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

Stephanie R. Potochnick, MA\* and Krista M. Perreira, PhD\*

\* Department of Public Policy, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA

### Abstract

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.

### Keywords

Adolescent; Latino; Hispanic; Immigrant; First Generation; Mental Health

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The dramatic increase in the Latino population across the United States is changing the face of the nation's youth. Currently, one in five public school children are Latino, compared to one in eight in the 1990s. By 2050, more Latino school-age children than non-Latino white school-age children will reside in the US (Fry and Gonzales, 2008).

Latino youth face a multitude of challenges, including poor socioeconomic resources, risk for behavioral problems (e.g., drug use and early pregnancy), and low educational attainment (Kuperminc et al., 2009; Rodriguez and Morrobel, 2004). Of particular concern is the mental and emotional health of Latino youth. The CDC's (2007) national survey found that Latino youth were more likely to feel sad or hopeless (36.3%), to seriously consider suicide (15.9%), and to attempt suicide (10.2%) than white (26.2%, 14.0%, and 5.6%, respectively) and African American (29.2%, 13.2%, and 7.7%) youth. Furthermore, studies have shown that both depression and anxiety are positively correlated with increased rates of suicidal behavior, and adolescents who are depressed are 35–50% more likely to attempt suicide (Dopheid, 2006).

Major depression and anxiety disorders are two of the most prevalent mental health conditions affecting Latino youth. In one of the few existing national studies of Latino youth (age 11–15), Saluja and his colleagues (2004) found that Latino youth had higher rates of

depressive symptoms (22%) than white (18%), Asian American (17%), and African American (15%) youth. Other studies also consistently find higher rates of depression among Latino youth—especially Mexican American and Afro-Latinos—than among other ethnic groups (Choi et al., 2006; Mikolajczyk et al., 2007; Ramos et al., 2003). Although no national data are available on the prevalence of anxiety disorders or anxiety-related problems among Latino youth, studies also suggest that Latino youth experience significantly higher levels of anxiety than whites but not African Americans (Glover et al., 1999; Roberts et al., 2006). Approximately, 8% of Mexican-American youth (age 11–17) have had an anxiety disorder in the past year (Roberts et al., 2006).

As summarized by Gonzalez et al. (2009) and Umaña-Taylor and Alfaro (2009), much of the research available on foreign-born and US-born Latino youth examines how acculturative stress, which stems from challenges related to adapting to life in the US (e.g., learning a new language, adjusting to new social norms and family dynamics, and experiencing discrimination), affect psychological well-being. These studies find a positive association between acculturative stress and a variety of internalizing behaviors, including low self-esteem, symptoms of depression, and greater suicidal alienation. But they also find that Latino youth rely on protective factors, such as strong family connections, active coping strategies, and social supports, to minimize the detrimental influences of acculturative stress.

Other studies of Latino youth compare mental health outcomes across immigrant generations and attempt to explain differences, if any, by adjusting for socio-economic risk and protective factors (Gonzales et al., 2002). For example, Harker's (2001) and Harris' (1999) national-level assessments indicate that first-generation Latino youth (i.e. foreign-born youth with foreign-born parents; ages 12–18) experience fewer depressive symptoms than their later generation peers (i.e. US-born) and that a number of family influences (e.g., parental supervision and closeness) protect first-generation immigrant youth from experiencing the poor mental health outcomes commonly associated with low socio-economic and minority status. But, Rumbaut (1995) found that English language competence predicted lower levels of depressive symptoms among Latino youth and argues that, at least initially, the stresses of immigration negatively affect psychological well-being until youth become accustomed to their new home and learn how to navigate their new environment.

Although the previous literature makes an important contribution to understanding how acculturative stress and immigrant generational differences contribute to anxiety and depression among Latino youth (see Gonzalez et al., 2009; and Kuperminc et al., 2009 for detailed reviews), it does not provide an in-depth understanding of mental health etiologies among first-generation immigrant Latino youth. Unlike their US-born counterparts, first-generation youth undergo both a migration and acculturation process that includes experiences leading up to migration, experiences during migration, and initial settlement experiences (Zuniga, 2002).

Research on first-generation youth has identified several stressful events that can threaten individual and family well-being. These include separation from family, exposure to traumatic events, discrimination, loss of social status, and changes in family rules and roles (Finch et al., 2000; Portes and Rumbaut, 2001; Suárez-Orozco and Suárez-Orozco, 2001; Zuniga, 2002). For instance, in their examination of recent immigrant school children (8–15 years old), Jaycox and colleagues (2002) found that exposure to violence (mostly pre-migration) was prevalent and positively associated with PTSD and depressive symptoms.

In addition, the voluntary or involuntary nature of migration can affect immigrants' mental health (Ogbu, 1987). Voluntary immigrants have chosen to undertake the migration journey in the hopes that they will be able to improve their circumstances and futures. For them, migration is an opportunity that is worth the stress and sacrifices endured. For adolescents, who typically migrate in response to a decision made by their parents, migration may not be viewed as an opportunity or a voluntary decision (Perreira et al., 2006). For them, it is only a stressor.

Though few studies contain data on legal status, a child's legal status and the status of their parents can also shape migration and acculturation experiences and influence the risk of depression and anxiety. The limited research available suggests that undocumented adult Mexican immigrants are more likely to experience a traumatic event, have fewer economic and social resources, and are more marginalized and vulnerable to exploitation (Sullivan and Rehm, 2005). Immigration raids by US Immigration and Custom Enforcement agents and the fear of raids can further traumatize children and their parents (Capps et al., 2007). Even children who are citizens but whose parents or siblings are undocumented (i.e. children in mixed status families) can suffer from the stresses associated with documentation status. Yet few studies have examined how the unique risks of undocumented immigrants—especially adolescents—affect mental health (Rasmussen et al., 2007; Sullivan and Rehm, 2005).

Latino immigrant youth rely on internal strength and external support systems to overcome the challenges of migration and acculturation. According to the theory of immigrant optimism, Latino immigrant youth enter the US with a resiliency that protects them from the hardships and stressors they experience during migration and acculturation (Suárez-Orozco and Suárez-Orozco, 2001). Compared to the harsh environments many face in their home countries, the US environment offers more opportunities and rewards for highly motivated individuals. This dual frame of reference gives them a positive outlook on otherwise challenging life circumstances in the US. Other protective factors include the strong sense of family orientation among Latino youth (Coohey, 2001; Gil et al., 2000; Vega, 1995) and acts of social acceptance by school adults and peers (DeGarmo and Martinez, 2006).

Over time Latino immigrant youth learn how to navigate US social institutions and acculturate to life in the US. Though we classify acculturation as a measure of support, acculturation as measured by time in the US, English language usage, or adoption of Anglo-American customs, may either reduce or increase the stresses associated with acculturation and the subsequent risk of poor mental health. On the one hand, acculturation can increase immigrant youths' capacities to navigate social systems in the US (Perreira et al., 2006; Ko and Perreira, in press) and reduce their risk of depression or anxiety. On the other, acculturation may alienate foreign-born Latino youth from their parents and ethnic communities, and consequently, increase their risk for depression or anxiety (Umaña and Alfaro, 2009). Moreover, as youth acculturate, the challenges and every day realities of life in the US begin to trump the initial euphoria immigrants experience after having successfully migrated and re-united with their families (Portes and Rumbaut, 1990).

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. To ensure a representative sample, high schools located in high-growth (i.e.  $\geq 394\%$  growth between 1990 and 2000) Latino communities in North Carolina with a Latino population of at least 5,000 were divided into urban and rural strata. Then, high schools within these strata were randomly selected for participation in the study in proportion to the number of Latino students enrolled in the school. For each high school selected, all the middle schools feeding into that high school were also selected. A total of 11 high schools and 14 middle schools participated.

Each participating school prepared a roster of all youth who self-identified as Hispanic/Latino or had Hispanic/Latino surnames. These youth were then contacted and screened for eligibility. Only foreign-born Latino youth with foreign-born parents were eligible for inclusion and only one youth per household could participate. Our response rate was 69%. Those who refused to participate almost uniformly indicated that they did not have sufficient time. Adolescents and their parents completed an interview-administered survey in their preferred language (English or Spanish). Using scales that have been validated with Spanish-speaking populations, the LAMHA survey included questions on youths' immigration histories, family relationships, school and community experiences, and socioeconomic background.

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%). In the typical family, both parents were the youth's biological parents (58%) and the youth lived in a household with an average of three siblings. The majority of youth in our sample also lived in an urban area (78%). 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

Among first-generation Latino adolescents nearly 7% were symptomatic for depression and 29% were symptomatic for anxiety (Table 1). Compared to males, females were slightly more likely to have symptoms of depression but less likely to have symptoms of anxiety. The difference, however, was not statistically significant.

Mental health stressors were prevalent in the lives of the first-generation Latino immigrant youth in our study. Three-quarters of immigrant adolescents had been separated from their primary caregiver prior to their migration, and the average separation period lasted three years (Table 2). When the decision was made to migrate, a plurality (39.6%) of adolescents indicated that they were very involved in the decision, but a sizeable portion indicated little (28.7%) to no involvement (31.7%). During their journey to the US, nearly a quarter (24%) experienced a stressful migration event. After migration, undocumented status was a common stressor among first-generation Latino youth. The vast majority of both adolescents and their parent lacked documents upon entering the US (60.5%), and almost 11% of adolescents were undocumented though their parent had documents. Moreover, immigrant Latino adolescents both experienced (42%) and perceived ( $M=2.61$ ,  $SD=.09$ ) discrimination. Nevertheless, they did not express high levels of dissatisfaction with the migration decision ( $M=1.91$ ;  $SD=.25$ ).

Though they confronted many stressors, the first-generation immigrant Latino youth in our study also benefited from several mental health supports including high levels of familism ( $M=4.2$ ;  $SD=.05$ ), teacher support ( $M=10.25$ ;  $SD=.20$ ), and general social support ( $M=6.05$ ;  $SD=.12$ ). On average, Latino adolescents in our sample had lived in the US for 4.5 years and showed signs of both acculturation to the English language, as measured by the SASH, and acculturation to Anglo customs and norms, as measured by the PAS (Table 2). These youth also benefited from strong immigrant optimism with 71% indicating some college aspirations.

### Unadjusted Association between Mental Health and Mental Health Stressors and Supports

The unadjusted odds ratios demonstrate how each of these stressors and supports were associated with depression and anxiety (Table 2). Dissatisfaction with the migration decision increased the odds that an adolescent would have symptoms of depression ( $OR=1.44$ ) and anxiety ( $OR=1.51$ ), while experiencing a stressful migration event only increased the odds of anxiety symptoms ( $OR=2.43$ ). Compared to documented adolescents, undocumented children with documented parents were significantly more likely to report symptoms of both depression ( $OR=7.88$ ) and anxiety ( $OR=6.27$ ), while undocumented children with undocumented parents were only more likely to report anxiety symptoms ( $OR=4.19$ ). The influence of mental health supports differed across depression and anxiety. Social supports

reduced the odds of depressive symptoms (Familism OR=.91; Teacher support OR=.69) but had no impact on anxiety symptoms. Conversely, years in the US reduced the odds of anxiety symptoms (OR=.91) but were only marginally related to depression. Personal motivation reduced the odds of both symptoms of depression (OR=.20) and anxiety (OR=.60).

### Adjusted Association between Mental Health and Mental Health Stressors and Supports

To understand how both stressors and supports contribute to immigrant Latino adolescent mental health, we first estimated a logit model for the stressors measured (Table 3: Model 1a & 1b), then a model including only the support variables (Table 3: Model 2a & 2b), and finally a model combining the stressor and support variables (Table 4). These three models were estimated for both depression and anxiety controlling for gender and age. The results from these adjusted models were similar to those from the unadjusted models, with a few exceptions. For undocumented children with documented parents the odds of reporting depression and anxiety symptoms increased substantially once we controlled for other stressors – from 7.88 and 6.27 (respectively) in the unadjusted models to 55.09 and 11.18 in the adjusted models (Table 3: Model 1a & 1b). After controlling for the presence of multiple stressors, we also found that experiencing discrimination was significantly associated with an increased likelihood of depressive symptoms (OR=7.89). Similarly, after controlling for the presence of multiple supports (Table 3: Model 2a & 2b), we found that years in the US was significantly associated with decreased likelihood of depressive symptoms (OR=.66). However, college aspirations, our indicator of personal-motivation, was associated with neither depressive nor anxiety symptoms.

When we combined both measures of stressors and supports into a single model (Table 4), we observed that the effects of key stressors on our two mental health outcomes declined. In the fully adjusted models, we found that adolescents who were very involved in the migration decision had a lower likelihood of anxiety symptoms (OR=.28) than those with no involvement in the migration decision. The magnitude of the relationship between living in a mixed-status family and symptoms of depression and anxiety declined. Finally, ever experiencing discrimination was no longer associated with depression. In short, the presence of social supports reduced the influence of stressors on our two mental health outcomes. These social supports helped to mitigate the effects of involuntary migration for adolescents who were not involved in the migration decision, lacked legal status, or experienced discrimination.

### Discussion

We examined how stressors and supports experienced during migration and acculturation influence risks for anxiety and depression among first-generation immigrant youth. In our study, the risk of anxiety (28.8%) was higher than DSM-III or DSM IV anxiety disorder estimates for a general population of youth – typically 13 to 20 percent (DHHS, 2001; Shaffer et al., 1996). Our measure of anxiety, however, captured a wider range of anxiety levels. Our estimate of the risk of depression among first-generation Latino youth (6.8%) was within the range of DSM-III or DSM IV estimates of depression for youth in general – typically 5 to 10 percent (DHHS, 2001; Dopheide, 2006; Shaffer et al., 1996). Rates of depressive symptoms were lower than estimates for all Latino youth, which include the 2<sup>nd</sup> and 3<sup>rd</sup>+ generations. Using a national sample of Latino adolescents and a shortened version of the CDI, Kleykamp and Tienda (2005) found higher rates of depression among Latino youth (11%) than we find in our first-generation only sample. Saluja's (2004) estimates of depressive symptoms in Latino adolescent populations are substantially higher (22%) than either our estimates or Kleykamp and Tienda's, but Saluja used only a 2-item measure which is not as robust as CDI-based measures.

Previous research on migration and mental health among Latinos and other immigrant populations has found that immigrant youth and adults experience several unique stressors, such as involuntary migration, exposure to traumatic events while migrating, and discrimination (Finch et al., 2000; Portes and Rumbaut 2001; Zuniga, 2002) and that these stressors can increase their risk for depression and anxiety. In addition, previous research on Latino adolescents has found that family and other social support systems, acculturation to the US, and optimism can mitigate the effects of these stressors (Gonzalez et al., 2009; Umaña and Alfaro, 2009). Our study confirms and extends these findings for first-generation immigrant Latino youth.

Like refugees and asylees forced to migrate in the face of political violence (Ogbu, 1987; Rumbaut, 1991), children not involved in the decision to migrate and compelled to migrate as a result of their parents' decisions and children exposed to violence during migration can be more vulnerable to anxiety and depression. Our results supported this hypothesis. High levels of involvement in the migration decision were associated with lower rates of anxiety symptoms. This finding suggests that parents who help youth understand the migration process by including them in discussions about moving to the US can help reduce their children's anxiety. Thus, parents can take steps to reduce the potential negative mental health consequences of migration *prior* to migrating. However, *during* migration, parents cannot always protect their children from stressful events, such as being robbed or injured. When these events occur, our study shows that they result in a higher risk of anxiety even an average of five years after migration occurred.

After arriving in the US, other stressors such as legal status and discrimination become important determinants of mental health outcomes (Finch and Vega, 2003). Among the immigrant youth we surveyed, those who were undocumented were at high risk for anxiety and at even greater risk when they lived in mixed-status families with documented parents. These youth may fear being sent back to their home countries and being separated from their parents.

While anxiety was most strongly associated with legal status, the risk for depression was most strongly associated with having experienced discrimination in the US. This result is consistent with previous research on the negative health consequences of discrimination for both African-American and Latino adults (Finch et al., 2000; Finch and Vega, 2003) and relatively recent research on the effects of discrimination on adolescent mental health (Gonzales et al., 2009; Greene et al., 2006; Kuperminc et al., 2009). Our study adds to this literature by showing that discriminatory experiences can affect first-generation Latino youth even after they have only been in the US a short time (i.e. an average of 4.5 years in our sample).

Most importantly, our results demonstrate that social support at home and in school can ameliorate the negative effects of discrimination and other stressors. These results complement previous research on youth showing that social acceptance by peers and teachers in youths' schools contributes to their psychosocial well-being (DeGarmo and Martinez, 2006; Finch and Vega, 2003). Our results also echo findings from research on primarily US-born Latino youth, which emphasize the important role of *familism* and the maintenance cultural values in promoting the resilience of Latino youth and protecting them from a variety of negative health behaviors (Coohey, 2001; Kuperminc et al., 2009; Umaña-Taylor and Alfaro, 2009).

Lastly, time in the US appears to reduce immigrant Latino youths' risk for anxiety and depression by protecting them from the deleterious effects of migration and acculturative stress, but the associations are only marginal in our final adjusted model. These results help



to disentangle the mixed findings on the association between acculturation and Latino mental health (Gonzalez et al., 2009). Our results indicate that acculturation can have positive psychological affects for (mostly) recent arrivals undergoing the initial process of adjustment (Gil et al., 1994). As immigrant youth become more fluent in English as a second language, adapt to new social norms, and are better able to navigate US social systems, they experience fewer daily hassles and less stress. However, our results do not preclude the possibility that biculturalism, as found in previous studies (Gonzales et al., 2002, 2009), can further promote the psychological well-being of first-generation youth. In a relatively recent first-generation immigrant population, some level of acculturation to the host society must occur prior to the development of bicultural competence. Those youth who do not ultimately develop bicultural competence in adulthood and their 2<sup>nd</sup> and 3<sup>rd</sup>+ generation children may experience increased risks for depression and anxiety.

### Strengths and Limitations

Though our study has many strengths – our sample is a random sample of first-generation youth and we have more detail on the migration and acculturation experiences of youth than previous studies – the results of this study should be read with some caveats in mind. First our data are cross-sectional. Thus, we identify important associations that need to be further evaluated with longitudinal data. Second, because our sample is drawn from middle and high schools, we exclude first-generation youth who never enter into the US school system and those who drop out during high school (Fry, 2003). These important subpopulations of first-generation immigrant youth may be at higher risk of mental health problems due to their limited economic opportunities (Needham, 2009). Fourth, while we identified key migration supports and stressors future research needs to examine others. In particular, enculturation and the maintenance of ethnic identity could not be identified using the LAMHA data but have been previously found to be positively associated with psychological well-being (Gonzales et al., 2009). Future research should also examine the role of key migration supports and stressors in the onset of depression among Latino immigrant parents and the role of parental mental health in shaping the health of Latino immigrant youth. Lastly, over seventy percent of the Latino youth in our study were of Mexican heritage. Thus, caution must be used in generalizing our results to all Latinos (Guarnaccia et al., 2007).

### 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)

	<b>n</b>	<b>Mean Score</b>	<b>% Symptomatic</b>	<b>% Asymptomatic</b>
<b>Depression (CDI)</b>				
Total	254	7.83	6.80	93.20
Males	119	7.14	5.33	94.67
Females	135	8.36	7.93	92.07
<b>Anxiety (MASC-10)</b>				
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

	<b>Distribution</b>	<b>Depression</b>	<b>Anxiety (MASC-10)</b>
	<b>%/M (SD)</b>	<b>OR (95% CI)</b>	<b>OR (95% CI)</b>
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)
<b>A. Mental Health Stressors</b>			
<b>Migration Experience</b>			
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) *
<b>Discrimination</b>			
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>B. Mental Health Supports</b>			
<b>Social Support</b>			
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)
<b>Acculturation</b>			
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) *
<b>Personal Motivation-Optimism</b>			
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&lt;.10,

\* p&lt;.05,

\*\* p&lt;.01,

\*\*\* p&lt;.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 OR (95% CI)	Model 2a OR (95% CI)	Model 1b OR (95% CI)	Model 2b 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)
<b>A. Mental Health Stressors</b>				
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>B. Mental Health Supports</b>				
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&lt;.10,

\* p&lt;.05,

\*\* p&lt;.01,

\*\*\* p&lt;.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 OR (95% CI)	Model 1b 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)
<b>A. Mental Health Stressors</b>		
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) <sup>†</sup>	1.54 (0.88 2.68)
Documentation entering U.S.		
Adolescent documented (ref.)	--- ---	--- ---
Only parent documented	30.77 (0.66 1436.4) <sup>†</sup>	8.59 (1.73 42.61)*
Neither documented	3.46 (0.74 16.20)	6.29 (0.72 55.25) <sup>†</sup>
Ever experienced discrimination	6.04 (0.69 52.63)	1.62 (0.70 3.76)
<b>B. Mental Health Supports</b>		
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) <sup>†</sup>	0.88 (0.76 1.01) <sup>†</sup>
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

<sup>†</sup> p<.10,

\* p&lt;.05,

\*\* p&lt;.01,

\*\*\* p&lt;.001

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