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**Depression and Anxiety among First-Generation Immigrant Latino Youth:
Key Correlates and Implications for Future Research**

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Abstract

Depression and Anxiety among First-Generation Immigrant Latino Youth: Key Correlates and Implications for Future Research

We examined how the migration and acculturation experiences of first-generation Latino youth contributed to their psychological well-being. Data came from the Latino Adolescent Migration, Health, and Adaptation (LAMHA) study, which surveyed 281 first-generation Latino immigrant youth, ages 12-19. Using logistic regression, we evaluated how migration stressors (i.e. traumatic events, choice of migration, discrimination, and documentation status) and migration supports (i.e. family and teacher support, acculturation, and personal-motivation) were associated with depressive symptoms and anxiety. We found that migration stressors increased the risk of both depressive symptoms and anxiety. Time in the US and support from family and teachers reduced the risk of depressive symptoms and anxiety. Compared to documented adolescents, undocumented adolescents were at greater risk of anxiety, and children in mixed-status families were at greater risk of anxiety and marginally greater risk of depressive symptoms.

Key Words: Adolescent; Latino; Hispanic; Immigrant; First Generation; Mental Health

In this paper, we examine the unique migration and acculturation experiences of first-generation Latino adolescents and how these experiences contribute to rates of anxiety and depression. As immigrant youth adapt and acculturate, they encounter a multitude of new challenges and stressors, but they also develop support systems to overcome these challenges (Suárez-Orozco and Suárez-Orozco, 2001). Using data from the Latino Adolescent Migration, Health, and Adaptation (LAMHA) study, we examine how these stressors and supports influence rates of depression and anxiety. We conclude by discussing implications of our research.

Methods

Procedures and Sample

We use data from the Latino Adolescent Migration, Health, and Adaptation Project (LAMHA), the first population-based study of mental health, migration and acculturation among first-generation Latino youth living in an emerging Latino state, North Carolina. Between August 2004 and November 2006, the LAMHA research team employed a stratified –cluster sampling design to collect survey data on 281 first-generation Latino youth and their primary caregivers. Please see the following web-site for a full description of the project design:

<http://www.cpc.unc.edu/projects/lamha>.

After deleting missing observations on the dependent (N=4) and independent variables (N=22), the analytic sample for the analysis of anxiety consisted of 255 Latino immigrant adolescents of Mexican descent (70%) in mostly two-parent families (77%) in which few parents had more than a high school education (34%). An additional case was lost for the analysis of depression (N=254).

Measures

Mental Health. We identified two mental health outcomes: depression and anxiety. We used the 27-item Children's Depression Inventory (CDI) (Kovacs, 1992). Scores on the CDI range from 0 to 54 and a cut point of 20 for a general screening identifies adolescents as at risk for a depressive disorder. Internal consistency was good ($\alpha = .85$). Using the 10-item version of the Multidimensional Anxiety Scale for Children (MASC-10) (March et al., 1997), we followed standard scoring protocols and classified adolescents as at risk for anxiety (i.e. above average anxiety levels) if they had a t-score of 56 or greater. Raw scores range from 0 to 30 and are converted into standard t-scores (mean=50; SD=10). Internal consistency was good ($\alpha = .72$).

Migration Stressors. Mental health stressors measured in this study fall into two categories: migration experience and discrimination. We identified five migration experience stressors. First, we calculated the total number of years the adolescent was separated from their primary caregiver. Second, we classified adolescents as having experienced a stressful migration event if they reported that they had been robbed, physically attacked, accidentally injured and/or became sick during their migration to the US Third, we used adolescent self-reports of their involvement in the migration decision to classify adolescents as not at all involved (reference group), not very or somewhat involved, or very involved. Fourth, we derived the adolescent's level of dissatisfaction with the migration decision from agree/disagree responses to five statements about their move to the US (e.g., moving to the US was the best thing for my family, and I am happier in the US). We summed the responses to create a variable ranging from one to five with a higher score indicating greater dissatisfaction. Lastly, using parent reports of their and their child's documentation status upon entering the US we created three indicators of

documentation status: the adolescent had documents (reference group), only the parent had documents, and neither the adolescent nor parent had documents.

To measure discrimination, we used adolescent self-reports on whether the adolescent had experienced discrimination in the US (1=experienced discrimination, 0=otherwise). In addition, we measured perceived discrimination using a 4-item instrument adapted from the Youth Adaptation and Growth Questionnaire (Portes and Rumbaut, 2001). This measure ranged from one to four with an internal consistency of $\alpha = .58$.

Migration Supports. We identified three categories of mental health supports: social support, acculturation, and personal motivation-optimism. To identify social support, we measured family support using the 7-item familism scale from Gil et al. (2000) (range: 1-5; $\alpha = .92$), teacher support (range: 0-11) from the 11-item School Success Profile (Bowen et al., 2005) and general social support (range: 0-8) from the 8-item Social Support Scale (Richman et al., 1993).

Because there is little agreement about which measure(s) best capture acculturation (Hunt, 2004), we constructed acculturation measures from three sources: years in the US, the Short Acculturation Scale for Hispanics (SASH) (Marin et al., 1987), and the Psychological Acculturation Scale (PAS) (Tropp et al., 1999). In our final results reported here, we used years in the US as our primary measure of acculturation because it produces more consistent and easily interpreted results than multidimensional acculturation scales (Escobar and Vega, 2000). Years in the US was correlated with the SASH ($r = .27$) and the PAS ($r = .60$) and results using this variable were more robust to model specification. We include summary scores and unadjusted odds ratios on the PAS ($\alpha = .91$) and SASH ($\alpha = .78$) to verify that the acculturation trends detected are similar across measures. Both scales ranged from one to five with higher scores indicating

greater acculturation. Lastly, as a proxy for immigrant optimism, we created a personal motivation variable indicating whether the adolescent aspired to some college or more (1=some college or more, 0=otherwise). The use of college aspirations as a proxy for immigrant optimism follows research by Kao and Tienda (1995).

Control Variables. We control for both age and gender. Parent education, family composition (i.e. living in a two-parent family), and Mexican heritage varied little within our sample. Therefore, these variables were never significant in unadjusted or adjusted models and were excluded from the final analysis for parsimony. Urban residence also did not significantly contribute to our model and was excluded in the final analysis.

Statistical Analysis

We began our analysis by examining the prevalence of anxiety and depression by gender. We then calculated the prevalence of mental health stressors and supports. Next, we estimated unadjusted logit models to obtain odds ratios and 95% confidence limits measuring the association between our mental health measures and each measure of mental health stressors and supports. Finally, we constructed three adjusted logit models controlling for gender and age to assess which mental health stressors and supports predicted depression and anxiety. For parsimony, we only included those mental health stressors and supports that were associated with depression or anxiety once we controlled for demographic differences and other stressors or supports, respectively. All analyses were weighted and adjusted for the stratification and clustering in the sample design.

Models were checked for robustness by conducting OLS regression analyses on CDI and MASC-10 scores. Results were consistent with results obtained through the logit specification and are available upon request. In our regression analyses, mental health stressors explained 15%

of the variance in CDI scores and 13% of the variance in MASC-10 scores. Mental health supports explained 33% of the variance in CDI but only 2% of the variance in MASC-10 scores.

Results

Prevalence of Depression, Anxiety, and Mental Health Stressors and Supports

See Table 1.

Unadjusted Association between Mental Health and Mental Health Stressors and Supports

See Table 2.

Adjusted Association between Mental Health and Mental Health Stressors and Supports

See Table 3 and Table 4.

Conclusion

Few studies have focused specifically on first-generation immigrant Latino youth and how their migration experiences contribute to their overall psychological well-being. This study examined how stressors that occur during the migration and acculturation process as well as immigrant support systems were associated with Latino immigrant youth's risk of depression and anxiety. Extending prior research, we found that the unique migration stressors (i.e. involuntary migration, exposure to traumatic events during migration, and discrimination) of immigrant Latino youth increased their risk for depression and anxiety. We have shown that documentation status, which is absent in most research, plays a significant role in the adaptation and acculturation process. Lastly, we found that migration supports (i.e. time in the US, and family and teacher support) minimized the stressors of migration.

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Table 1. Prevalence of Anxiety and Depression among Latino Immigrant Youth (ages 12-19)

	n	Mean Score	% Symptomatic	% Asymptomatic
Depression (CDI)				
Total	254	7.83	6.80	93.20
Males	119	7.14	5.33	94.67
Females	135	8.36	7.93	92.07
Anxiety (MASC-10)				
Total	255	50.15	28.79	71.21
Males	120	50.61	31.18	68.82
Females	135	49.79	26.89	73.11

Notes:

Cutoffs for symptomatic cases are CDI \geq 20 and MASC \geq 56
Unweighted Ns; Weighted scores and percents.

Table 2. Unadjusted Odds of Risk for Depression and Anxiety among Latino Immigrant Youth

	Distribution	Depression		Anxiety (MASC-10)	
	%/M (SD)	OR	(95% CI)	OR	(95% CI)
Female	55.59 --	1.53	(0.29 8.20)	0.81	(0.41 1.62)
Age	13.94 (0.42)	0.90	(0.55 1.45)	0.92	(0.80 1.05)
A. Mental Health Stressors					
Migration Experience					
Years separated from primary caregiver (range: 0-15)	2.97 (0.11)	0.92	(0.77 1.10)	1.02	(0.94 1.10)
Experienced stressful migration event	23.97 --	0.82	(0.14 4.80)	2.43	(1.26 4.69) *
Involvement in migration decision					
Not at all (ref.)	31.69 --	--	-- --	--	-- --
Not very or somewhat	28.73 --	0.22	(0.02 2.25)	0.76	(0.24 2.43)
Very involved	39.57 --	0.31	(0.02 6.01)	0.67	(0.37 1.22)
Dissatisfaction w/ migration Index (range: 1-5)	1.91 (0.25)	1.44	(1.06 1.94) *	1.51	(1.09 2.10) *
Documentation entering U.S.					
Adolescent documented (ref.)	28.63 --	--	-- --	--	-- --
Only parent documented	10.49 --	7.88	(1.15 53.92) *	6.27	(1.73 22.71) **
Neither documented	60.48 --	0.75	(0.15 3.65)	4.19	(1.23 14.29) *
Discrimination					
Ever experienced discrimination	42.44 --	1.33	(0.17 10.48)	1.22	(0.64 2.30)
Perceived discrimination index (range: 1-5)	2.61 (0.09)	4.09	(0.69 24.43)	0.95	(0.61 1.50)
B. Mental Health Supports					
Social Support					
Familism (range: 1-5)	4.20 (0.05)	0.21	(0.08 0.57) **	0.75	(0.47 1.21)
Teacher support (range: 0-11)	10.25 (0.20)	0.69	(0.51 0.93) *	1.03	(0.86 1.24)
General social support (range: 0-8)	6.05 (0.12)	0.84	(0.67 1.05)	0.89	(0.76 1.04)
Acculturation					
Years in the U.S. (range: 0-17)	4.50 (0.80)	0.91	(0.78 1.06)	0.91	(0.85 0.96) **
Psychological Acculturation Scale (range: 1-5)	2.08 (0.09)	0.65	(0.40 1.05) †	0.49	(0.28 0.87) *
Short Acculturation Scale for Hispanics (range: 1-5)	2.44 (0.15)	0.70	(0.40 1.22)	0.68	(0.48 0.95) *
Personal Motivation-Optimism					
Aspires to some college or more	70.84 --	0.20	(0.03 1.30) †	0.60	(0.38 0.96) *
N	255		254		255

† p<.10, * p<.05, **p<.01, ***p<.001

Unweighted Ns; Weighted means, proportions, and odds ratios; Standard errors adjusted for clustering. Ns for Years separated from caregiver (N=249), Perceived discrimination (N=248), Psychological Acculturation Scale (N=253), and Short Acculturation Scale (N=254) are slightly lower due to missing data on these items. These variables were never significant in adjusted models and were not included in the final logits reported in Tables 3 and 4.

Table 3. Adjusted Odds of Risk for Depression and Anxiety among Latino Immigrant Youth

	Depression (CDI)				Anxiety (MASC-10)			
	Model 1a		Model 2a		Model 1b		Model 2b	
	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)
Female	0.27	(0.04 1.78)	2.37	(0.38 14.75)	0.58	(0.31 1.11)	0.71	(0.34 1.50)
Age	0.74	(0.49 1.12)	0.85	(0.51 1.42)	0.96	(0.82 1.13)	0.95	(0.79 1.16)
A. Mental Health Stressors								
Experienced stressful migration event	1.03	(0.16 6.63)	---	---	2.30	(1.17 4.52) *	---	---
Involvement in migr'n decision								
Not at all (ref.)			---	---			---	---
Not very or somewhat	0.18	(0.01 2.16)	---	---	0.72	(0.23 2.25)	---	---
Very involved	0.12	(0.00 4.57)	---	---	0.39	(0.13 1.21)	---	---
Dissatisfaction w/ migration (range: 1-5)	1.67	(1.03 2.69) *	---	---	1.62	(0.99 2.66) †	---	---
Documentation entering U.S.								
Adolescent documented (ref.)			---	---			---	---
Only parent documented	55.09	(2.10 1448.0) *	---	---	11.18	(2.06 60.7) **	---	---
Neither documented	0.68	(0.09 5.30)	---	---	4.98	(0.79 31.3) †	---	---
Ever experienced discrimination	7.89	(1.33 46.79) *	---	---	1.43	(0.67 3.04)	---	---
B. Mental Health Supports								
Familism (range: 1-5)	---	---	0.20	(0.07 0.58) **	---	---	0.75	(0.42 1.37)
Teacher support (range: 0-11)	---	---	0.50	(0.35 0.70) ***	---	---	1.04	(0.82 1.31)
Years in the U.S. (range: 0-17)	---	---	0.66	(0.46 0.94) *	---	---	0.90	0.83 0.98 *
Aspires to some college or more (Optimism)	---	---	0.34	(0.05 2.44)	---	---	0.73	0.34 1.59
F-statistic	1.82		2.93		1.15		5.84	
Prob > F	0.14		0.03		0.38		0.00	
N	254		254		255		255	

† p<.10, * p<.05, **p<.01, ***p<.001

Unweighted Ns; Weighted odds ratios; Standard errors adjusted for clustering

Table 4. Adjusted Odds of Risk for Depression and Anxiety among Latino Immigrant Youth

	Depression (CDI)		Anxiety (MASC-10)	
	Model 1a		Model 1b	
	OR	(95% CI)	OR	(95% CI)
Female	0.43	(0.05 3.45)	0.53	(0.24 1.16)
Age	0.84	(0.49 1.45)	1.00	(0.82 1.22)
A. Mental Health Stressors				
Experienced stressful migration event	0.53	(0.02 13.26)	1.89	(1.05 3.40) *
Involvement in migr'n decision				
Not at all (ref.)	---	---	---	---
Not very or somewhat	0.32	(0.02 5.72)	0.56	(0.17 1.86)
Very involved	0.19	(0.02 2.31)	0.28	(0.09 0.84) *
Dissatisfaction w/ migration (range: 1-5)	1.98	(0.91 4.30) †	1.54	(0.88 2.68)
Documentation entering U.S.				
Adolescent documented (ref.)	---	---	---	---
Only parent documented	30.77	(0.66 1436.4) †	8.59	(1.73 42.61) *
Neither documented	3.46	(0.74 16.20)	6.29	(0.72 55.25) †
Ever experienced discrimination	6.04	(0.69 52.63)	1.62	(0.70 3.76)
B. Mental Health Supports				
Familism (range: 1-5)	0.21	(0.09 0.46) ***	0.77	(0.44 1.35)
Teacher support (range: 0-11)	0.57	(0.38 0.86) **	1.00	(0.81 1.24)
Years in the U.S. (range: 0-17)	0.72	(0.50 1.05) †	0.88	(0.76 1.01) †
Aspires to some college or more (Optimism)	0.49	(0.08 2.90)	0.70	(0.35 1.40)
F-statistic	7.24		3.86	
Prob > F (13,13)	0.00		0.02	
N	254		255	

† p<.10, * p<.05, **p<.01, ***p<.001

Unweighted Ns; Weighted odds ratios; standard errors adjusted for clustering