnic group (e.g., Latinos), one nation of origin-oriented group (e.g., Mexican-descent persons) or are further subgroup focused (e.g., immigrants)--we sought a scale to address context-relevant stressors that may extend to persons in the region regardless of identity. We did so because research suggests persons from dominant and non-dominant groups (e.g., based on power/status) as well as minority and majority groups (e.g., based on proportion within a specific community) experience multiple cultural context-related stressors.[8-10]

Collaborations with community partners were fundamental to all stages of the research process, including in the identification of stress as an important community concern to be monitored, and on the subtypes of stressors that we sampled. In fact the academic-community coordination lead to an expansion of the domains of stress considered beyond those in general

social stress or Latino-focused stress literature. In this article we present a new stress scale developed initially for an urban community based survey within the US-Mexico border region. A non-representative mixed methods survey was conducted in two large adjacent neighborhood associations in response to community-driven health and social justice concerns there. Next, the findings of the scale are reported from representative farmworker household survey as part of a community-based participatory project to improve farmworker health in a large, rural, border county.

Study 1: The measurement of stress in an urban study

The Tucson Elvira Sunnyside Survey (TESS) study was the first mixed-method pilot survey of health and human rights concerns in a predominantly lower-income and Latino area in Arizona's largest border county. This project reflected a collaborative study initiated in April 2006 by the Binational Migration Institute of the Mexican American Studies and Research Center (now Department of Mexican American Studies) and the Center for Health Equality of the Mel and Enid Zuckerman College of Public Health at the University of Arizona. Community partners and advocates (e.g., from neighborhood associations, K12 officials and students, non-profit health and social agencies, and local government officials) requested the collection of policy and programmatic-related survey data, and influenced survey development. The survey aimed to address a range of socio-demographic variables, mental health indicators, physical health indicators, and typologies of immigration enforcement-related mistreatment.[11,12]

The academic-community partnership that formed the core of TESS collaborators identified stress as an important construct linking salient social conditions to health. While there are a number of general stress scales and acculturation stress scales for Latinos, no single instrument was adequate for addressing emergent community concerns. Among the 25,500

residents (7,300 households) estimated within the two participating neighborhood associations, 86% identify as Latino (slightly less than half are foreign born) and 27% live below the poverty line.[13] Both associations are within an county district noted as high in an "Indicators of Stress" measure[14], a collection of variables that reflect family and housing conditions that indicate dependency and need, factors well known to be linked to chronic and mental health markers.

In addition to the economic issues affecting participating communities, there were other layers of potential stress and social disruption noted by community representatives, including that associated with intense immigration enforcement. Government data show that since 1998 the border enforcement sector that this community lays within is the most active sector for border crossing, crossing fatalities, and US enforcement efforts.[12] Survey research in adjacent communities, also within this same border sector, have also showed a history of high rates of verbal, physical, and legal mistreatment of Mexican-descent persons by authorities irrespective of place of birth, residency or citizenship status.[11,12]

In 2004 Arizona voters passed Proposition 200, which mandates verification of citizenship in order for an individual to receive most form of public assistance.[15] The law also obligates public service agents to report those who could not provide valid documents to immigration authorities. Bills with related components in other states have been noted to contribute to fear concerning receiving medical services with largely immigrant communities.[16] Also Arizona's HB 2448, signed into law in 2006, obligate state employees to verify immigration status of applicants to the indigent health care system through the alien verification system administered by the United States Department of Homeland Security. In addition to potentially creating direct barriers to services for many community residents, the lobbying for and passing of these bills and related efforts has intensified ethnic tension and anti-

Latino sentiment according to community stakeholders. A consequence of these bills could include contributing to the known disparity in the underutilization of health services by *eligible* Latinos and border area Mexican descent persons in particular.[17] For instance eligible participants may be repeatedly questioned about legal status and discriminated against based on physical features, language, and perceived class. Supporting such a potential trend, studies show there is increased profiling of Latinos in Arizona among government officials (regardless of their legal status) and state public records suggests that human services not affected by legislation have experienced drop-offs in participation by Latinos.[11,12,18]

Given the relatively unique stressors within the area (at least in their pervasiveness and impact), the TESS collaborators strongly considered whether items from prior research might contribute to, but not completely capture, the typologies of stressful experiences in the community. Two published and well cited assessments of culturally-relevant stressors largely provided a foundation of the current study's assessment. One was the Hispanic Stress Inventory[3], which includes a 73 item version for non-US born adult Latinos and a 59 item version for US born Latinos. Domains in this instrument include occupational/economic, parental, marital, family/culture and immigration (non-US born version only) stressors. Other items and the response formats were also guided by the 20-item Bicultural Stress Scale for Adolescents.[7,8] This scale addresses everyday stressors within multiple contexts such as from discrimination, intragroup pressures, intergroup conflict, and acculturation. This scale has identified stressors experienced by minority and non-minority persons[8] and has been found to account for greater disparities in health behaviors than other more frequently considered "social determinants of health" indicators.[9]

Two major domains of stressors were identified as important by the academic-community collaborators that were not addressed in these or alternative scales[5,19] available during the instrument's development. Thus items were developed to address border specific stressors and barriers to health care. The domains of stress in the new measure, termed the Border Community & Immigration Stress Scale (BCISS), include: 1) Border (new domain) and migration stressors; 2) Acculturation stressors (in group and out group); 3) Barriers to health care (new domain); 4) Discrimination; 5) Economic strains, and 6) Family separation.

The need for new stress items should not be seen as surprising nor reflect any inadequacies concerning prior research. Rather, it is increasingly recognized in the social ecological paradigm that dynamic changes in geopolitical environments may quickly alter population-level behavioral patterns, societal views, and health outcomes.[20] The US-Mexico border region has undergone tremendous changes in the past 15 years in response to federal, state and local policies, as well as social climate and economic instabilities, and the participating communities in the current work are exemplars of this.

Methods

TESS reflects a mixed methods survey of two large adjacent neighborhoods in response to community-driven health and social justice concerns. The standardized English and Spanish instruments were developed by an interdisciplinary team that consisted of community representatives and scholars with a background in psychology, sociology, anthropology, history and/or health professions. Questions from reliable and validated surveys used by the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System (BRFSS) Survey, previous and new measures of culturally-specific stressors, acculturation and ethnic identity, and prior mistreatment surveys conducted in a nearby community[11,12] were employed. Items were

selected from the interdisciplinary team to match community and research goals while not overburdening participants. Translated items were available in most instances; multiple native Spanish speakers were involved in any required translations and reviewed all previous Spanish translations (and made adjustments) for appropriateness to current and local community usage.

This survey's closed ended, open ended, and narrative questions were asked by trained bilingual interview pairs in houses, apartments, libraries, churches and community centers. A convenience, cross-sectional sample of 174 adults was obtained. Overall response rate could not be determined because the total number of all persons who became aware of the announcement of the survey opportunity was not determined. Anecdotally we believe the participation rate was about 40%, with interviewers perceiving palpable concerns among community members to participate in an official appearing survey. Interviewers were instructed to be inclusive in recruitment toward all community residents, participant refusals once the survey process began were minimal.

All interview pairs included highly fluent Spanish and English speakers within them, though not necessarily a native Spanish speaker. All human subjects protocols were approved by the overseeing institution's federally approved internal review board and the project complied with American Psychological Associations ethical guidelines.

Stress was measured with the previously described 21item BCISS scale (items are presented in Table 1). The following were notes for the interviewers prior to administering the scale: "Within the last 3 months, has/have (each item, e.g., the need to speak better Spanish) made you_____ not all stressful, a little stressful, moderately stressful, very stressful, or extremely stressful, or have you not experienced stress due to this situation in the last 3 months, or have you never experienced stress over it?"/ "Dentro de los ultimos 3 meses [la situacion; por

ejemplo, "la necesidad de hablar mejor espanol"] le he causado que no siente estres, que sienta

un poco de estres, que siente un estres moderado, que sienta mucho estres, que sienta demasiado

estres, o que no ha sentido estres por dicha situacion durante los ultimos tres meses, o que nunca

le ha causado estres dicha situacion." The interviewers were trained to note whether the stressor

was ever experienced, experienced in the last 3 months, and for those who experienced the

stressor in the last 3 months, the intensity of the stressor in a 5-point Likert format (i.e., not at all

stressful/ le he causado que no siente estres to extremely stressful/ que sienta demasiado estres).

The current study focused on summation of intensely reported stressors, those reported in the last

two categories (very and extremely stressful), and total stress using a quantitative stress index

considering the presence and intensity of stressors.[7,21] When the items were represented by

presence/intensity the scale showed high internal consistency (α= 0.91) and had a range of 0-58

(M = 14.3; SD = 14.6; Mdn = 10). As a follow up after the scale was completed, an open-ended

question asked "Do you have other worries or sources of stress that you want to talk

about?"/"¿Le gustaría hablar de otras preocupaciones o estresantes que pueda tener?".

Other variables from the TESS study and selected for current study are reports of general

health (an established predictor of objectively measured health markers), physical health, mental

health, and depressive symptoms. Depressive symptoms were measured with a five-item

shortened version of the CES-D.[22] The measure included assessments of the frequency of

experiencing each of the four major symptom domains within the past week. Depressive

symptoms was kept continuous[6], internal consistency of the scale was adequate (α =0.79).

Descriptive analysis included reported frequencies and percentages of each item.

Bivariate correlations were used to express the strength of association, direction of influence and

statistical significance between total stress and health outcomes; these were conducted in the full

sample as well as stratified by gender and by place of birth. Analysis of variance and multiple

linear regressions were used to test for mean differences in gender and place of birth in total

stress as well as their potential operation as effect modifiers in explaining the health outcomes.

<div align="center">Results</div>

Respondents' demographics are presented in Table 2. The age of respondents ranged

from 21-78; 84% identified as Latino; 56% were born in Mexico; 68% were women. The

majority of participants reported they were citizens or had legal status legal, 5% of participants

reported not having legal documents to work in Arizona. Additionally, 24% reported a family

income of $15,000 per year or less.

Data on each of the individual stressor's prevalence in high intensity is presented for this

sample in Table 1. Needing better English, worrying about family's health care, hearing

prejudice/racists comments, worrying about family/friends with immigration and community

violence were the most commonly reported intense stressors (> 20%), with 10 of the other 16

stressors also reported with relatively high frequency/intensity (>10%).

Total stress was higher in women (M = 16.8 to 10.3; $p< 0.01$) and those born outside the

US (M = 19.3 to 9.8; $p< 0.01$) in this sample. Total stress was also examined in relation to

general health, physical health, mental health and depressive symptoms. In the full sample, stress

was correlated to depressive symptoms ($r= 0.31$, $p<0.001$) and days of poor mental health ($r=

0.22$, $p<0.01$). Women showed a comparable pattern to the overall findings, stress was correlated

to depressive symptoms ($r= 0.23$, $p<0.05$) and days of poor mental health ($r= 0.26$, $p<0.01$). In

men, stress was associated with days of poor physical health ($r= 0.39$, $p<0.01$) and depressive

symptoms ($r = 0.46$, $p<0.01$). Stress was significantly related to depressive symptoms for those

born in the US as well as those foreign born, though the strength of association was slightly

greater for those of foreign birth ($r= 0.38$, $p<0.01$ to $r = 0.29$, $p<0.05$). No interaction terms with stress and gender/born in the US significantly improved model predictions of health outcomes beyond regression models without those interaction terms.

Also of note, a qualitative component to the survey asked the respondents to indicate other sources of stress. Many of the responses well mapped existing themes (e.g., concerns about personal/family financial and medical situations, community-level crime and violence, police and immigration authorities' presence, families being split up because of deportations). Some other specific themes contained in more than one participant's response included: concerns over the presence of drugs and gangs in the community; their personal household/relationship stability; about unfair stigma to the neighborhood; and, health effects from a known industrial contamination event within the community. In no case was another specific stressor mentioned in the open ended responses by 3% or greater of the sample. This provides some evidence the scale well sampled major domains of stress of the participants.

Study 2: The implementation of the BCISS in a rural, farmworker, population.

The BCISS was also used with "Challenges to Farmworker Health at the US-Mexico Border" parent project. This was a community based participatory research project to promote farmworker health in an agricultural community in Yuma County, Arizona. The research collaboration included three formal partner organizations –the University of Arizona (Mel & Enid Zuckerman College of Public Health and the Department of Mexican American Studies), Campesinos Sin Fronteras (Farmworkers Without Borders), and Derechos Humanos (Human Rights). Campesinos Sin Fronteras is a community-based, grassroots, minority service organization in Yuma County, Arizona. Their vision is to promote family, social, and economic stability among the migrant and seasonal farmworkers through education and advocacy, using a

promotore (community health worker) model.[23] Board members and staff are former

farmworkers or share a family history that enable them to understand and be sensitive to the

disadvantaged situation of farmworkers with respect to the living and working conditions.

Derechos Humanos is a community based organization with a mission to speak out and mobilize

people at risk in the general community to confront anti-immigrant and lethal border

enforcement policies at the Southern U.S. border.[24] Through the development of their community

promotores/as, abuse clinic, community outreach presentations, workshops and trainings, this

organization facilitates community empowerment among communities of color.

Farmworkers in South Yuma County, where this project is focused, live in particularly

challenging environments due to various socio-economic and socio-political conditions. These

include their constant migration and participation in the various migrant streams--including to

Western, Midwestern and Eastern parts of the country, low English literacy skills, low

educational attainment, inadequate housing and border enforcement related activities. The

demographic profile of South Yuma County is characterized by a population that is over 90%

Latino.[13] The unemployment rates in the agricultural off-season are relatively high (30-43%).

Many families are living below the poverty level, with estimates from 25-30% and estimates of

45% of residents reporting less than a 9th grade education.[13]

Additionally agricultural work is considerably more dangerous than other types of

employment. In 2006, Agricultural workers including agriculture, forestry, fishing, and hunting

have the highest rate of fatal occupational injuries in the United States at 29.6 deaths per 100,000

employed.[25] The average individual income from all sources, as well as from farm work only,

was $10,000-$12,499 and the average total family income range was between $15,000 -

$17,499.[26] In 2006 the hourly mean wage for farmworkers in Arizona totaled $7.45 per hour.[27]

To address concerns identified by the partnering organizations, a cross-sectional, population based survey was designed and conducted from August 2006 to May 2007. Stress was of substantial interest and the BCISS well represented the major domains of stress related to the project, and was included. In addition, three items expressing potential stressful experiences from the impact of military activity at the border and impact from the construction of border fencing specific to this area were added.

<div align="center">Methods</div>

A population based survey (N = 299) using a randomized proportionately representative household sample of farmworkers was conducted in the communities of Somerton, Gadsden, and San Luis (located along the US-Mexico border). Households were identified using community maps and randomly selected blocks. Standardized Spanish instruments were developed collaboratively with the partners. Surveys were based on reliable and validated surveys used by the California Hired Farmworker Health Survey in the California Agricultural Workers Health Survey, the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System Survey (BRFSS), and the investigators' TESS survey. We also included open ended and qualitative components to derive narratives of mistreatment episodes and additional health information.

The survey was conducted door-to-door during the peak agricultural season for lettuce and citrus. Interviewers were trained promotore/as who were native Spanish speakers. All human subjects protocols were approved by the overseeing institution's federally approved internal review board and the project complied with American Psychological Associations ethical guidelines.

Persons in the household were identified as farmworkers prior to being asked to participate in the study. Interviewers articulated the purpose of their visit, stated they were conducting an anonymous survey of farmworkers in the area and were asked if someone in the household was over 20 years of age and working or had worked in the fields during the past year. A household member that met the criteria was invited to participate in the interview, with a preference for men if there were multiple eligible participants to foster gender balance in the household survey. The overall response rate was 92.6% (of the 323 persons approached who met study inclusion criteria, 299 participated), such a high response rate was only achievable because of the strong rapport of community partners (particularly given the sensitive nature of many themes).There were no requests for English survey versions or translations.

Stress was measured with the previous described 21 item BCISS scale. Additional stress items developed for the parent farmworker project were not included in this report. Criteria for intensely reported stressors and the computation of a total stress indicator were identical to the prior study. The scale $\alpha= 0.88$ and range of 0-64 ($M = 16.6$; $SD = 15.5$; $Mdn = 11$). Other variables examined in the current study included single indicators of various general health and depressive symptoms markers derived from the BRFSS.

Descriptive analysis included reported frequencies and percentages of each item. Bivariate correlations were used to express the strength of association, direction of influence and statistical significance between total stress and health outcomes; these were conducted in the full sample and stratified by gender. Analysis of variance and multivariable regressions were used to test for mean differences in gender and gender by stress moderation in explaining health outcomes. In explaining depressive symptoms, logistic regressions were used for tests of effect modification (where the change in -2LL between the model with vs without the interaction term

is the test statistic employed) as the BRFSS-based indicators were binary and the probability estimate of each departed substantially from 0.50.

Results

The sample age ranged from 20-78 and 100% reported a Mexican-descent identity. Slightly more men than women were interviewed (see Table 3). Seventy-eight percent (78%) of these farmworkers were married. The majority were among the 35-54 year age groups (64%). Additionally,26% had a yearly family income below $15,000. Our survey coincides with other studies in which the majority of farmworkers reported completing a sixth grade education or less.[19,21] The majority of participants reported they were legal residents of the U.S. (77%), and 5% of participants reported not having legal documents to work in Arizona.

The frequency of intensely reported stressors (reported as very or extremely stressful) in this sample is presented in Table 1. Most frequent reported stressors include: Needing better English; Family separation; Harder to succeed because of ethnicity; Discriminated in job; Integrating US/Latino cultures; Discriminated in seeking health care; Worrying about family's health care; Worrying about family/friends with immigration; Interactions with immigration officials; Interactions with police; Limited contact with friends/family because of immigration; Not going to a hospital because of immigration concerns; and Too much violence in the community. Six items were indicated as not intensely experienced in 10% or less of the sample.

Total stress was significantly ($p < 0.05$) related to gender, men (M = 18.5 to 14.7) had higher levels of stress. Stress was then examined in relation to items representing general health, physical health, mental health and depressive symptoms. In the full sample, depressive symptoms reported for one week and stress were related ($r = 0.29$, $p<0.001$). In women, stress was negatively associated with general health ($r = -0.18$, $p<0.05$) and positively associated with

more depressive symptoms sustained for 1 week ($r= 0.17$, $p<0.05$). For men however, stress had more and stronger associations with other outcomes. Stress was associated with more mental health problems reported in the last 30 days ($r= 0.24$, $p<0.01$), with more depressive symptoms sustained over a two week period ($r= 0.19$, $p<0.05$) and with more symptoms sustained at least one week ($r= 0.38$, $p<0.01$). One interaction term tested was significant. Adding a gender by stress term significantly improved the explanation of general health ($\Delta R^2 = 0.023$, $p< 0.01$) in a multiple linear regression model beyond a model that included gender and stress without their interaction ($R^2 = 0.001$, $p> 0.05$).

General Discussion

The Border Community & Immigration Stress Scale (BCISS) was found to have comparable internal consistency and scale descriptives in an urban community sample and a rural farmworker sample. While the estimates of total stress were relatively similar for women in both samples, the men in the farmworker sample showed particularly high levels of stress. Persons born outside the US in the urban sample also showed particularly high levels of stress. There were significant associations (small to moderate in strength) with health outcomes, particularly mental health ones, that were generally robust across sub-groups. In both samples the relationship between overall stress and depressive symptoms tended to be stronger among men. However women in the farmworker sample had a stronger and significant negative relationship (a test of gender by stress interaction was statistically significant as well) between total stress and general health; the latter a documented (though nuanced by subgroup) marker for future mortality in Latinos.[28]

There were frequently reported intense stressors in each of our 6 domains in both samples--and domains distinct from those in alternatives scales available when studies were

undertaken.[3,5-7,19,21] Also, there were some parallel findings with regard to individual intensely

reported stressors in each sample. Some of the most common reported intense stressors across

the samples were stress from the need to speak better English, worrying about family's health

care, worrying about family or friends with regard to immigration, encounters with immigration

officials, and from too much violence in the community. Of note, the findings focused on

stressful responses at the upper end of the scale--those most intensely stressful and with likely

greatest impact on health. The frequent reporting of *intense distress* in the samples is rare within

a *population-based* study of stressors, and indicates the high health burdens in border

communities. Also, markers of stress from health discrimination or not going to the hospital

because of family immigration status were reported as intense stressors at 12% or greater in the

samples.

    A few experiences explored in the BCISS instrument were not major intense stressors in

either sample. These included needing better Spanish (this appears to be a stressor much more

relevant to youth[7,8]), interactions with coyotes (persons who bring persons across the United

States border from Mexico without authorization, who may be lone guides or be part of larger

human smuggling organization), and from losing jobs to new immigrants. Notable sample

differences, more unique experiences for one sample, included: stress from hearing prejudiced

comments, working away from family for income, and from it being harder to succeed because

of one's ethnicity. The latter findings are not surprising because of the differences in the

heterogeneity within the communities and the nature of farmwork.[21]

    Two studies published recently have also elicited health related discrimination as an

important stressor within Mexican descent women[29] and Mexican descent farmworkers.[30] Such

discrimination may not only lead to minorities' disengagement from health care systems,[31-33] but

to poor health outcomes through other direct and indirect means. Others have also noted rural

health care barriers associated with farmworkers.[34] Together these findings suggest health care

access barrier (and related discrimination) may be an important stressor for Mexican descent

persons in the border region as well as other regions.

Access to health care has also been identified in Healthy Borders 2010 as one of 11 most

critical health needs.[35] Persons (adults' and children's) access to health care is among the most

central and cross-cutting national and international health disparity.[17] While attention to access to

care has been heightened among researchers and policy makers--what is not understood are

cultural contexts and barriers, such as discrimination, family members legal status (particularly if

children are eligible though their parents may not be), or police/border patrol profiling of persons

who are perceived to be undocumented (limiting travel and reaching health care) that may

exacerbate the problem beyond more typical structural or resource-based barriers considered. A

growing literature on the effects of discrimination on health exists, though only a few studies

have examined immigrant Latinos.[36] Measures such as the BCISS may contribute to explanation

and intervention planning for known access to care gaps among Mexican descent persons (and

their children), where discrimination in seeking care may be a contributing factor.

There are important limitations to the study and areas where further research is needed.

Both surveys were cross-sectional, so the degree stress leads to negative states in other health

markers versus alternative hypotheses of directional influences cannot be tested with these data.

The TESS sample may also have not been fully representative of the urban neighborhoods of

focus. Of particular note was that a high percentage of participants were women. Though also

common to randomized household surveys unless they are structured to proportionally increase

male recruitment (or where whole households are reported on), men were substantially

underrepresented (32% in the TESS study relative to 49% in the population from 2000 Census estimates[13]). However families making less than $15,000 a year (24% in our study to 21% in the population) and Latinos (85% to 81%) were only very slightly overrepresented relative to comparison data.[13] Other limiting factors are that the farmworker survey had depressive symptom markers restricted to two binary indicators and the surveys were conducted during the peak season. Had the survey been conducted during the six month period where most farmworker apply for unemployment or employed in other activities, the percentage of farmworkers responding to questions related to depression or health status may have been different.

It should also be noted that when examining stress in Spanish dominated populations particular attention should be made with regard to translations of the items and response formats. For instance if the current stress instrument is adapted for self-administration (rather than trained interviewers who can ensure proper coding) we would recommend clearly delineated distinct questions about whether each potentially stressful experience has happened to the participant (e.g., ever or in the last 3 months, depending on study goals and design), and then separate questions about the degree of stress associated with that experience. Further, while we found "estrés" widely understandable and substantively comparable to "stress" for our populations, in focus groups (not presented in the current study) we learned such terms as "preocupacion", "desesperacion", and "ansias" to be used to express related experiences. Research and health service delivered with other Spanish dominant populations may find additional words such as "preoccupacione", "angustia","tension" or"desesperación[26]", instead of or in conjuction with "estrés", to fully elucidate the range of intended experiences participants or clients express.

Future research with larger samples may examine the role of stressors by further sub-group (ethnicity, acculturation, citizenship and permanent residence status, etc) that could not be incorporated in the current work. Additional work may also perhaps attempt to discern unique effects of particular stress domains to specific health outcomes[37] and include health biomarkers.

Research and programmatic efforts may also continue to addresses ways to reduce the stressors observed in these or similar communities. For instance within the farmworker health project we have used focus groups to explore many of the stressors identified by the BCISS and develop interventions strategies. Work from this project aims to lead to changes in state policies (or their enforcement practices), assist binational cooperation (e.g., worker protections and agricultural labor standards in the US and Mexico) and identify needed social and health resources within border regions (e.g., greater availability of legal assistance, promotores/as further integrated in a broad range of functions in the health care system[38], English instruction for adults and job training for farmworkers).

In conclusion, the use of the BCISS in these border studies identified an alarming degree of stress associated with mono-lingual Spanish, family separation and meeting health care needs. Data supported our inclusion of health care barriers (and in particular discrimination) and migration pressures as major understudied stressors in US-Mexico border populations. Moreover, though some items were developed specifically in the context of local and state immigration related trends, given migration rates of Latino workers and enhanced federal enforcement efforts nationwide, we expect the assessments to have wide utility in many other communities with a high proportion of migrants or where barriers to health care access are present.

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Table 1: Item Descriptions, Translations and Frequency of Intensely Reported Stressors from the BCISS in Both Samples

	TESS (N = 174) %	Farmworker Health Survey (N = 299) %
The need to speak better Spanish/La necesidad de hablar el español mejor	2	1
The need to speak better English/La necesidad de hablar el inglés mejor	20	48
Working away from your family due to money/Tener que trabajar lejos de la familia por causa económica	13	46
Fear of losing your job to new immigrants/ Tener miedo de perder su empleo por los nuevos migrantes	9	10
The feeling that you've been discriminated against at your job/ Sentir que ha sufrido discriminación en su empleo	8	15
Having your friends or family say that you're acting too "White" or too "American."/Porque miembros de su familia tienen dificultades combinando la cultura Latina y la Americana	1	2
Your family having difficulties combining Latino & American culture/ Porque miembros de su familia tienen dificultades combinando la cultura Latina y la Americana	3	17
The feeling that you've been discriminated against when seeking health care/ The Sentir que haya sufrido discriminación al solicitar servicios de salud	13	16
Worrying about how your family will receive the health care that they need/ Preocuparse de como su familia va a recibir servicios de salud	23	36
Hearing other people say things like "Go back to your country."/ Oyendo que otra gente dice cosas como "Regrésate a tu país."	20	7
Worrying about your family or friends having problems with immigration officials.Preocuparse de si su familia o sus amigos tienen problemas con autoridades	27	23
Encounters with immigration officials/Tener encuentros con autoridades migratorias.	18	17
Encounters with local police/ Tener encuentros con la policía local	15	21
Encounters with coyotes/polleros (includes guides and human traffickers).Tener encuentros con los coyotes/polleros	8	7
A problem finding any work because of your immigration status/Por no encontrar empleo por la situación migratoria	13	8
Difficulty in getting the job you want due to your immigration status concerns/ Por tener dificultades encontrando un empleo específico por la situación migratoria	14	10
Limited contact with your family or friends due to immigration status/ Por contacto limitado con su familia o amigos por el estatus migratorio de usted o de ellos	14	17
Not going to the hospital or seeing a US doctor due to your or another family member's immigration status/ Por no poder ir al hospital o al doctor por el estatus migratorio de usted o de su familia	13	12
The feeling that you'd be deported if you went to a social or gov. agency/ Sentir que lo van a deportar si va a alguna agencia social o de gobierno	15	9
Too much violence in your community/Por tanta violencia en su comunidad	26	25
Feeling that it is harder to succeed because of your ethnic background/Sentir que es más difícil tener éxito o "salir adelante"* por su etnia	12	24

Table 2: Demographics of TESS

		N=174
Gender	Men Women	32% 68%
Age	21-34 years 35-44 45-54 55-64 65 and older	45% 18% 16% 13% 9%
Marital Status	Married Single Other	62% 21% 17%
Birthplace	Mexico US	56% 43%
Immigration Status	US Citizen or Permanent Resid. Employment authorization	52% 30%
Education	8th grade or less 9th to 11th grade High School Grad Some College College Grad	15% 22% 26% 26% 10%

Table 3: Demographics of the Farmworker Health Survey

		N=299
Gender	Men Women	52% 48%
Age	21-34 years 35-44 45-54 55-64 65 and older	17% 34% 30% 14% 4%
Marital Status	Married Single	78% 12%
Birthplace	Mexico Border Mexico Other US	47% 49% 4%
Immigration Status	Naturalized US Lawful Permanent Resident	10% 77%
Education	6th grade or less 7 to 9th grade High School Grad	45% 27% 10%