

RELATIVE IMPACT OF VIOLENCE EXPOSURE AND IMMIGRANT STRESSORS ON LATINO YOUTH PSYCHOPATHOLOGY

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Latino youth in a low-income urban community are at high risk of exposure to violence. Given an accumulation of factors before, during, and after migration, immigrant youth might be at increased risk of exposure to violence and other relevant stressors (e.g., acculturation stress, language proficiency, acculturation/enculturation, and parental separations). Utilizing a short-term longitudinal design, we assessed exposure to violence and immigrant stressors and examined their relative impact on psychopathology in a sample of 164 Latino youth. Immigrant youth reported greater exposure to immigrant stressors relative to native-born peers, but few differences in rates of exposure to violence emerged. When considered alongside relevant immigration stressors, exposure to violence emerged as the strongest predictor of youth psychopathology. Results suggest that some types of stressors have more consistently deleterious effects on mental health and understanding resilient outcomes might entail considering the meaning attributed to stressors and the resources available to cope with stressors. © 2011 Wiley Periodicals, Inc.

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Exposure to violence represents a major public health concern in the United States (Koop & Lundberg, 1992; Weist & Cooley-Quille, 2001), with violence impacting ethnic minority, poor, and urban youth at disproportionate rates (Bureau of Justice Statistics, 1997). Relative to non-Hispanic White youth, Hispanic youth report higher levels of exposure to community violence (Crouch, Hanson, Saunders, Kilpatrick, & Resnick, 2000). Immigrant youth are believed to be at particularly high risk of exposure to violence due to an accumulation of risk factors in the country of origin, during the migration process, and postmigration (Jaycox et al., 2002).

Violence Exposure in Immigrant Latino Youth

Although high rates of exposure to violence in the country of origin can be found among refugee populations and those who flee war and political violence (Hodes, 2000; Sack, 1998), it is also clear that many youth emigrate from areas marked by poverty and crime (Partida, 1996) and might have been exposed to high rates of violence in these communities. The process of migration itself can be dangerous for some undocumented families who seek entry into the United States. Immigration-related trauma can include robbery, physical assaults, and sexual assaults at the hands of “coyotes” (people smugglers) as well as frightening pursuits by officials from the U.S. Border Patrol upon entry into the country (Arroyo, 1998; Suárez-Orozco, Todorova, & Qin, 2006). Finally, immigrant youth might be exposed to high levels of violence upon settling in the United States due to a collection of risk factors including poverty, living in urban communities, and overcrowded housing conditions (Arroyo; Coulton, Korbin, Su, & Chow, 1995). In these many ways, immediate circumstances and social position factors in the receiving U.S. communities might place immigrant youth at high risk of violence exposure.

In a large sample of immigrant school children, 49% reported violent victimization and 80% reported witnessing violence in the previous year (Jaycox et al., 2002). The violent event had occurred in the country of origin for 53% of youth, in the United States for 24% of youth, and in both countries for 23% of youth (Jaycox et al.). Unfortunately, information about the location of exposure was not available from all youth in the study and exposure to violence during migration was not assessed. In the first study to document high rates of violence exposure and associated mental health need in a large sample of nonrefugee immigrant Latino school children, Kataoka and colleagues (2003) found that 31% of recent immigrant Latino children reported exposure to violence and clinically significant symptoms of either posttraumatic stress disorder (PTSD) or depression. In addition to robust associations with PTSD, exposure to community violence has been found to predict a wide range of mental health problems, including internalizing and externalizing problems (Kliewer et al., 2004; McCabe, Lucchini, Hough, Yeh, & Hazen, 2005).

Immigrant Stressors in Latino Youth

Recent immigrants from Latin America are often faced with challenges including minority status, poverty, low levels of education, and discrimination upon arrival to the United States (Morales, Lara, Kington, Valdez, & Escarce, 2002). Migration itself is a major transition that necessitates adaptation (Rumbaut, 1997; Suárez-Orozco & Suárez-Orozco, 2001). The process of migration involves separation from family, friends, and homeland and brings potential challenges including social, linguistic, and economic difficulties. For many families, the process of immigration occurs in a “stepwise” process (Hondagneu-Sotelo, 1992), where family members immigrate at different times. During the process of migration, as many as 96% of Central American and 85% of Mexican

immigrant youth are separated from parents (Suárez-Orozco, Todorova, & Louie, 2002). Relative to those who migrated as a family unit, those that are separated from parents report elevated depressive symptoms, and qualitative interviews reveal feelings of ambivalence over reunifying with parents and leaving the care of interim caretakers after extended separations (Suárez-Orozco, Todorova, & Louie, 2002).

Upon arrival in the United States, immigrants might also experience acculturative stress, defined as stress resulting directly from the process of acculturation (Williams & Berry, 1991). Examples of such stressors include difficulties due to poor English language proficiency, perceptions of discrimination, and the general challenges of adapting to a new environment. Upon arrival, immigrants from Latin America might, for the first time, take on ethnic minority status and must confront the challenges of discrimination, prejudice, antiimmigration sentiments, and legal obstacles of immigration (Portes & Rumbaut, 2001; Santa Ana, 1999; Suárez-Orozco & Suárez-Orozco, 2001; Wilson, 2000, 2001). Acculturative stress is associated with increased symptoms of anxiety and depression in immigrant populations (Constantine, Okazaki, & Utsey, 2004; Hovey & Magaña, 2002). Although all immigrants must contend with the challenges of acculturation, immigrant youth might face particularly intense and sudden immersion in the new culture because of their immediate enrollment in school (Suárez-Orozco, Todorova, & Qin, 2006).

Immigrant Youth and Mental Health

Despite potential social and economic challenges, epidemiological studies suggest that recent immigrants have lowered risk for psychiatric problems relative to native-born or more established immigrants (Alegría, Canino, Stinson, & Grant, 2006; Breslau et al., 2007). In fact, increasing acculturation to U.S. culture is generally associated with more externalizing problems including conduct problems, delinquency, and substance use (Dinh, Roosa, Tein, & Lopez, 2002; Gonzales, Knight, Morgan Lopez, Saenz, & Sirolli, 2002). Associations between acculturation and depression, however, have been less consistent (Gonzalez, Haan, & Hinton, 2001; Hovey & King, 1996; Katragadda & Tidwell, 1998).

Because youth adaptation is multiply determined by individual, family, and neighborhood characteristics, even contexts marked by poverty might provide some protective effects. For example, Roosa and colleagues (2009) found that members of Mexican immigrant families of low socioeconomic status were well-adapted when living in predominately immigrant and low-income neighborhoods. The authors proposed that positive adaptation might be related to a decrease in acculturative stress, resulting from a diminished demand to make radical changes in lifestyle within these contexts. Furthermore, contact with others who share similar values and experiences might promote social cohesion and reduce the impact of social stressors (Sampson, 1999; Suárez-Orozco & Suárez-Orozco, 2001). Within families, it is possible that stressors perceived as necessary challenges in the process of migration have less of an impact relative to those not perceived in this manner. For example, Suárez-Orozco, Todorova, and Louie (2002) suggest that parental separations that are framed as temporary and necessary for the benefit of the family can lead to positive adjustment. Their qualitative data suggested that families might experience a heightened sense of closeness after separations (Suárez-Orozco, Todorova, & Louie, 2002). Thus, social resources in immigrant and socioeconomically disadvantaged communities might buffer the negative impact of stressors shared by the community.

Unfortunately, Latino families are likely to settle in segregated, urban, and impoverished areas that increase risk of coming in contact with neighborhood dangers such as gangs and violence (Orfield & Yun, 1999; Suárez-Orozco, Todorova, & Qin, 2006). Although social capital might protect families against the negative impact of chronic immigrant stressors shared within a homogenous immigrant community, it remains unclear whether these benefits outweigh the risk of exposure to social ills (Roosa et al., 2009). Unlike immigrant stressors (e.g., language proficiency), violence exposure might be more difficult to reframe as a common aspect of the immigrant experience, and social resources within immigrant communities might not be able to protect against the negative impact of violence to the same extent. As such, lifetime exposure to violence and exposure to new violence in the United States might have a more consistent detrimental impact on mental health relative to immigrant stressors.

The Current Study

Immigrant and nonimmigrant Latino youth living in an impoverished urban setting might be at high risk of exposure to adverse life events. Although previous research has documented high rates of violence exposure among immigrant Latino children (e.g., Kataoka et al., 2003), the extent to which youth are exposed to violence premigration, during migration, and postmigration has not been clearly documented. Therefore, the current study aims to characterize the frequency and prevalence of lifetime violence exposure based on immigrant status and location of exposure. Second, we examine the incidence and frequency of exposure to new violence within a 6-month period. Although it is expected that rates of violence exposure will be similar among youth living in a high-risk environment, possible differences in rates of exposure between immigrant and nonimmigrant youth are explored. Finally, the current study examines the unique impact of violence on psychopathology over and above the effects of relevant immigrant stressors.

Given that immigrant and urban minority youth might be exposed to multiple adverse life events, we aim to extend previous research by assessing stressors relevant for immigrant youth (acculturation stress, language proficiency, level of acculturation, and separations from parents) alongside violence exposure. Although it is expected that immigrant stressors will be positively associated with psychopathology, the impact of such stressors on youth adaptation might depend on the meaning youth attribute to these events and the extent to which these experiences are seen as stressors within their local context. However, violence exposure is likely uniformly considered a negative life event, and it is hypothesized that violence exposure will therefore have a stronger negative impact on internalizing, externalizing, and posttraumatic stress symptoms. Because youth might have been exposed to stressors at various time points, the current study capitalizes on the use of a short-term longitudinal design to assess the impact of lifetime adverse events on psychopathology prospectively.

METHOD

Participants

Latino students ($N = 164$) aged 11 to 13 years (mean [M] = 11.35, standard deviation [SD] = .54) were recruited from a large middle school in Southern California. The sample included 56.1% girls and 35.4% immigrant youth residing in the United States

for an average of 4.01 years ($SD = 2.89$). Most immigrant youth were born in Mexico (65.5%), followed by El Salvador (22.4%) and other Latin American countries (12.1%). The majority of parents (95.7% of mothers and 96.3% of fathers) emigrated from Latin America. Students attended a public school enrolling over 2,000 students, of which 91.4% were Latino and 45.6% were classified as English learners. Based on U.S. Census tract data for the year 2000, the local population included 76% Hispanics and 51.5% immigrants. Of families with children under the age of 18 years, 23.3% lived below the federal poverty level.

Measures

All study materials were available in English and Spanish. Spanish versions of materials without an existing translation were created through the recommended procedure of translation, back-translation, and subsequent reconciliation of discrepancies (Marin & Marin, 1991).

Demographic variables. During the baseline assessment, youth provided their age, gender, grade in school, racial/ethnic background, and place of birth of the youth, their mother, and their father. Immigrant youth also provided their length of residence in the United States.

Separation from parents. Youth indicated whether they had ever lived apart from their mother (yes/no) and whether they had ever lived apart from their father (yes/no). If a child indicated that they had been separated from either parent, then they were also asked to report the length of this separation.

English language proficiency. Student's English as a second language (ESL) classification, determined by their score on the California English Language Development Test (CELDT; California Department of Education, 2007), was obtained from school records. Placements were coded using a scale ranging from 1 to 6, with higher scores indicating greater English proficiency. The CELDT is a standardized test that measures a student's English language proficiency in listening, speaking, reading, and writing.

Acculturation/enculturation. Youth acculturation and enculturation were assessed with the language use subscales of the Bidimensional Acculturation Scale for Hispanics (BAS-H; Marín & Gamba, 1996). The BAS-H language use subscales assess the use of English (three items) and Spanish (three items), allowing for a bidimensional assessment of acculturation. Ratings are averaged to produce separate Hispanic and Non-Hispanic domain scores. A sample item from the English subscale reads, "How often do you speak English?" and participants are asked to respond on a 4-point Likert scale, ranging from 1 (*almost never*) to 4 (*almost always*). Although capturing only one aspect of acculturation, language use is commonly viewed as a strong marker of acculturation (Marín & Gamba, 1996). Cronbach's alpha for the English use subscale was .68 in the current study, whereas the Spanish use subscale produced a coefficient of .76.

Acculturation stress. Acculturation stressors relevant for immigrant and U.S.-born youth were assessed using a modified version of the Bicultural Stressors Scale (BSS; Romero & Roberts, 2003). The BSS has demonstrated good internal consistency in a large sample of immigrant and U.S.-born youth of Mexican descent ($\alpha = .92$ and $.93$, respectively). For the current study, a shortened form of the measure was developed by including discrimination stressors (five items; e.g., "I feel uncomfortable when

others make jokes about or put down people of my ethnic background”), relevant language stressors (two items about difficulties with English; e.g., “I have had problems at school because of my poor English”), and a relevant peer stressor (one item; “I have felt that others do not accept me because of my ethnic group”). For each of the eight items, youth indicate how stressful the experience has been on a 5-point scale, ranging from 1 (*not at all stressful*) to 4 (*very stressful*), and mark “does not apply” if they have never had the experience. A mean acculturation stress score was created by calculating the average rating across the items. The modified version of the scale demonstrated adequate internal consistency in the current sample ($\alpha = .76$).

Exposure to violence. Lifetime exposure to violence was assessed with a modified version of the Exposure to Violence Scale (EVS; Singer, Anglin, Song, & Lunghofer, 1995). The EVS produces a witnessed violence scale (three items assessing witnessing threats of harm, others being beaten, and others being slapped/hit/or punched), a personal victimization scale (three items assessing personal threats of harm, being beaten, and being slapped/hit/or punched), and a weapon-related violence scale limited to two items assessing witnessed gun and knife violence perpetrated on others. Youth indicate how often they have been exposed to each event using a 4-point scale ranging from 0 (*never*) to 3 (*very often*). The EVS has demonstrated good psychometric properties in a large sample of adolescents (Singer et al., 1995). Subscale scores for witnessing, victimization, and weapon-related violence are computed by summing responses of relevant scales while a total score can be computed by summing responses across all items.

At Time 1, the EVS was modified to also assess where youth had been exposed to the violent event. First, all youth were asked to indicate how often they had been exposed to each violent event *in the United States*. While those who had only ever lived in the United States only completed this initial section, those who were born outside of the United States were asked to complete the same eight items again based on how often they had been exposed to these events in their *native country*. Additionally, youth were asked to report how often they were exposed to each of the violent events *during the migration process* (“when you were moving to the U.S.”), defined as being from the time that youth left their home in their native country until they arrived in the United States. Given that only immigrant youth reported on their exposure to these eight violent events in three different locations, frequency scores for the overall sample were calculated by summing the highest score for each type of violence, regardless of where the exposure occurred. For immigrant youth, victimization, witnessing, and weapon-related violence exposure subscale scores in the United States, country of origin, and during the migration process were also computed by summing relevant items. To assess the lifetime prevalence of exposure to violence, subscale scores were dichotomized such that scores of zero represented no exposure to this violence domain, whereas scores of one (“sometimes”) or more indicated exposure to this type of violence.

At the Time 2 assessment, youth completed the EVS by indicating how often they had been exposed to each type of violence in the 6-month interim between assessments. As described above, frequency scores were calculated by summing relevant items and incidence was assessed by dichotomizing subscale scores, with scores of zero indicating no new exposure to violence, while scores of one or more indicated exposure to violence.

PTSD symptoms. The Child PTSD Symptom Scale (CPSS; Foa, Johnson, Feeny, & Treadwell, 2001) was used to assess symptoms of PTSD. The CPSS contains 17 items

corresponding to symptoms of PTSD as outlined in the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM-IV; American Psychiatric Association, 1994) and is designed for use with children aged 8–18 years. Youth rate the frequency with which each symptom has occurred in the past month using a 4-point scale, ranging from 0 (*not at all*) to 3 (*5 or more times a week*). A total score is calculated by summing all items. In this sample, the internal consistency reliability for the CPSS ($\alpha = .91$) was good.

Internalizing and externalizing symptoms. Youth symptoms of psychopathology were assessed with the DSM-Oriented Scales from the widely-used Youth Self-Report (YSR; Achenbach, 1991). On the YSR, youth read a series of statements and indicate how true each statement is for them in the past 6 months. Responses are provided using a 3-point scale, ranging from 0 (*not true*) to 2 (*very true*). A composite internalizing symptoms score was created by combining the *Affective Problems* scale, assessing symptoms of major depression and dysthymia, with the *Anxiety Problems* scale, assessing separation anxiety, generalized anxiety, and specific phobia. In the current sample, Cronbach's alphas for the Affective Problems (.75) and Anxiety Problems (.63) subscales were acceptable. Externalizing problems were assessed with a composite score created from the *Conduct Problems* and *Oppositional Defiant Problems* scales. The obtained Cronbach's alphas in the current sample were .75 and .71, respectively.

Procedure

Researchers made brief recruitment announcements in English and Spanish in homeroom classrooms, targeting 331 students for participation. After describing the purpose of the study and answering questions, researchers distributed a recruitment letter and consent form for students to deliver to their parent. Consent forms included an option for parents to indicate whether or not they provided consent for their child to participate in the study. Both student-level (e.g., choice of snack) and classroom-level incentives (e.g., a class party) were offered for returning completed consent forms, regardless of whether parents provided their consent on the forms. A total of 273 (82.48%) parents returned a signed consent form and of these, 170 (62.27%) parents provided consent for their child to participate in the study. The overall recruitment rate was, therefore, 51.36%. Two students withdrew from the school before data collection was completed. Four students (aged 14–15 years) were excluded from the current analyses, as results suggested that they were significant outliers relative to other students based on their age ($z > 3.29$, $p < .001$). The final sample, therefore, included 164 Latino students at Time 1.

After obtaining parental consent, research assistants obtained youth assent by reading the assent form aloud, answering any student questions, and questioning students about important points (e.g., voluntary nature of participation) to ensure comprehension. Youth had the option of completing surveys in English or Spanish, with trained bilingual/bicultural research assistants administering all survey forms by reading items aloud to groups of students at a time approved by the school. During the Time 1 interview, youth provided information about demographic characteristics, immigration stressors, lifetime violence exposure, posttraumatic stress symptoms, internalizing symptoms, and externalizing symptoms. As an incentive for participation, students received one \$10 merchandise gift card at Time 1. Six months after the initial survey, students completed measures of exposure to new violence (since the Time 1 survey) and symptoms of psychopathology following the same procedures described

above. For participation at Time 2, students received one \$15 merchandise gift card. The participant retention rate at Time 2 was 95.73% ($n = 157$).

RESULTS

We first examined data for serious outliers that might bias results. As described above, four youth aged 14–15 years were considered outliers based on age ($z > 3.29$, $p < .001$) and, therefore, all subsequent analyses were limited to youth aged 11–13 years ($N = 164$). Values for kurtosis and skewness were within acceptable limits and Mahalanobis distances revealed no multivariate outliers when using a criterion of $p < .001$. Preliminary results indicated that immigrant youth did not differ from U.S.-born youth in terms of the proportion of boys/girls. Immigrant youth were older ($M = 11.55$, $SD = .59$) than U.S.-born youth ($M = 11.25$, $SD = .47$), $t(162) = 3.60$, $p < .001$. Although the two groups had similar numbers of children aged 13 years (3 vs. 2) and 12 years (26 vs. 22), there were many more 11-year-old U.S.-born youth relative to immigrant youth (82 vs. 29). All multivariate analyses therefore included age as a covariate. Table 1 presents means and standard deviations for continuous study variables by immigrant status and results of t tests examining group differences. For dichotomous variables, percentages and results of chi-square tests comparing immigrant and nonimmigrant youth are presented in Table 2.

As seen in Table 1, an examination of variables related to immigration revealed expected differences between immigrant and nonimmigrant youth. For example, immigrant youth had significantly lower levels of English language proficiency, lower levels of acculturation, and higher levels of enculturation relative to U.S.-born youth (all p -values $< .01$). Immigrant youth also endorsed greater levels of acculturative stress relative to U.S.-born youth ($p < .01$). As seen in Table 2, immigrant youth were significantly more likely to report separations from their mothers (43.1%) relative to U.S.-born youth (10.5%). Immigrant youth in the current sample were, therefore, more likely to have experienced significant stressors associated with the process of migration and acculturation, relative to their native-born peers. However, there were no significant differences in level of psychopathology between immigrant and nonimmigrant youth.

Exposure to Violence in Immigrant Youth

Immigrant youth reported being exposed to violence with greater frequency in the United States ($M = 4.98$, $SD = 4.47$), relative to their home countries ($M = 3.05$, $SD = 3.24$) and during migration ($M = 1.89$, $SD = 3.10$), with all differences between location of exposure being statistically significant ($p < .01$). Eighty percent of immigrant youth reported exposure to violence in the United States, 73.2% reported exposure in the country of origin, and 51.8% reported being exposed to violence during the migration process (see Table 2).

Frequency of Lifetime Violence Exposure Based on Immigrant Status

A 2×2 multivariate analysis of covariance (MANCOVA) was conducted to examine overall differences in the frequency of lifetime exposure to violence based on youth immigrant status. The criterion variables in this analysis included the overall sum scores from the victimization, witnessed, and weapon-related violence subscales of the Exposure to Violence Scale (Singer et al., 1995). Predictor variables included youth immigrant status (immigrant or U.S.-born) and youth sex (male or female), with youth

Table 1. Descriptive Statistics for Continuous Variables Based on Youth Immigrant Status

Variable	Total sample (<i>N</i> = 164) <i>M</i> (<i>SD</i>)	U.S.-born youth (<i>N</i> = 106) <i>M</i> (<i>SD</i>)	Immigrant youth (<i>N</i> = 58) <i>M</i> (<i>SD</i>)	Analysis <i>t</i> (<i>df</i>)
ESL level	4.40(1.64)	4.96(1.25)	3.37(1.77)	-6.04(86.90)***,a
Acculturation (English use)	3.40(.63)	3.52(.54)	3.18(.72)	-3.07(90.01)**,.a
Enculturation (Spanish use)	2.71(.82)	2.52(.74)	3.05(.85)	4.12(155)***
Acculturation stress total	1.08(.73)	.95(.72)	1.32(.69)	3.10(159)**
<i>Violence exposure T1</i>				
Frequency				
Victimization	1.40(1.67)	1.30(1.59)	1.57(1.82)	.98(162)
Witnessing	3.43(2.52)	3.25(2.56)	3.78(2.44)	1.29(162)
Weapon-related violence	.52(1.02)	.42(.87)	.72(1.24)	11.69(88.48)†,a
Total violence	5.35(4.28)	4.96(4.04)	6.07(4.64)	1.59(162)
<i>Violence exposure by location</i>				
Frequency				
Country of origin	-	-	3.05(3.24)	-3.19(53)**,.b
During migration	-	-	1.89(3.10)	6.04(53)***,c
In the United States	-	-	4.98(4.47)	-4.06(53)***,d
<i>Violence exposure T1-T2</i>				
Frequency				
Victimization	1.36(1.54)	1.27(1.48)	1.52(1.66)	.97(155)
Witnessing	3.39(2.25)	3.26(2.24)	3.64(2.27)	1.03(155)
Weapon-related violence	.49(1.05)	.45(1.12)	.57(.93)	.72(155)
Total violence	5.24(3.87)	4.97(3.78)	5.73(4.01)	1.18(155)
<i>Psychopathology T1</i>				
PTSD total sum	12.18(9.96)	11.86(9.55)	12.79(10.74)	.57(161)
<i>YSR T scores</i>				
Affective problems	55.28(6.18)	55.35(6.37)	55.14(5.86)	-.21(161)
Anxiety problems	55.34(6.13)	55.04(6.22)	55.89(5.97)	.85(161)
Oppositional problems	53.22(4.79)	53.26(5.04)	53.14(4.34)	-.16(161)
Conduct problems	53.99(5.88)	53.58(5.49)	54.74(6.54)	1.19(161)
<i>Psychopathology T2</i>				
PTSD total sum	12.24(9.57)	11.50(9.17)	13.57(10.20)	1.31(155)
<i>YSR T scores</i>				
Affective problems	56.18(7.51)	55.77(7.10)	56.93(8.21)	.92(155)
Anxiety problems	55.07(6.80)	54.70(6.67)	55.75(7.03)	.92(155)
Oppositional problems	54.59(6.67)	54.03(6.39)	55.61(7.09)	1.42(155)
Conduct problems	56.42(8.06)	55.92(8.25)	57.32(7.71)	1.04(155)

Note. *M* = mean; *SD* = standard deviation.

^aCorrected *t* value used to test significance due to assumption of homogeneity of variances being rejected based on Levene's Test.

^bResults of paired-samples *t* tests comparing violence exposure in country of origin to exposure during migration.

^cResults of paired-samples *t* tests comparing violence exposure in the United States to exposure during migration.

^dResults of paired-samples *t* tests comparing violence exposure in the country of origin to exposure in the United States.

p* < .05; *p* < .01; ****p* < .001; †*p* < .10.

age included as a covariate. The omnibus *F* test indicated that the model was significant for lifetime victimization, $F(4, 164) = 2.56, p = .041$. The multivariate test of differences between groups using the Wilks' Lambda criteria was statistically significant for youth sex, $F(3, 157) = 4.17, p = .007$. A 2×2 univariate analysis of covariance (ANCOVA) revealed that personal victimization differed as a function of youth sex, $F(1, 164) = 9.13, p = .003$. Boys ($M = 1.82, SD = 1.89$) reported a greater

Table 2. Descriptive Statistics for Categorical Variables Based on Youth Immigrant Status

Variable	Total sample	U.S.-born youth	Immigrant youth	Analysis χ^2 (df)
	(<i>N</i> = 164) %(<i>N</i>)	(<i>N</i> = 106) %(<i>N</i>)	(<i>N</i> = 58) %(<i>N</i>)	
<i>Violence exposure TI</i>				
Prevalence				
Lived apart from mother	22.1(36)	10.5(11)	43.1(25)	23.11(1)***
Years separated – <i>M</i> (<i>SD</i>)		1.94(3.93)	2.97(2.16)	.97(31)
Lived apart from father	36.9(59)	31.7(33)	46.4(26)	3.38(1)†
Years separated – <i>M</i> (<i>SD</i>)		3.43(3.57)	3.72(3.26)	.31(51)
<i>Violence exposure by location</i>				
Country of origin				
During migration	–	–	73.2(41)	–
In the United States	–	–	51.8(29)	–
<i>Violence exposure T1-T2</i>				
Incidence				
Victimization	64.3(101)	61.4(62)	69.6(39)	1.07(1)
Witnessing	89.2(140)	88.1(89)	91.1(51)	.33(1)
Weapon-related violence	25.5(40)	19.8(20)	35.7(20)	4.80(1)*
Total violence	92.4(145)	92.1(93)	92.9(52)	.03(1)

Note. *M* = mean; *SD* = standard deviation.

* $p < .05$; ** $p < .01$; *** $p < .001$; † $p < .10$.

frequency of exposure to violent victimization relative to girls ($M = 1.07$, $SD = 1.41$). As assessed by partial eta squared (η^2), youth sex accounted for 7% of the variance in victimization. Results of the 2×2 ANCOVA also revealed a marginally significant main effect of immigrant status on frequency of exposure to weapon-related violence, with immigrant youth exposed to this type of violence more frequently ($M = .72$, $SD = 1.24$) relative to U.S.-born youth ($M = .42$, $SD = .87$), $F(1, 164) = 3.20$, $p = .076$. Partial eta squared indicated that immigrant status accounted for only 2% of the variance in exposure to weapon-related violence. The interaction between youth sex and immigrant status on exposure to weapon-related violence also reached marginal statistical significance, $F(1, 164) = 3.60$, $p = .06$. Exposure to this form of violence was not significantly different for immigrant ($M = .56$, $SD = .84$) and nonimmigrant ($M = .53$, $SD = .93$) girls, $t(90) = .15$, $p = ns$. However, immigrant boys ($M = .92$, $SD = 1.60$) were somewhat more likely to report exposure to weapon-related violence relative to nonimmigrant boys ($M = .26$, $SD = .77$), $t(70) = 2.37$, $p = .021$.

Prevalence of Lifetime Violence Exposure Based on Immigrant Status

Differences in the prevalence of lifetime exposure to victimization, witnessed, weapon-related, and total violence as a function of youth immigrant status were examined with a series of chi-square tests. Lifetime exposure to each form of violence was considered present if youth reported that they were exposed to this form of violence at least “sometimes” (subscale score ≥ 1), regardless of the location of exposure. The

prevalence of lifetime exposure to violence did not differ based on youth immigrant status (see Table 2).

Frequency of Youth Exposure to New Violence Based on Immigrant Status

Differences in the frequency of youth exposure to new violence in the 6-month interval between Time 1 and Time 2 as a function of youth immigrant status were examined with a MANCOVA. The total sum of the personal victimization, witnessing, and weapon-related subscales from the Exposure to Violence Scale (Singer et al., 1995) administered at Time 2 were used as the three criterion variables. Youth immigrant status was the predictor variable, with youth age and gender used as covariates. The omnibus F test indicated that the model was not statistically significant for any of the criterion variables. The multivariate test of differences between groups using the Wilks' Lambda criteria was not statistically significant for youth immigrant status, sex, or age ($p = ns$). Based on these results, there were no significant differences in the frequency of new exposure to violence based on youth immigrant status.

Incidence of Exposure to New Violence Based on Immigrant Status

The incidence of exposure to violence in the 6-month period between Time 1 and Time 2 was examined as a function of youth immigrant status. As above, exposure to violence was considered present if youth's victimization, witnessed, weapon-related, or total violence exposure score was ≥ 1 . A significant relationship between immigrant status and exposure to weapon-related violence in the United States emerged, $\chi^2(1) = 4.80$, $p = .029$. Relative to nonimmigrant youth (19.8%), immigrant youth reported greater incidence of exposure to weapon-related violence (35.7%) in this 6-month period. Immigrant and nonimmigrant youth did not differ in the incidence of exposure to other forms of witnessed violence, personal victimization, or in overall exposure to violence.

Violence Exposure, Immigration Stressors, and Psychopathology

Bivariate correlations between relevant immigration-related stressors, violence exposure, and youth psychopathology are presented in Table 3. Youth report of acculturative stress was significantly related to all measures of youth psychopathology at Time 1 and Time 2 ($p < .01$). Additionally, youth separations from either parent were significantly related to Time 1 externalizing problems and Time 2 posttraumatic stress ($p < .05$). Although immigration stressors were expected to be positively associated with youth psychopathology, the central question focused on whether violence exposure has a unique effect on mental health symptoms when controlling for demographic variables and other immigration-related stressors. To examine these hypotheses, three hierarchical regression models were constructed, with youth's self-reported PTSD, internalizing symptoms (INT), and externalizing symptoms (EXT) at Time 2 as the three criterion variables. In each model, youth age, sex, and the relevant psychopathology variable (PTSD, INT, or EXT) at Time 1 were entered in the first step. In the subsequent step, immigration-related stressors were entered as follows: youth immigrant status, acculturation stress mean, English language proficiency (ESL Level), acculturation (English Language Use), enculturation (Spanish Language Use), separations from mother, and separations from father. Frequency of lifetime exposure to violence was entered in the final step.

Table 3. Bivariate Correlations Among Study Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Sex (boys = referent)	—														
2. Age	-.10	—													
3. Born in United States	.01	-.27**	—												
4. Acculturation stress	.01	.15 [†]	-.24**	—											
5. English proficiency	-.05	-.36**	.47**	-.28**	—										
6. English use	-.02	-.17*	.26**	-.15	.40**	—									
7. Spanish use	.18*	.24**	-.31	.17*	-.48**	-.37**	—								
8. Separation from mother	-.03	.37**	-.38**	.26*	-.39**	-.28**	.23**	—							
9. Separation from father	-.02	.24**	-.15	.12	-.31**	-.22**	.14	.46**	—						
10. Lifetime violence exposure	-.11	.10	-.12	.38**	-.02	.05	-.06	.14 [†]	.05	—					
11. T1 PTSD	.07	.01	-.05	.45**	-.05	.02	-.10	.08	.11	.51**	—				
12. T1 Internalizing	.05	.01	-.03	.49**	-.05	.01	-.05	.10	.11	.38**	.59**	—			
13. T1 Externalizing	.07	.19*	-.05	.40**	-.08	-.02	-.05	.17*	.19*	.47**	.55**	.57**	—		
14. T2 PTSD	.18*	.03	-.10	.38**	-.22**	-.04	.04	.17*	.18*	.43**	.56**	.51**	.35**	—	
15. T2 Internalizing	.06	.06	-.08	.36**	-.14	.01	.01	.11	.14 [†]	.38**	.41**	.59**	.32**	.70**	—
16. T2 Externalizing	.21**	.08	-.11	.26**	-.08	.03	.02	.16 [†]	.13 [†]	.44**	.36**	.36**	.59**	.54**	.54**

* $p < .05$; ** $p < .01$; [†] $p < .10$.

Immigration, Violence Exposure, and Posttraumatic Stress Symptoms

Results from hierarchical regression analyses utilizing posttraumatic stress symptoms at Time 2 as the criterion variable are presented in Table 4. In the first step, youth age, sex and posttraumatic stress symptoms at Time 1 accounted for 33.8% of the variance in youth posttraumatic stress symptoms at Time 2, $F(3, 147) = 24.49, p < .001$. In the second step, the addition of the relevant immigration variables made a marginally significant contribution to the variance accounted for ($\Delta R^2 = .06, p = .073$). Of the immigration-related variables, only youth English language proficiency was significantly related to youth posttraumatic stress symptoms ($\beta = -.22, p = .017$). When controlling for other variables in the model, youth English language proficiency was negatively related to posttraumatic stress symptoms at Time 2. In the third step, the frequency of lifetime violence exposure emerged as an independent predictor of youth posttraumatic stress symptoms at Time 2 ($\beta = .20, p = .02$), and the addition of this variable to the model significantly increased the proportion of variance explained ($\Delta R^2 = .02, p = .02$). At this step, the model accounted for 42% of the variance in youth posttraumatic stress symptoms at Time 2, $F(11, 147) = 8.96, p < .001$. In the final model, youth sex was independently associated with posttraumatic stress symptoms at Time 2, indicating that girls reported higher levels of symptoms relative to boys ($\beta = .18, p = .008$). Youth English language proficiency remained an independent predictor of youth posttraumatic stress symptoms, as did the frequency of youth lifetime exposure to violence. Consistent with our hypothesis, youth exposure to violence uniquely predicted youth symptomatology over and above the effects of relevant immigrant stressors.

Immigration, Violence Exposure, and Internalizing Symptoms

Results of a hierarchical regression model with internalizing symptoms at Time 2 as the criterion variable are also presented in Table 4. In the first step, youth age, sex and internalizing symptoms at Time 1 accounted for 35.6% of the variance in youth internalizing symptoms at Time 2, $F(3, 147) = 26.52, p < .001$. In the second step, the addition of immigration-related variables did not make a significant contribution to the variance accounted for ($\Delta R^2 = .02, p = ns$). The addition of lifetime exposure to violence in the third step of the model did not result in a significant increase in the variance explained ($\Delta R^2 = .01, p = ns$). Contrary to hypotheses, there were no main effects of immigration related variables or violence exposure when examining youth internalizing problems at Time 2. The overall model at step three explained 39% of the variance in youth internalizing symptoms at Time 2, $F(11, 147) = 7.91, p < .001$.

Immigration, Violence Exposure, and Externalizing Symptoms

Results of a third model, with externalizing symptoms at Time 2 as the criterion variable, are also presented in Table 4. In the first step, youth age, sex and externalizing symptoms at Time 1 accounted for 38.3% of the variance in youth externalizing symptoms at Time 2, $F(3, 147) = 29.82, p < .001$. The addition of immigration-related variables in the second step of the model did not make a significant contribution to the variance accounted for ($\Delta R^2 = .01, p = ns$). In the third step of the model, lifetime violence exposure was positively related to youth externalizing symptoms at Time 2 ($\beta = .20, p = .023$). Including violence exposure at this step of the model significantly increased the proportion of variance explained ($\Delta R^2 = .02, p = .023$). The final

Table 4. Hierarchical Regression Analyses Predicting Youth Psychopathology at Time 2

Variable	Posttraumatic stress (Time 2)			Internalizing problems (Time 2)			Externalizing problems (Time 2)		
	B	SE	β	B	SE	β	B	SE	β
Youth sex	3.56	1.33	.18**	.10	.13	.06	-.39	.13	.21**
Youth age	-.31	1.35	-.02	.06	.13	.03	-.03	.13	-.02
T1 symptomatology	.37	.08	.38***	.52	.09	.49***	.50	.09	.46***
Immigration variables									
Youth born in United States	.83	1.57	.04	-.02	.16	-.01	-.09	.15	-.04
Acculturation Stress	1.18	1.06	.09	.07	.11	.06	-.01	.10	-.01
English proficiency	-1.30	.52	-.22*	-.08	.05	-.14	-.02	.05	-.03
Acculturation (English)	.64	1.14	.04	.06	.11	.04	.08	.11	.05
Enculturation (Spanish)	-.58	.95	-.05	-.07	.09	-.06	.01	.09	.01
Separation from mother	.49	1.92	.02	-.05	.19	-.02	.09	.19	.04
Separation from father	1.29	1.51	.07	-.09	.15	.05	.00	.15	.00
Lifetime violence exposure	.43	.18	.20*	.03	.02	.12	.04	.02	.20*

Note. SE = standard error.
 * $p < .05$; ** $p < .01$; *** $p < .001$.

model explained 41.6% of the variance in youth externalizing symptoms at Time 2, $F(11, 147) = 8.81, p < .001$. Consistent with our hypotheses, youth exposure to violence was significantly and uniquely related to externalizing problems when accounting for immigration-related stressors.

DISCUSSION

The present study sought to characterize exposure to violence and immigrant stressors and to examine associated outcomes prospectively in a sample of immigrant and nonimmigrant Latino youth. Table 5 provides a summary of the main study findings. Immigrant youth reported high rates of exposure to violence in the country of origin, during the process of migration, and after settling in the United States. However, immigrant youth in the current sample reported greater frequency of exposure to violence in the United States relative to other locations. Consistent with concerns highlighted by previous researchers (e.g., Jaycox et al., 2002; Kataoka et al., 2003), immigrant Latino youth are at high risk of exposure to violence at all points of the migration process. Notably, results from the current study highlight the high risk of exposure to violence when youth settle in urban U.S. communities marked by crime and poverty.

As in other community samples of urban minority youth (e.g., Bell & Jenkins, 1993; Singer et al., 1995), the overall sample was exposed to high lifetime levels of violence (89%). Because youth in the current study live in a high-risk environment, it was also important to ascertain the extent to which youth are exposed to new violence. Youth reported a high incidence of exposure to new violence in this 6-month period, with 92.4% of youth reporting at least some exposure. This number is substantially higher than what has been reported in other samples of urban adolescents (e.g., 76% exposure in a 6-month period reported by Ozer & Weinstein, 2004). Although immigrant Latino youth might be at high-risk of exposure to violence overall, few differences in exposure to violence between immigrants and nonimmigrants emerged

Table 5. Summary of Main Results

Aim 1: Documenting rates of exposure to violence premigration, postmigration, and during migration	<ul style="list-style-type: none"> ● Immigrant youth reported more violence exposure in the United States > country of origin > during migration ● Boys have greater exposure to lifetime victimization relative to girls ● Lifetime exposure to violence high in the sample, but not significantly different based on immigrant status
Aim 2: Assessing the incidence of exposure to new violence (T1-T2)	<ul style="list-style-type: none"> ● No differences in the frequency of exposure to new violence based on immigrant status ● Incidence of exposure to weapon-related violence was higher for immigrant youth relative to U.S.-born youth
Aim 3: Understanding the relative impact of violence exposure and immigrant stressors	
Bivariate analyses	<ul style="list-style-type: none"> ● Acculturative stress positively associated with psychopathology at T1 and T2 ● Separation from either parent associated with T1 externalizing and T2 PTSD ● Lifetime violence exposure strongly related to all forms of psychopathology at T1 and T2
Multivariate analyses	<ul style="list-style-type: none"> ● English language proficiency negatively associated with PTSD at T2 ● No other immigrant variable associated with psychopathology ● Lifetime violence exposure uniquely predicted T2 PTSD and Externalizing problems

Note. PTSD = posttraumatic stress disorder.

when examining Latino youth in an urban, low-income neighborhood. There were no differences in the frequency, prevalence, or incidence of exposure to lifetime personal victimization and witnessing of violence based on immigrant status. Notably, results did suggest that relative to nonimmigrant youth, immigrant youth were more likely to report exposure to new weapon-related violence. Even within this high-risk context, there was some indication that immigrant status was associated with exposure to more severe forms of violence.

Given that immigrant youth and youth living in high-risk urban environments experience multiple stressors, it was also necessary to understand the relative impact of such stressors. For immigrant youth, the process of migration itself represents a major transition requiring adaptation (Rumbaut, 1997; Suárez-Orozco & Suárez-Orozco, 2001). Descriptive analyses, therefore, focused on examining the presence of immigration-related stressors and potential differences in rates of these stressors between immigrant and nonimmigrant youth. Nearly half of all immigrant youth reported separations from mothers and fathers (43.1% and 46.4%, respectively). Although these rates are somewhat lower than those reported by Suárez-Orozco, Todorova, and Louie (2002), they nonetheless represent a significant proportion of immigrant youth who experience substantial separations of 3 to 4 years, on average, from primary caregivers. Although U.S.-born youth also endorsed stressors associated with the process of acculturation, immigrant youth were particularly likely to endorse stress associated with difficulties due to poor English language skills, worries about family members' difficulties with immigration, and difficulties understanding the actions of people from other cultures. Our results, therefore, suggested that both immigrant and nonimmigrant youth were exposed to high rates of violence and that immigrant youth were at increased risk of exposure to additional stressors including separations from parents, acculturative stress, and difficulties with English language proficiency.

A central aim of the current study was to determine the unique impact of violence exposure on youth psychopathology. Although bivariate analyses suggested that acculturative stress and separations from parents were associated with psychopathology, immigrant stressors did not significantly increase the variance accounted for in longitudinal multivariate analyses. Only English language proficiency emerged as a significant independent predictor of posttraumatic stress symptoms, with those having more limited proficiency reporting more elevated symptoms. After accounting for a range of immigration and acculturation stressors, lifetime exposure to violence explained a significant proportion of variance in externalizing and posttraumatic stress symptoms prospectively. Lifetime exposure to violence also emerged as a unique predictor of posttraumatic stress and externalizing symptoms at Time 2. Although immigration-related stressors can have deleterious effects on youth emotional and behavioral functioning, the current results suggest that exposure to violence has a more profound and pervasive negative impact on youth psychopathology.

To our knowledge, the current study is the first to document rates of exposure to violence in the country of origin, during the process of migration, and upon settling in the United States in a sample of immigrant and nonimmigrant Latino youth. In addition, this study examines multiple relevant immigration and acculturation stressors together with violence exposure to determine the unique impact of each on youth internalizing, externalizing, and posttraumatic stress symptoms. Because youth might be exposed to adverse life events at different time points and temporal proximity of the stressor might affect the strength of the association with mental health, the longitudinal nature of the current study represents a notable strength.

Although additional research is needed to elucidate processes of risk and resilience, the current study represents an important step towards that goal.

Despite the strengths of the current study, some limitations must also be noted. We were interested in understanding the adjustment of Latino youth within a low-income, ethnically dense, and urban context. Therefore, the results of this study might have limited generalizability to other cultural groups or Latinos in other contexts. The current sample is also moderate in size and the proportion of immigrant youth in the sample might have limited our ability to find other significant group differences. Additionally, Mexican youth represented the largest group of immigrant youth, and the small number of youth from other Latin American countries did not allow for a more detailed examination of effects based on country of origin. Our measure of acculturative stress assessed general stressors that are applicable to multiple youth of ethnic minority status. Although this was necessary to compare stressors across immigrant and nonimmigrant youth, it is possible that some dimensions of acculturative stress or that acculturation stressors specific to immigrant Latinos might be differentially related to outcomes. Importantly, all constructs were assessed through youth self-reports, and this might have led to a greater likelihood of finding significant associations due to shared method variance. Although the longitudinal nature of the current project might increase our confidence in the validity of the results, future studies would benefit from replicating these results with reports from multiple informants.

Findings about the relative negative impact of adverse events on Latino youth are important because they take us one step closer to understanding processes of risk and resilience in this population. Although previous studies (e.g., Roosa et al., 2009) have examined a broader range of Mexican Americans in terms of social and family factors, the current study suggests that even within a high-risk context, potential risk factors might be differentially related to outcomes. One must be careful not to interpret the current findings as suggesting that immigration-related stressors have no negative effects on youth. These findings only suggest that given multiple possible adverse events, some appear to be more consistently deleterious than others. It is important for future research to continue examining possible moderators and mediators of these associations, as it is likely that there are familial and individual differences in the relative impact of adverse events.

Longitudinal research combining quantitative and qualitative methods conducted by Suárez-Orozco, Todorova, and Louie (2002) and Suárez-Orozco, Todorova, and Qin (2006) has revealed that separations from parents and the process of migration can bring about high levels of distress. They suggest that the perceived meaning of these stressors is important. If some youth perceive immigration and acculturation stressors as necessary challenges that must be overcome in order to succeed in the United States, then it is possible that severity and duration of any negative effects will be attenuated. Future research must carefully examine whether this ability to make meaning out of challenges is in fact protective for immigrant youth. Previous research (e.g., Roosa et al., 2009) has also revealed that what are perceived to be as deleterious environments might actually lead to successful adaptation when they provide a reasonable person-environment fit. These researchers found that Mexican American youth from low-income and immigrant families demonstrated positive mental health adjustment when they resided in a low-income immigrant neighborhood. Although they propose that living in a context with similar others reduces acculturative stress and leads to increased perceptions of social support, they note that it is unclear whether these potential benefits outweigh the costs of living in such environments.

Although living in an urban low-income context with high rates of immigrant families might have provided some protective effects in terms of the negative impact of immigrant stressors in our sample, there were similar rates of violence exposure between immigrant and nonimmigrant youth, and some indications that immigrant youth were more likely to be exposed to severe forms of violence. Therefore, any potential protective effects do not appear to shield youth from exposure to violence and associated mental health problems. Furthermore, results from this study suggest that exposure to community violence, a common social ill in urban and low-income communities, is strongly associated with youth psychopathology. Therefore, when Latino youth present for mental health treatment, it is important to obtain a detailed trauma and immigration history and to use this information to arrive at a culturally competent clinical integration that incorporates youth strengths and challenges. Although this represents the optimal clinical standard of care, much research is needed to develop evidence-based measures and interventions that will allow clinicians to accomplish these goals. Although this study highlights the deleterious effects of violence exposure on youth, results should also draw our focus to understanding the processes that lead to resilient outcomes. Understanding cultural, social, familial, and individual factors that promote resilience within Latino youth remains an important area of research. An increased understanding of such processes will facilitate public policy initiatives and the development of culturally appropriate and effective preventive interventions. Through a more comprehensive understanding of risk and resilience in this population, we might be better able to accomplish the dual goal of promoting successful adaptation and effectively meeting the mental health needs of immigrant and nonimmigrant Latino youth.

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