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Arora, Perna G. and Wheeler, Lorey, "Depressive Symptoms in Mexican-Origin Adolescents: Interrelations Between School and Family Contexts" (2017). *Faculty Publications from Nebraska Center for Research on Children, Youth, Families, and Schools*. 125.
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Published in *Contemporary School Psychology*, 2017

doi 10.1007/s40688-017-0150-1

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Published 8 August 2017.

Depressive Symptoms in Mexican-Origin Adolescents: Interrelations Between School and Family Contexts

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Abstract

This study, as guided by cultural-ecological frameworks, examined multiple contextual stressors, including subjective economic hardship, acculturation, discrimination, and negative perceptions of school safety, as simultaneously linked to adolescents' depressive symptoms, as well as the role of gender, familism values, family cohesion, and school connectedness on these associations. Data come from the Children of Immigrants Longitudinal Study (Portes and Rumbaut 2012) that included second-generation 8th- and 9th-grade children of foreign-born parents from the Mexican-origin subsample ($n = 755$; 52% male; time 1 M age = 14.20 years). Adolescents were either born in (60%) or immigrated prior to age 5 to the USA. Results of the regression analysis conducted via *Mplus* indicated that Mexican-origin female adolescents had higher levels of depressive symptoms at age 17. Subjective economic hardship, general discrimination, and negative perceptions of school safety were related to higher levels of depressive symptoms. Family cohesion was related to lower levels of depressive symptoms. Youth gender, familism values, family cohesion, and school connectedness were significant moderators. The present findings point to not only the harmful effects of subjective economic hardship, general discrimination, and negative perceptions of school safety on second-generation Mexican-origin adolescents' mental health but also the significant protective role of school connectedness and family cohesion in promoting adolescents' well-being. Implications for school psychology research and practice are discussed.

Keywords: Mental health, Immigration, Schools, Adolescence, Mexican origin

Mexican Americans are the largest ethnic group among US immigrants (US Census Bureau 2010). This large US subgroup faces high levels of mental health problems (Delva et al. 2005). Specifically, Latino adolescents, including Mexican-origin youth, demonstrate the highest risk for depression among all ethnic groups (Anderson and Mayes 2010; Twenge and Nolen-Hoeksema 2002) and higher rates of suicide attempts than their White or African American peers (Eaton et al. 2006). Further, with regard to nativity (e.g., US-born, foreign-born), differences in depressive symptoms have been noted. There is evidence that foreign-born Mexican-origin adolescents have lower rates of depression as compared with US-born Mexican-origin youth (Peña et al. 2008; Vega et al. 2004). These findings underscore depression and suicide as public health concerns among Mexican-origin youth and the importance of gaining a better understanding of the context of development of depressive symptoms among this large population.

The purpose of the current study was to examine depressive symptoms among Mexican-origin youth. Increasing our understanding of mental health, namely depression, during adolescence among ethnic minority youth is critical because this is an important time in the development of disorders (Cicchetti and Rogosch 2002) and ethnic minority youth face unique challenges that are theorized to contribute to symptomatology (García-Coll et al. 1996). Furthermore, scholars have emphasized the need for ethnic-homogeneous studies to capture within-group variability in contextual and culturally relevant factors that contribute to mental health among ethnic minority populations (e.g., García-Coll et al. 1996). Given the increasing number of immigrant youth in schools (Camarota 2007), many have called for additional research seeking to better understand the development of mental health concerns among immigrant youth (American Psychological Association 2012). Thus, this study, as guided by cultural-ecological perspectives (García-Coll et al. 1996), used an ethnic-homogenous design to first examine contextual and culturally relevant stressors (i.e., subjective economic hardship, acculturation, perceived general and school discrimination, perceived negative school safety) related to depressive symptoms among Mexican-origin adolescents. Second, we examined protective factors from family and school contexts (i.e., familism values, family cohesion, school connectedness) that may buffer the impact of contextual stressors on depressive symptoms to understand mechanisms of strength and positive adaptation among Mexican-origin adolescents. Additionally, given the differences in rates of depressive symptoms by youth gender for Latinos (Potochnick and Perreira 2010), we examined the impact of gender on the associations between contextual stressors and protective factors with depressive symptoms. A greater understanding of the risk and protective factors related to depressive symptoms among Mexican-Origin youth will highlight important

cultural and contextual factors needed for school psychologists to better address the mental health needs of this underserved population in schools.

As numerous stressors and protective factors have been implicated in the development of depression, and because of the difficulty to test complex ecological models representing all relevant factors simultaneously, this study included factors identified as being theoretically or empirically relevant for Mexican-origin youth. Further, while these constructs can be conceptualized as either contextual stressors or protective factors (e.g., subjective economic hardship versus economic advantage), here we described them as one or the other based on the most common use in the literature. Previous studies have established relationships between these stressors and protective factors individually and in some combination on depressive symptoms (Umaña-Taylor et al. 2011), yet, to our knowledge, no study has examined the interrelations among these stressors and protective factors concurrently among Mexican-origin adolescents. Furthermore, this study extends the literature by examining these associations among a sample of adolescents homogenous on generational status (all youth's parents were immigrants).

Contextual Stressors Related to Youth Depressive Symptoms

Ecological perspectives point to the importance of understanding overlapping contextual factors that shape developmental processes (e.g., Bronfenbrenner 1979). According to these perspectives, developing youth are influenced by their simultaneous adaptation to multiple social contexts, including family and school, as well as broader macrosystem forces, such as culture. Ecological perspectives suggest that a nuanced understanding of development can be gained by examining the interplay between contextual factors, and the way in which their impact may vary based on the absence or presence of risk or support in one context as compared with another. Prior theoretical (García-Coll et al. 1996) and empirical work has implicated multiple contextual and culturally relevant stressors (Gonzales et al. 2011; Umaña-Taylor and Alfaro 2009) that may contribute to Mexican-origin adolescents' depressive symptoms. The current study focused on economic hardship, acculturation, discrimination, and school safety, in particular, as they are highly salient for Mexican-origin youth.

Economic hardship has been purported to affect youth and families negatively (McLoyd 1998). This is of particular concern for Mexican-origin adolescents, as more than a third of Latina/o youth live in poverty, a rate more than double non-Latina/o White youth (Pew Research Center 2014). Studies have found links between parents' perceptions of economic hardship and poor youth adjustment (Crouter et al. 2006; Gonzales et al. 2011). Only one study, to our knowledge, has examined Mexican-origin adolescents'

perceptions of economic hardship and found a link with greater depressive symptoms (Delgado et al. 2013).

Acculturation, which refers to a process by which individuals interact with the values, beliefs, and practices of a new or dissimilar culture (Schwartz et al. 2010), has been identified as an important area of study among immigrant populations (Berry 2006). Acculturation has been most often measured using behavioral anchors, including language use (linguistic acculturation) or engagement in other cultural practices (e.g., media preferences, social affiliations, and cultural customs and traditions; Schwartz et al. 2010). The process of acculturation may be especially stressful for Latina/o immigrants in the USA (Umaña-Taylor and Alfaro 2009), partially because of the increasingly pervasive anti-immigrant sentiment (Claffey 2006) and cultural and linguistic differences from that of the host culture in the USA (Portes and Rumbaut 2006). Research linking acculturation with depressive symptoms has been mixed. Research has indicated that more acculturated Mexican-origin youth have decreased depressive symptoms (linguistic acculturation; Gonzales et al. 2006), whereas other studies with immigrant youth indicate that higher levels of acculturation relate to increased mental health concerns (Anglo orientation; Brittan et al. 2013).

Discrimination, defined as "differential treatment based on race that disadvantages a racial group" (Blank et al. 2004, p. 4), represents a significant risk for Latina/o adolescents (Perez et al. 2008). A significant proportion (approximately 65%) of second-generation Mexican-origin youth report experiencing discrimination (Portes and Rumbaut 2001). Perceived discrimination has been linked to depression in Mexican-origin adolescents (Deardorff et al. 2003; Delgado et al. 2011). The bulk of research on discrimination as related to adolescents' psychological functioning has examined these experiences in general. Yet, as school is an important ecological context during adolescence (Suárez-Orozco et al. 2008), it is critical to understand the independent contribution of discrimination within this context. Research has demonstrated that ethnic minority youth, including Latina/o youth, experience racial and ethnic discrimination in the context of their school (Greene et al. 2006), and discriminatory messages from peers and adults in schools have been found to contribute to depressive symptoms in ethnic minority adolescents (Tummala-Narra and Claudius 2013). However, there is a paucity of research among Mexican-origin youth (Stone and Han 2005).

Perceptions of school safety, or youths' feeling of safety at school (Shumow and Lomax 2001), is a critical component of school climate (Skiba et al. 2004). The importance in attending to feelings of school safety have been underscored due to its purported association with a host of negative academic and social emotional outcomes. Indeed, empirical evidence has demonstrated that negative perceptions of school safety are linked to decreased

school attendance, poor academic performance, decreased engagement in schools, behavioral concerns, and depression (see Hilarski 2004 for a review of this research). Considering that a large number of youth endorse concerns about school safety (Bowen and Van Dorn 2002), particularly youth from low socioeconomic backgrounds (Schreck and Miller 2003) and ethnic minority youth (Ozer and Weinstein 2004), additional research regarding the role of perceptions of school safety on depressive symptoms among underserved, ethnic minority youth is needed. However, to our knowledge, no research has examined the role of perceptions of school safety on depressive symptoms in Mexican-origin adolescents.

The Moderating Roles of Family and School Factors

To understand what might mitigate the effects of contextual stressors on youth maladjustment, there has been increasing interest in identifying malleable factors that protect youth. Scholars have identified several protective factors for Mexican-origin youth. They are purported to hinder the effects of contextual stressors on the development of mental health problems (Gonzales et al. 2012; Frisby 2013) and are discussed below.

Familism values, defined as family obligation, closeness, and respect (Knight et al. 2010), are believed to be particularly salient for Mexican-origin adolescents (Fuligni and Pedersen 2002). Research demonstrated that familism values serve as a protective factor (Stein et al. 2014; Umaña-Taylor 2011) associated with improved mental health functioning (Germán et al. 2009). Familism has been linked with lower depressive symptoms in Mexican-origin adolescents (e.g., Ayón et al. 2010).

Family cohesion, described as perceptions of family connectedness, has also been identified as a protective factor (Rivera et al. 2008). Research on this relationship, however, has not been consistent. For instance, low family cohesion has been shown to be related to increased psychological concerns in Latina/o individuals, yet, this same association did not hold true when examining Mexican-origin individuals, specifically (Rivera et al. 2008).

School connectedness is defined as a sense of attachment, commitment, involvement, and beliefs in one's school (Monahan et al. 2010) and has been referred to by various terms in the literature, including school belongingness, engagement, attachment, bonding, climate, and involvement (Libbey 2004). Considering that adolescents spend more time in school than in any other context, it is not surprising that school connectedness has been linked to psychological wellbeing (Monahan et al. 2010), including lower depressive symptoms (Joyce and Early 2014). Yet, to our knowledge, research has not examined the role of school connectedness as a protective factor specifically in Mexican-origin adolescents (Romero et al. 2013).

The Role of Gender

Gender differences in depressive symptoms are consistent, with girls generally reporting higher levels than boys (Avenevoli et al. 2015). Specifically, Mexican-origin youth's trajectories have indicated important differences by gender; specifically, girls' symptoms of depression increase from ages 12 to 18, whereas, boys' symptoms decline during the ages of 12 to 22 (Zeiders et al. 2013). This pattern of gender differences is not entirely understood; however, attempts at theoretical explanations have included hormonal differences during puberty, greater susceptibility and exposure to stress, and differences in interpersonal orientation (Zahn-Waxler et al. 2008). A cultural emphasis on socialization to traditional gender roles, increasingly salient in Mexican-origin youth (Azmitia and Brown 2002), may further contribute to variation in stress responses and interpersonal orientations. These divergent experiences of girls and boys might influence how risk and protective factors link to depressive symptomology. Yet, little is known about the role of gender on these associations.

Current Study

The current study extended the literature by examining the interplay between multiple contextual stressors (i.e., subjective economic hardship, acculturation, perceived general and school discrimination, and negative perceived school safety) and protective factors (i.e., familism values, family cohesion, and school connectedness) on depressive symptoms (see Fig. 1 for conceptual model) among Mexican-origin adolescents with immigrant parents. First, we hypothesized that contextual stress would relate to increased depressive symptoms at age 17 (controlling for prior levels of symptoms at age 14). Second, we expected that the protective factors would diminish the links between the stressors and depressive symptoms. Third, we expected that these associations might vary by adolescent gender, with links being stronger for girls as compared with boys. In addressing the study goals, we also accounted for the important cultural factor of nativity as differences in depressive symptoms have been noted.

Method

Data came from the Children of Immigrants Longitudinal Study (CILS; Portes and Rumbaut 2012), a study focused on the cultural, educational, and psychosocial adaptation of youth ($N = 5262$; 51% female) with immigrant parents. To be eligible for the study, youth had to have at least one foreign-born

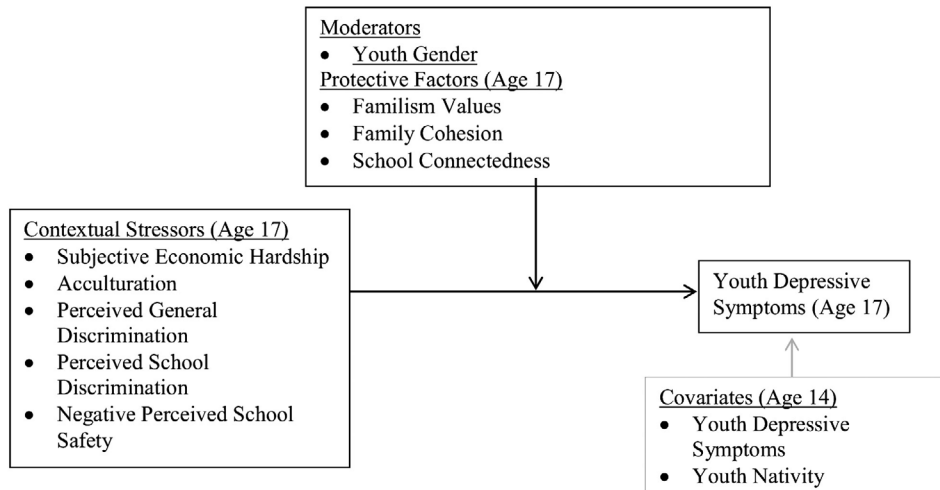


Fig. 1. Conceptual model linking Mexican-origin youths' contextual stressors to depressive symptoms; the protective effects of family and school.

parent and be US born or be born abroad but immigrated to the USA at an early age and be in the 8th or 9th grade (study defined as second-generation immigrants). Participants included ethnically diverse students from 49 schools in the Miami/Ft. Lauderdale and San Diego metropolitan areas. Participants were assessed in the language of their preference in 1992, 3 years later (i.e., 1995; 82% response rate), and 6 to 8 years later (i.e., 2001–2003; 69% response rate). Surveys were translated and administered in six different languages based on need. This timeframe represents a period of increased immigrant growth in the USA, with a large percentage coming from Mexico and other Latin American countries (Urban Institute 2009). While more recent sources of data examining this understudied population may exist, the CILS (Portes and Rumbaut 2012) remains one of the most extensive data sources on US-born immigrant youth (Portes and Hao 2004) and has been used in over 100 published manuscripts (Resource Center for Minority Data 2015). The Internal Review Board approved all procedures (Portes and Rumbaut 2012).

Participants

The current study used the first two waves (here referred to as time 1 or T1 and time 2 or T2) of data from the Mexican-origin subsample ($n = 755$, 14% of original sample; 51.5% male; 96% from San Diego) because we were interested in depressive symptoms during adolescence particularly within this large US immigrant subpopulation. Sixty percent of adolescents were born in the USA and had a foreign-born parent. At T1, adolescents averaged 14.20

years ($SD = .87$) and 97% spoke Spanish. The majority of adolescents considered their family's current economic situation to be lower-middle class (43%). Adolescents attended 35 different schools, the majority (96%) of which included less than 59% total student enrollment that were either Black or Hispanic. On average, 58.27% ($SD = 22.29$) of students were eligible for subsidized school lunch. Of the 755 Mexican-origin youth surveyed at T1, 79% ($n = 599$; M age 17.84, $SD = .80$) participated in the survey at T2. No demographic differences existed between youth who remained in the study and those who did not.

Measures

As the purpose of the larger CILS study was to examine the cultural, educational, and psychosocial adaptation of youth with immigrant parents, many of the measures used were developed and validated specifically for use with immigrant populations (Portes and Rumbaut 2012). To provide evidence for the construct validity of the measures within the current study for the Mexican-origin population, we took a three-pronged approach consistent with recommendations by Knight et al. (2009). First, we provide evidence of the convergent validity of the items, via the similarity to more comprehensive measures used with this population or through correlations with measures included in the larger study. Second, we provide evidence of criterion-related validity (i.e., the measures behave in predictable ways) through the examination of the direction of correlations with related constructs. Third, we use a confirmatory factor analysis (CFA) to verify the factor structure of the study measures within the CILS Mexican-origin sample. The CFA model estimated in *Mplus 7.3* included one latent factor for each study measure and had good model fit, $\chi^2(733) = 864.25$ ($p = .001$); $CFI = .93$; $RMSEA = .02$ (90% CI, .011, .019). Items are loaded on the latent factor of interest, as reflected by significant factor loadings for each item (listed below for each measure).

Background Variables (T1) The CILS included adolescents' reports on their father's and mother's highest levels of education (1 = *elementary school or less*, 6 = *college graduate or more*) used as auxiliary variables in the current study. It also included adolescents' reports on what country they were born (i.e., recoded to represent *nativity*; 0 = *US born*, 1 = *foreign born*) and their gender (0 = *girls*, 1 = *boys*).

Subjective Economic Hardship (T2) The CILS included two items that measure adolescents' reports of subjective economic hardship ($\alpha = .60$; inter-item $r = .42$): "Compared with 3 years ago, do you think your family's economic situation now is..." and "And three years from now, what do you think your family's economic situation will be?" Responses were on a 5-point Likert

scale (1 = *much better*, 5 = *much worse*), which were averaged to create an overall score. These items are consistent with work with low-income and Mexican-origin families that recommends the use of subjective economic hardship items to provide psychological meaning to poverty (Barrera et al. 2001; Roosa et al. 2005). A CFA supported the factor structure of this measure for the current Mexican-origin sample (factor loadings $\geq .60$).

Acculturation (T2) The CILS included a four-item measure of English language use that we used to assess adolescents' linguistic acculturation. The four items asked about adolescents' ability to speak, read, write, and understand English. These items are consistent with items on the more comprehensive validated Acculturation Rating Scale for Mexican Americans (ARSMA-II; Cuellar et al. 1995). Furthermore, Roche et al. (2012) found evidence of the factor structure of this measure for Mexican Americans. Responses were on a 4-point Likert scale (1 = *not at all*, 4 = *very well*; $\alpha = .92$; M inter-item $r = .74$) and were averaged to create an overall scale. The CFA supported the factor structure of this measure for the current Mexican-origin sample (factor loadings $\geq .85$).

Perceived Discrimination (T2) The CILS included seven items that measure adolescents' perceived discrimination. To measure *general perceived discrimination*, we used adolescents' reports on four items representing if they have ever felt they had discriminated against, and if they felt they had ever been discriminated against by White Americans, Latinos, or African Americans, in general (1 = *yes*, 0 = *no*). To measure *perceived school discrimination*, we used adolescents' reports on three items asking if they felt they had ever been discriminated against by teachers, students, or counselors (1 = *yes*, 0 = *no*). Items were summed to create scales. We did not compute coefficient alpha for the indexes of perceived discrimination. Coefficient alpha is not an appropriate measure of reliability for these scales because they are defined by an aggregation of relatively independent indicators (see Streiner 2003). The CFA supported the factor structure of these measures for the current Mexican-origin sample (factor loadings $\geq .69$, general discrimination; factor loadings $\geq .76$, school discrimination).

Negative School Safety (T2) The CILS included eight items (e.g., *I do not feel safe*) that assessed adolescents' negative perceived school safety. Responses for the first four items were on a 4-point Likert scale (1 = *disagree a lot*, 4 = *agree a lot*), and for the remaining items, on a 3-point Likert scale (1 = *never*, 3 = *more than twice*). Items were standardized prior to creating a mean score ($\alpha = .69$; M inter-item $r = .22$). The CFA supported the factor structure of this measure for our Mexican-origin sample (factor loadings $\geq .34$).

Familism Values (T2) The CILS included the three-item Components of Familism Scale (Portes and Rumbaut 2001; e.g., "When someone has a serious problem, only relatives can help"; $\alpha = .60$; M inter-item $r = .33$). These items are consistent with later validity work on a more comprehensive cultural values measure later developed for Mexican-origin families (Knight et al. 2009). Furthermore, Roche et al. (2012) found evidence of the factor structure of this measure for Mexican Americans. In the current sample, the measure correlated positively with a measure of enculturation. Responses, on a 4-point Likert scale (1 = *disagree a lot*, 4 = *agree a lot*), were averaged to create an overall scale. The CFA supported the factor structure of this measure for the current Mexican-origin sample (factor loadings $\geq .37$).

Family Cohesion (T2) The CILS included the three-item Components of Family Cohesion Scale (Portes and Rumbaut 2001; e.g., "Family members like to spend free time with each other"; $\alpha = .84$; M inter-item $r = .64$) as reported on by adolescents. Responses, on a 4-point Likert scale (1 = *never*, 5 = *always*), were averaged to create an overall scale. The CFA supported the factor structure of this measure for the current Mexican-origin sample (factor loadings $\geq .76$).

School Connectedness (T2) The CILS included 6 items that measure adolescents' perceptions of their school connectedness (e.g., "There is real school spirit") with a 4-point Likert scale (1 = *disagree a lot*, 4 = *agree a lot*; $\alpha = .73$; M inter-item $r = .31$). We averaged items to create an overall scale. The CFA supported the factor structure of this measure for the current Mexican-origin sample (factor loadings $\geq .36$).

Depressive Symptoms (T1, T2) The CILS included a five-item short form of the Center for Epidemiological Studies Depression Scale (CES-D short form; Radloff 1977). Adolescent respondents rated the frequency that each of the symptoms occurred on a 4-point Likert scale in the past week (0 = *rarely*, 3 = *most of the time*). Items were summed (e.g., "felt sad"; $\alpha = .77$; M inter-item $r = .45$). Grzywacz et al. (2006) found initial validation evidence for using CES-D short forms with Mexican immigrants. Based on the results of the CFA with the current Mexican-origin sample, we dropped one item ("parents do not like me much") originally included in CILS because of poor fit and a factor loading below .30. The factor structure of the remaining four items was supported (factor loadings $\geq .50$).

Analytic Plan

To examine our study hypotheses (see Fig. 1 for conceptual model), we used path analyses conducted in *Mplus* 7.3 (Muthén and Muthén 1998–2014). To

improve the quality of estimation under conditions of missing data, we used full maximum likelihood robust estimation, which uses all available data ($N = 755$) and the inclusion of auxiliary variables (i.e., T1 subjective economic hardship, mothers' and fathers' education levels, acculturation and enculturation, general and school discrimination, T2 interview status; Enders 2010). The models were fully saturated, and model fit was not available. The independent variables included adolescents' T2 subjective economic hardship, acculturation, perceived general and school discrimination, and negative perceived school safety. The dependent variable was adolescents' T2 depressive symptoms (after controlling for prior levels of T1 depressive symptoms resulting in the prediction of residual variance; Selig and Little 2012). Adolescents' nativity was included as a covariate to address potential third-variable influences. Adolescents' school was included as a cluster variable taking into account the interdependent nature of the sample of adolescents drawn from the same schools. The intraclass correlation (ICC) for the degree of similarity between students within schools on depressive symptoms was small ($ICC = .0038$), confirming our choice of adjusting the standard errors in the models for the impact of youth school and not employing multilevel modeling. In all models, we correlated the independent variables.

To test the moderating role of adolescents' gender, T2 familism values, family cohesion, and school connectedness, first, all interaction terms including the independent variables and the moderator of interest (e.g., general perceived discrimination \times familism values) were included in the path model. Second, we dropped all nonsignificant interaction terms with the final model including only significant interaction terms, as retaining interactions that are not significant contributes to an increase in standard errors (Aiken and West 1991). All variables were centered (or dummy coded in the case of gender; 0 = *girls*, 1 = *boys*) prior to the creation of interaction terms. We conducted follow-up analyses for significant interactions as outlined by Aiken and West (1991), including plotting and testing for significant simple slopes +1 SD above and -1 SD below the mean on the continuous moderators. For gender, we examined the simple slopes using multiple group models.

Results

Descriptive statistics and correlations for all study variables are in **Table 1**. We depicted results of the path analyses in **Table 2**. The direct and moderation effects models explained a significant proportion of variance in adolescents' depressive symptoms at age 17. Starting with the direct effects, adolescent girls had higher levels of depressive symptoms at age 17 as

Table 1. Descriptive statistics and bivariate correlations for study variables ($N = 755$)

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Gender	–											
2. Nativity	-.03	–										
3. T1 depressive symptoms	-.19*	.10*	–									
4. T2 economic hardship	-.09*	-.05	.09†	–								
5. T2 acculturation	-.03	-.32*	-.04	.00	–							
6. T2 general discrimination	.05	.00	.08*	-.00	.08†	–						
7. T2 school discrimination	.03	-.01	.09*	-.01	.12*	.54*	–					
8. T2-negative school safety	.20*	.00	.04	.06	-.06†	.18*	.21*	–				
9. T2 familism values	.08*	.18*	-.01	-.10*	-.19*	-.03	-.00	.14*	–			
10. T2 family cohesion	.00	.17*	-.12*	-.19*	-.01	-.10*	-.05	-.08*	.12*	–		
11. T2 school connectedness	-.08*	.06	-.11*	-.09*	-.04	-.22*	-.22*	-.37*	-.02	.13*	–	
12. T2 depressive symptoms	-.18*	.02	.33*	.24*	-.03	-.18*	.12*	.14*	-.04	-.21*	-.20*	–
Total sample												
M	.52	.40	2.73	2.38	3.61	1.30	.66	.01	1.92	3.71	3.08	2.58
SD	.50	.49	2.57	.75	.50	1.18	.88	.56	.65	.98	.51	2.64
Male sample												
M	–	.38	2.27	2.32	3.60	1.35	.69	.12	1.96	3.71	3.04	2.11
SD	–	.49	2.34	.73	.48	1.18	.90	.60	.62	.98	.52	2.46
Female sample												
M	–	.41	3.21	2.44	3.62	1.23	.62	-.11	1.87	3.71	3.13	3.08
SD	–	.49	2.70	.76	.52	1.18	.86	.49	.66	.98	.51	2.73

Gender coded as 0 = girls ($n = 366$), 1 = boys ($n = 389$). Nativity coded as 0 = *US born* ($n = 456$), 1 = *foreign born* ($n = 299$)
 T1 = time 1 (age 14); T2 = time 2 (age 17)

† $p < .10$; * $p < .05$

compared with adolescent boys (for means, see Table 1). Depressive symptoms were stable from ages 14 to 17. Of note, the mean on depressive symptoms at both time points is low (~2) compared with the maximum of 12. Approximately 90% of the sample did not reach a clinical significance level of symptoms (i.e., reporting less than three symptoms; 63 and 67% of youth reported symptoms only rarely or some of the time, and 30 and 21% of youth reported 1–2 symptoms occasionally or most of the time, at T1 and T2, respectively). Higher levels of subjective economic hardship, general discrimination, and negative perceived school safety were associated with higher levels of depressive symptoms. Higher levels of family cohesion were associated with lower levels of depressive symptoms.

Turning to the moderation effects, the direct effects of economic hardship and general discrimination were qualified by significant interactions.

Table 2. Results of regression models predicting adolescents' depressive symptoms at age 17 ($N = 755$)

	<i>Variable Direct effects model</i>			<i>Moderation effects model</i>		
	<i>b</i>	<i>SE</i>	<i>B</i>	<i>b</i>	<i>SE</i>	<i>B</i>
Covariates (time 1)						
Nativity	.09	.20	.02	.11	.19	.02
Depressive symptoms (age 14)	.25*	.04	.24	.23*	.04	.22
Predictors (time 2)						
Economic hardship	.58*	.15	.17	.56*	.15	.16
Acculturation	-.17	.23	-.03	-.13	.23	-.02
General discrimination	.27*	.13	.12	.26*	.12	.12
School discrimination	.01	.16	.00	-.30†	.16	-.10
Negative school safety	.41*	.21	.09	.95*	.39	.20
Moderators (time 2)						
Gender	-.82*	.16	-.16	-.87*	.15	-.16
Familism values	-.08	.17	-.02	-.06	.17	-.01
Family cohesion	-.31*	.09	-.11	-.35*	.09	-.13
School connectedness	-.51	.37	-.10	-.44	.36	-.09
Significant interaction terms						
Economic hardship × school connectedness				-.62*	.26	-.10
General discrimination × family cohesion				.14*	.05	.06
General discrimination × school connectedness				-.23†	.13	-.06
School discrimination × gender				.53*	.20	.13
Negative school safety × familism				.44*	.20	.06
Negative school safety × gender				-.87*	.42	-.14
R^2	.23*	.04		.26*	.04	

Time 1 = age 14. Time 2 = age 17. The effect of nativity (mean centered) represents an average effect. Gender coded as 0 = *girls*, 1 = *boys*. Nativity coded as 0 = *US born*

There was an interaction between *economic hardship* and school connectedness (**Fig. 2**), revealing that under conditions of low levels of school connectedness, high levels of economic hardship were associated with high levels of depressive symptoms, $b = .88$, $SE = .23$, $p = .000$. There was no association between economic hardship and depressive symptoms under conditions of high school connectedness, $b = .25$, $SE = .18$, *ns*. For *general discrimination*, there were interactions with family cohesion and school connectedness. Simple slope analyses revealed that under conditions of high levels of family cohesion (**Fig. 3**), high levels of general discrimination were associated with high levels of depressive symptoms, $b = .40$, $SE = .13$, $p = .002$. There was no association under conditions of low levels of family cohesion, $b = .13$, $SE = .13$, *ns*. Conversely, for low levels of school connectedness, high levels of

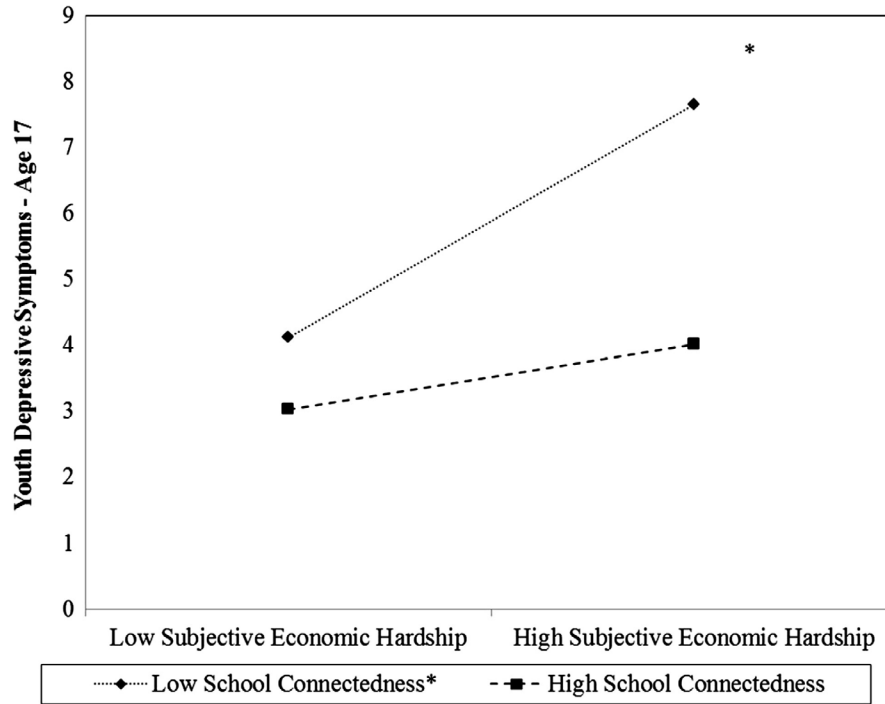


Fig. 2. Association between economic hardship and depressive symptoms at age 17 as moderated by school connectedness (age 17). * $p < .05$

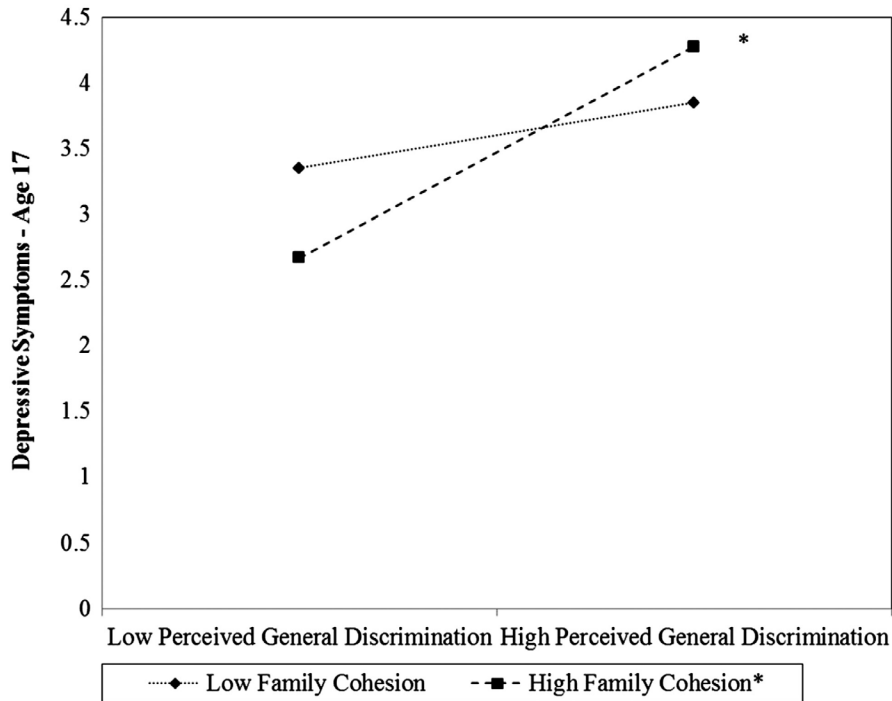


Fig. 3. Association between general discrimination and depressive symptoms at age 17 as moderated by family cohesion (age 17). * $p < .05$

general discrimination were associated with high levels of depressive symptoms, $b = .38$, $SE = .15$, $p = .01$. There was no association under conditions of high levels of school connectedness, $b = .15$, $SE = .13$, ns . For *school discrimination*, there was an interaction with gender. Simple slope analyses revealed that neither simple slope was significant (girls: $b = -.34$, $SE = .22$, ns ; boys: $b = .24$, $SE = .16$, ns).

There were also significant interactions between *negative school safety* with familism values and gender. Simple slope analyses revealed that under conditions of high levels of familism values (see **Fig. 4**), high levels of negative school safety were associated with high levels of depressive symptoms, $b = 1.23$, $SE = .43$, $p = .004$. Under conditions of low levels of familism values, the association was at the trend level, $b = .14$, $SE = .08$, $p = .083$. The interaction with gender revealed that for adolescent girls, $b = 1.23$, $SE = .43$, $p = .004$, but not adolescent boys, $b = .15$, $SE = .13$, ns , negative school safety was related to higher levels of depressive symptoms.

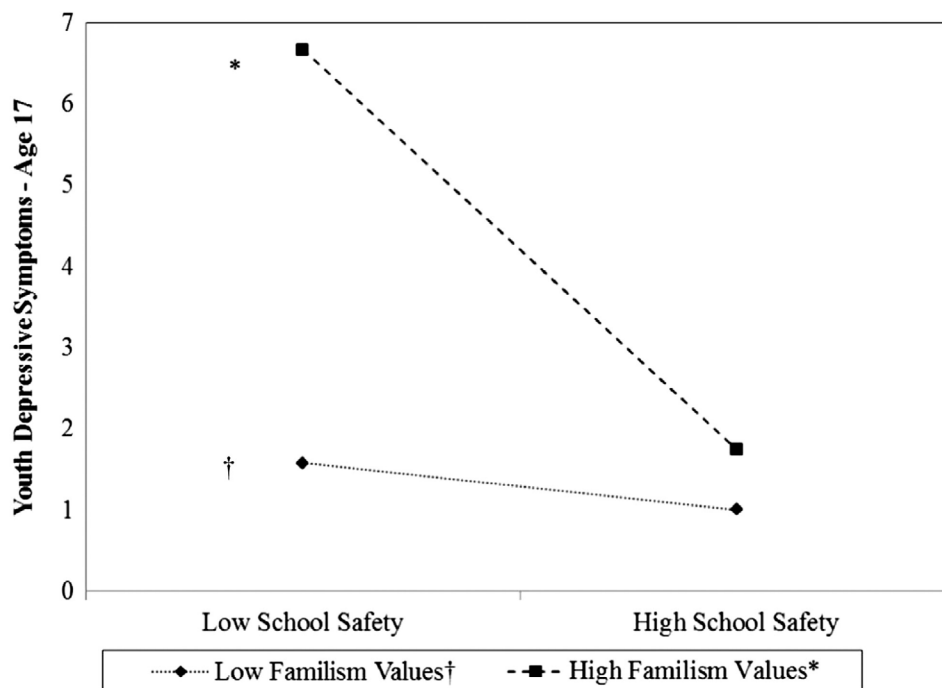


Fig. 4. Association between negative school safety and depressive symptoms at age 17 as moderated by familism values (age 17). † $p < .05$; * $p < .05$

Discussion

The current study examined protective factors that might minimize the links between several contextual stressors and depressive symptoms among Mexican-origin second-generation adolescents. Findings supported perceived economic hardship, perceived discrimination, and negative school safety as risk factors for youth's depressive symptoms, with variation by youth gender, familism values, family cohesion, and school connectedness. Whereas prior theoretical and empirical work has established the role of these stressors in the development of depressive symptoms, our study, through the benefit of an ethnic-homogenous design, extended previous research by examining the effects of *both* the family and school contexts on stressors conjointly among Mexican-origin adolescents. This study contributes to the field of child development by considering the impact of the understudied school context and to the field of school psychology by underscoring cultural factors relevant to the development of psychological concerns among Mexican-origin youth from immigrant families.

In support of our hypothesis and consistent with prior research with Mexican-origin adolescents (Deardorff et al. 2003; Delgado et al. 2011, 2013), results indicated that greater perceptions of economic hardship, general discrimination, and negative school safety were related to higher levels of depressive symptoms. Concerning the relationship between negative school safety and depressive symptoms, this finding was only significant for girls. Results of this study are consistent with previous findings regarding the role of negative perceived school safety as a risk factor for youth maladjustment (see Hilarski 2004 for a review). To our knowledge, however, this study is the first to find these relationships among Mexican-origin adolescents, underscoring the importance of this understudied variable as a contextual stressor in this population, as well as to examine differences by gender. Overall, the current study underscored the need to focus resources on alleviating stress related to economic hardship, discrimination, and school danger for second-generation Mexican-origin adolescents.

Results indicated that familism values were a significant moderator, with high levels of negative school safety values being associated with high levels of depressive symptoms when familism values were high. This finding is consistent with previous research that has found that familism values, though sometimes serving a protective function (Umaña-Taylor 2011), can also serve to be predictive of internalizing symptoms under conditions of high stress (Stein et al. 2014). It may be that, due to a desire to remove burden on parents, youth with high familism values might be less willing to discuss perceptions of negative school safety with their parents, thus leading to higher levels of depressive symptoms (Nolle et al. 2012).

As hypothesized, results suggest that school connectedness buffered the relationships between both subjective economic hardship and perceived general discrimination and depressive symptoms among Mexican-origin youth. Indeed, research has underscored the role of school connectedness as a protective factor against adolescents' depression among general adolescent populations (Joyce and Early 2014). As such, it appears that feelings of attachment, commitment, and involvement in one's school may be sufficient to overcome discriminatory messages from outside of school or the negative impact of economic challenges. Again, however, to our knowledge, this study is the first to find this relationship among Mexican-origin adolescents. It is interesting to note that school connectedness did not serve as a protective factor against perceived school discrimination; it may be that additional feelings of attachment and involvement to school may serve as a risk factor when schools present as a source of negative discriminatory messages (Georgiades et al. 2013).

Results also point to family cohesion as an important moderator, with high levels of general discrimination being associated with high levels of depressive symptoms under conditions of high levels of family cohesion. This finding is consistent with previous related research, which found that increased family cohesion, when coupled with increased family cultural conflict, was associated with greater mental health concerns in Latina/o individuals (Rivera et al. 2008). It may be that for youth who have increased family cohesion, the impact of discrimination is more salient and thus leads to higher levels of depressive symptoms. Alternatively, experiences of discrimination may heighten family cohesion, during a developmental period in which adolescents in the USA may be searching for independence from their parents, thus, leading to increased depressive symptoms. Finally, it is possible that youth in families with high family cohesion could internalize messages of discrimination experienced by their immigrant parents (who are more likely to indicate perceiving discrimination; Ayón et al. 2010). Future research needs to investigate further these possible explanations.

Limitations and Future Directions

This study is not without limitations. It is noteworthy that the data examined in this study was collected approximately 20 years ago, which might limit the salience of the results. Specifically, certain changes in the cultural experience of Mexican-origin adolescents within the USA have occurred within the previous 20 years, including increased linguistic diversity, income inequality, and diversity in legal status (Rumbaut 2014). Despite these differences, many aspects of their cultural and contextual experience (e.g., educational attainment, school segregation, family cultural variables) have remained consistent

(Portes and Hao 2004; Rumbaut 2014), and, thus, the results of this study may hold a significance. Further, the use of such large, national data sets allows for the engagement in such studies (i.e., those developing and examining theories regarding student, school, and family factors), with the understanding that additional studies, using local and more recent data, will contribute to a more nuanced understanding of the topic (Warren 2014).

The correlational nature of our study limits our ability to make conclusions regarding the directionality of the findings. Therefore, it is not clear whether youth's experiences of stressors are leading to the development of depressive symptoms or those youths with higher levels of depressive symptoms perceive higher levels of stressors. It is important for future research to examine the bi-directional associations between stressors and depressive symptoms. Relatedly, the design of the CILS (and many other large national studies) includes a reliance on a small set of items to measure constructs and inherently limits the breadth and reliability of the items that we used to measure our constructs. This may have led to the attenuation of the observed empirical relations among the study constructs and to the few moderation findings that we had. Furthermore, our measure of acculturation to the USA only captured one aspect of acculturation: linguistic acculturation. In order to address this concern, we sought to control for other important behavioral aspects of acculturation, including nativity, and included in the model-related variables assessing cultural values, such as familism values, affiliated with acculturation (Schwartz et al. 2010). It remains important for future studies to use multidimensional models to represent acculturation that take into account, for instance, nativity, language, years in the USA, and subjective measures of acculturation. As such, we view this initial test of the associations under investigation as being conservative, thus, warranting replications and extensions of this study.

Our sample was limited to only Mexican-origin adolescents from two specific areas in the USA during a time of increased immigration, which may limit generalizability of the findings. While immigrant youth from other countries also experience depressive concerns, we opted to focus exclusively on this population as Mexican-origin youth constitute the largest group of immigrants in the USA (US Census Bureau 2010) and demonstrate the highest levels of depressive symptoms compared with other ethnic minority groups (Anderson and Mayes 2010). Future research should examine these relationships within other cultural groups to see whether these contextual stressors and protective factors play a similar role in the development of depressive symptoms. Despite these limitations, findings from this study support the notion that prevention and treatment efforts among Mexican-origin adolescents need to take into account the important role of the school and family contexts in the lives of these youth.

Implications for Practice

The current results have important implications for practice in schools. Specifically, school connectedness has been found to vary across schools, with positive classroom management strategies, increased participation in school activities, fair disciplinary practices, and increased sense of school safety all being linked with increased school connectedness (McNeely et al. 2002). Interventions for increasing connectedness in schools which incorporate social skills training for youth, classroom management training for teachers, and developmental training for parents, have shown success at reducing behavioral and emotional concerns and increasing psychological well-being in adolescents (e.g., Catalano et al. 2004). Thus, school-based professionals, including school psychologists, who want to promote mental health, might seek to modify individual risk factors by recognizing the importance of the school environment and working to increase school connectedness (Malecki and Demaray 2003). Specifically, school-based professionals can promote school connectedness by not separating students into "tracks," providing mentorship programs for youth, encouraging parents to talk to their children about their schooling, and supporting struggling youth in building positive friendships (Monahan et al. 2010). However, future studies should seek to examine these strategies, as well as culturally informed intervention programming, to build school connectedness with Mexican-origin youth specifically.

Compliance with Ethical Standards — All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study. The authors declare that they have no conflict of interest.

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