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Latino Adolescents' Loneliness, Academic Performance, and the Buffering Nature of Friendships

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Abstract

This longitudinal study examined Latino adolescents' feelings of loneliness and the repercussions of loneliness for later educational success. Participants were 640 Latino students (56% girls, 62% Mexican/Mexican–American) who reported on loneliness across the first 2 years of high school. Growth mixture modeling identified three distinct loneliness trajectory classes for the Latino adolescents—consistently low, chronically high, and low but increasing. Language brokering, language use, and school mobility emerged as predictors of class membership. Increasingly and chronically lonely youth experienced academic difficulty, both in terms of academic progress and exit exam success, but support from friends served as a buffer of the negative relationship between loneliness and academic success. This study highlights the pernicious effects of loneliness and suggests promoting prosocial friendship support as a means of facilitating more positive academic outcomes for Latino youth.

Keywords

Latino; Loneliness; Academic achievement; Friendship; Adolescents

Introduction

The desire to connect to others and form close interpersonal relationships is a fundamental human need (Baumeister and Leary 1995). This desire to belong is particularly salient during adolescence, as individuals begin to explore who they are and how they fit into the world around them (Erikson 1968). Adolescents spend increasing amounts of time with same-age mates and place heightened importance on relationships within and acceptance from their peer groups (Brown et al. 1986; Steinberg and Morris 2001). Unfortunately, no one feels accepted at all times, and loneliness is something with which many individuals struggle across the life course. Loneliness entails "cognitive awareness of a deficiency in one's social and personal relationships, and the ensuing affective reactions of sadness, emptiness, or longing" (Asher and Paquette 2003, p. 75). Although intermittent feelings of loneliness are normative, chronic loneliness can wield negative repercussions across developmental domains. The current study seeks to examine Latino adolescents' feelings of loneliness across the first 2 years of high school, how changes in loneliness exact a toll on adolescents' academic development, and whether perceived support from friends might mitigate the negative effects of chronic loneliness.

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Loneliness and Children and Adolescents' Developmental Competencies

The link between loneliness and other facets of socio-emotional well-being is well-investigated in the extant literature. Low levels of peer acceptance and high levels of rejection are associated with heightened feelings of loneliness (Crick and Ladd 1993; Parkhurst and Asher 1992; Pedersen et al. 2007; Renshaw and Brown 1993). In both childhood and adolescence, feelings of loneliness are both predictive of and predicted by experiences of victimization (Crick and Bigbee 1998; Kochenderfer and Ladd 1996; Nishina et al. 2005; Storch et al. 2003). Lonely children and adolescents generally have fewer friends (Asher et al. 1984; Asher and Wheeler 1985; Pedersen et al. 2007), and they tend to report lower quality in the friendships they do have (Asher and Paquette 2003; Nangle et al. 2003; Parker and Asher 1993). Closely linked to this, children and adolescents reporting more loneliness also are more likely to be isolated and socially withdrawn, and they report lower self esteem, exhibit more social anxiety and social avoidance, and report more suicidal ideation and suicide attempts (Crick and Ladd 1993; Heinrich and Gullone 2006; Renshaw and Brown 1993; Rubin et al. 2009). Early experiences of loneliness are predictive of later depressive symptoms in adolescence (Fontaine et al. 2009; Heinrich and Gullone 2006).

Latinos appear to be at particular risk for socioemotional distress. Compared to European American, African American, Asian American, and Native American children and adolescents, Latino youth are more likely to report depressive symptoms (Harris et al. 2006; Sen 2004; Siegel et al. 1998; Twenge and Nolen-Hoeksema 2002) and physical symptoms (McLaughlin et al. 2007). Latino youth also have a greater risk for self-injury (Sen 2004), exhibit more problem behaviors (Jessor et al. 1995), and more often report anxiety and anxiety-related symptoms (McLaughlin et al. 2007). Taken as a whole, this research suggests that Latino youth are at particular risk for socioemotional distress in general, although comparisons of perceived loneliness across race/ethnic groups has not been previously examined.

Much less is known about the relationship between loneliness and academic adjustment, although recent reviews of the loneliness literature suggest a link between the two (Asher and Paquette 2003; Heinrich and Gullone 2006). In studies with predominantly European American, middle class samples, children reporting greater loneliness reported lower academic competence, expressed less school liking, and performed more poorly on reading and math achievement tests (Guay et al. 1999; Kochenderfer and Ladd 1996). Studies of these relationships in adolescence are more rare. As an exception, Juvonen et al. (2000) found that disruptions in adolescents' mental health, a measure that included loneliness and other indicators of psychological adjustment (i.e., depression, anxiety, self worth), were related to poorer school functioning, including both grades and school absences. Work in other mental health domains further underscores the link between adolescents' socioemotional well-being and academic performance (Chen et al. 2000; Fauber et al. 1987; Mistry et al. 2009).

The current study seeks to better illuminate the relationship between loneliness and educational outcomes, including academic progress and performance on reading and mathematics achievement tests. The study focuses on these relationships specifically during adolescence, given the paucity of research covering this developmental epoch. Understanding predictors of academic adjustment for Latino adolescents is particularly critical given that Latinos' dropout rates are approximately double that of every other race/ethnic group (US Department of Commerce 2006), and Latino students have the lowest post-secondary enrollment rates in the United States (US Department of Commerce 1996–2006). As such, Latino adolescents are at a double disadvantage—they are at greater risk for both socioemotional distress and academic struggles than peers from other race/ethnic

groups, and understanding the interplay of these developmental risks is critical to developing appropriate interventions.

Loneliness and the Buffering Influence of Peers

At its core, loneliness reflects a desire to connect to others and a recognition of the deficiencies in one's existing social relationships. Not surprisingly, children and adolescents who experience higher levels of peer acceptance are less likely to report feeling lonely (Asher et al. 1984; Parker and Asher 1993). In addition to staving off feelings of loneliness, friendships can also yield positive benefits for children and adolescents' academic adjustment. For example, adolescents who view their friendships more positively report greater school engagement and earn higher grades (Berndt and Keefe 1995; Cole et al. 2007). More emotionally supportive friendships also are associated with a more attenuated decline in grades across the transition to middle school (Aikins et al. 2005). Whether support from friends can buffer the negative repercussions of loneliness for adolescents' academic performance is a critical question examined in the current study.

The Current Study

This study used longitudinal data to investigate Latino adolescents' loneliness and the consequences of such feelings for later educational success. Specifically, the current study sought to address four primary research questions. First, can Latino adolescents be distinguished by different developmental trajectories of loneliness across the first 2 years of high school? The study focused attention on adolescents' loneliness immediately following the transition to high school, as school transitions have the potential to disrupt existing peer relationships. Given prior research on loneliness, which suggests that approximately 10% of children and adolescents are chronically lonely (Asher and Paquette 2003), it was expected that at least two loneliness trajectories would emerge, with one trajectory characterized by consistently low levels of loneliness and a second characterized by chronically high levels of loneliness. Analyses also allowed for the possibility of additional trajectories (e.g., high but decreasing, low but increasing).

The second research question explored whether certain individual characteristics might be shared by students in different trajectory classes. For example, Polo and Lopéz (2009) found that first generation Mexican–American adolescents reported more loneliness than those born in the US, with both English proficiency and acculturative stress contributing to this relationship. The current study explored whether a host of ethnicity-related characteristics such as these (i.e., ethnicity, nativity, language brokering, language use at home and with peers, percent same-ethnicity peers in school) influenced adolescents' loneliness trajectories. Moreover, given the focus on experiences of loneliness following the transition to high school, the study also examined whether transition experiences (i.e., transitioning with the majority of peers) and subsequent school mobility influenced loneliness trajectories. Previous research has shown that adolescents' feelings of loneliness increase across the transition to high school (Benner and Graham 2009), and school transitions and subsequent mobility might influence adolescents' ability to maintain social relationships.

The third research question explored whether membership in certain trajectory classes was associated with adolescents' later educational outcomes. The current study included two markers of adolescents' academic success—academic progress and exit exam achievement test scores. Academic progress (e.g., grades, course failures, advanced course-taking) represents students' movement through their local educational systems; although statewide curricular requirements establish certain standards for course content, districts have some flexibility in assessing students' progress and course placements. In contrast, exit exam

success uses state assessments to determine content mastery in two specific domains, mathematics and English. Given prior research, it was hypothesized that adolescents in loneliness classes characterized by high or increasing levels of loneliness would struggle more academically.

The final research question investigated whether support from friends might buffer the negative link between loneliness and adolescents' academic outcomes. Although having both high levels of loneliness and support from friends simultaneously is seemingly counterintuitive prima facie, hearkening back to the definition of loneliness provides elucidation—loneliness is, at its core, an affective reaction to deficiencies in social relationships, deficiencies that can be either in relation to the *quality* or *quantity* of those relationships. As such, an adolescent could feel lonely because she does not feel a strong connection to the social agents in her life or because she has only one or two close friendships but wants to have more social connections. In the current study, it was expected that support from friends would exert a buffering influence on adolescents high in loneliness in particular, as these adolescents would be at distinct risk for poorer socioemotional and academic adjustment.

Method

Participants

Participants were 640 Latino students (56% female) taking part in a larger longitudinal study. Students identified their race/ethnicity from one of nine categories or provided a written description; students selected for the current study identified as either Mexican/Mexican–American (62%) or Latino/other country of origin (38%; predominantly from El Salvador and Guatemala). Most participants were born in the United States—80% were second-generation (i.e., at least one foreign-born parent), and an additional 10% were third-generation (i.e., both parents born in the US)—whereas only 10% of students were foreign-born. Adolescents were initially recruited in two cohorts from 11 middle schools in metropolitan Los Angeles, with schools chosen from among those of comparable size in demographically similar low-income/working class neighborhoods. Participants in the current study transitioned to 55 high schools across the greater Los Angeles area. Data for this study are drawn from adolescents' first 2 years of high school. In total, 64% of adolescents had valid data for all four time points, and an additional 23% had data for three of the four time points.

Procedures

Each school year, students with both parental consent and student assent completed confidential questionnaires during the middle of both the fall and the spring semesters. This study specifically drew upon student data from the fall and spring semesters of grades 9 and 10 (four waves of data). During survey administration, trained research assistants (graduate and undergraduate students) read all items aloud as small groups of adolescents provided individual responses on their questionnaires. During each questionnaire administration, students were generally pulled from elective classes; administration typically occurred in empty rooms on the school campus (e.g., library, cafeteria, classroom). Questionnaires took approximately 40 min to complete, and students received small monetary compensation for their participation.

Measures

Measures for the current study were drawn from student surveys, school records, and state databases. School record data (i.e., grades, test scores) were collected for all participating adolescents each semester. School Latino enrollment data were downloaded from the

California Department of Education (CDE) website (www.cde.ca.gov) for each adolescent's high school. Table 1 displays correlations and descriptive statistics for each measure.

Loneliness at School—The Loneliness Scale (Asher and Wheeler 1985) measured adolescents' feelings of loneliness at school (e.g., "I have nobody to talk to," "I get along with other kids"). Minor modifications to the 16-item scale were made to make it more age-appropriate for adolescents. For each item, students rated how true the statement was for them, from 1 (*always true*) to 5 (*not true at all*). Loneliness was measured longitudinally during the fall and spring semesters of 9th and 10th grades (four time points total). Items were coded such that higher mean scores indicated more loneliness at school (average Cronbach's α = .91).

Academic Progress—The measure of academic progress included four indicators from the spring semester of 10th grade. Using school records data, grades for all courses (core content and electives) were coded on a 5-point scale (A = 4 and F = 0) and then averaged to create a composite GPA. Students' mathematics course taking sequence was identified using a coding scheme from Add Health research (see Riegle-Crumb 2006 for example); math sequence was coded on a scale ranging from 1 (*no math*) to 9 (*calculus*). Adolescents self-reported their school engagement using the Perceived Social Norms for Schoolwork and Achievement during Adolescence (Witkow 2006). Items (e.g., "I pay attention in class") were rated on a 5-point scale, ranging from 1 (*hardly true at all*) to 5 (*always true*). Higher mean scores reflected greater academic engagement (α = .82). Adolescents also self-reported the number of classes they failed in the spring semester.

Exit Exam Success—Whether students met minimum criteria for passing the English and mathematics tests from the California High School Exit Exam (CAHSEE) was assessed with data from students' school records. In order to graduate from a California high school, students are required to pass both sections of the test. Students who fail one or both portions of the CAHSEE have multiple opportunities to retake the test. The current study focuses on whether or not students passed the two sections of the CAHSEE on their first attempt (at the end of 10th grade).

Support from Friends—Support from friends was assessed using three items adapted from a shortened version of the Social Anxiety Scale for Adolescents (La Greca and Lopez 1998). Adolescents rated the items (i.e., "I can count on my friends when things go wrong," "I have friends with whom I can share my joys and sorrows," "I can talk about my problems with my friends") on a scale ranging from 1 (*not at all*) to 5 (*all the time*), with higher mean scores reflecting greater support from friends (α = .85).

Gender—Adolescents self-reported their gender (0 = boys, 1 = girls).

Ethnicity—Adolescents identified themselves as either Mexican/ Mexican–American (1) or Latino other country of origin (0).

Nativity Status—Adolescents indicated whether they were born in the US (1) or born abroad (0).

Language Brokering—Adolescents rated the frequency with which they translated for their parents using a 4-point scale. Those who reported translating "always" or "a lot" received a score of 1 and were labeled as primary language brokers (25%). Those who reported translating "a little bit" or "never" received a score of 0 and were labeled as non-language brokers (75%).

Language Use—Adolescents were asked to identify the language they spoke at home and with friends at school. For home language use, responses were coded as English only (15%), Spanish only (40%), or English and Spanish (45%); two dummy-coded variables were created to capture Spanish only and English and Spanish, with English only as the reference group. Due to unequal distributions, language use at school with peers was dichotomized—English only (72%) versus either Spanish only (2%) or English and Spanish (26%).

Percent Same-Ethnicity Peers—School race/ethnicity information from the CDE was used to identify the percentage of Latino students attending each adolescent's high school (M = 58.0, SD = 20.9).

School Transition Experience—Using data from the CDE, it was determined whether adolescents transitioned to high school with the majority of their middle school peers (i.e., within the expected school feeder pattern). Those who transitioned with the majority of peers were coded as 1 (78%), with all others coded as 0 (22%).

School Mobility—If the adolescent transferred schools one or more times during the first 2 years of high school, school mobility was coded as 1 (12%). Adolescents who remained in the same school across high school received a score of 0 (88%).

Analysis Plan—Growth mixture modeling (GMM; Muthén 2004) was used to answer the first research question. GMM estimates growth trajectories but allows for the possibility that sub-populations may exist in the data. As such, instead of modeling individuals' change across time around a single mean growth curve, GMM is a person-centered approach that provides a mechanism for understanding and accounting for the heterogeneity in a given population, essentially allowing for the possibility that there may be multiple mean growth curves for different subpopulations or classes of subjects (Muthén 2004). Growth mixture models with between two and five classes were fit to the loneliness variable; the number of random starts was increased to ensure the model converged on a global rather than local solution (Hipp and Bauer 2006). To determine the number of classes, two Information Criteria (i.e., Bayesian information criterion (BIC) and the sample size adjusted BIC (ABIC)) and a loglikelihood-based test (i.e., Lo-Mendel-Rubin (LMR) test) were examined, as recommended by Enders and Tofighi (2008), Muthén (2004), and Nylund et al. (2007). One of the greatest debates around GMM centers on identifying the appropriate number of classes (see Nylund et al. 2007 for discussion), but using these statistical criteria in combination with an investigation of the substantive meaning of the identified classes strengthens the confidence in selecting a given GMM model (Muthén 2003).

After identifying the *k*-class model that fit the data best, the next model integrated individual characteristics as predictors of class membership; inclusion of these auxiliary indicators adds an additional test of validity for the trajectory classes (Muthén 2003) as well as provides insights into the characteristics that distinguish each trajectory class. This analysis essentially combines the GMM with a multinomial logistic regression, an extension of binary logistic regression that is used when there are three or more categories in the outcome variable (Hosmer and Lemeshow 2000). In the case of the current study, three classes of loneliness were observed, and these three classes served as the outcome variables of interest for this analysis. Calculated odds ratios (ORs) captured the relative probability of being in a given class relative to a reference class for a given predictor. The reference group was rotated to explore all possible differences. The intercepts and slopes for each class were also examined as an additional check of model fidelity, essentially verifying the similarity of the trajectory classes for the model with and without these additional predictors.

A subsequent model examined whether trajectory class membership predicted Latino adolescents' later educational outcomes. Educational outcomes were modeled as two latent variables (i.e., academic progress, exit exam success). Latent variable analysis, akin to factor analysis, is more parsimonious, better accounts for the individual contribution of each measure, and allows for more precise modeling of measurement error (Bollen 1989). The final analysis introduced friendship support into the model, examining main effects of loneliness group and support from friends as well as the loneliness group-by-support interactions. This moderation analysis determined the extent to which support from friends mitigated the negative effects of loneliness on adolescents' educational success.

All analyses were conducted using M*plus* 5.2 (Muthén and Muthén 1998–2006). The current dataset contains data from students clustered within schools, and M*plus* accounts for such clustering and produces correctly adjusted standard errors in the model estimations. The current data-set also included some missing data, and the M*plus* estimation procedure handles missing data through full-information maximum likelihood (FIML), enabling inclusion of all available data in the analyses. Missing data are a potential source of concern for all longitudinal studies, and FIML is one of the preferred methods to allow generalization of results to the population (e.g., Arbuckle 1996). FIML does not estimate the missing data, as is the case with mean- or regression-based imputation techniques; rather, it fits the covariance structure model directly to the observed (and available) raw data for each participant (Enders 2001).

Results

Identifying Latent Profiles of Loneliness

The first research question examined whether changes in Latino adolescents' patterns of loneliness across the first 2 years of high school could best be described by a single or multiple developmental trajectories. Using evidence from multiple criteria, the 3-class model fit the data best. Specifically, the BIC and ABIC declined substantially from the 2- to 3-class model, and although the BIC and ABIC continued to decline somewhat across the 3-class to 5-class models, both showed the most substantial declines from two to three classes. Additionally, the LRT test indicated that the 3-class model fit the data better than the 2-class model. Each trajectory class was labeled based on developmental change across time. As seen in Fig. 1, one group of adolescents exhibited consistently low loneliness across 9th and 10th grades; this class, which comprised the majority of adolescents in the sample (78%), was labeled low-steady loneliness. A second class of adolescents reported consistently high feelings of loneliness; in total, 11% of the sample was in this chronically high loneliness class. Finally, 11% reported low loneliness initially but substantially increased in their feelings of loneliness across 9th and 10th grades; this class was labeled low-increasing loneliness.

The next set of analyses examined whether class membership differed as a function of individual characteristics. Unstandardized coefficients (*b*), standard errors (SE), odds ratios (ORs), and 95% confidence intervals for the ORs (95% CI) for all predictors appear in Table 2. Results indicate that girls were less likely to be in the low-increasing loneliness class than either the low-steady or chronically high loneliness classes. In relation to acculturation-related adolescent characteristics, Latino adolescents who served as language brokers were more likely to be in the low-increasing loneliness class than the low-steady loneliness class. Adolescents who spoke English only with friends and those with more same-ethnicity peers were less likely to be in the low-increasing loneliness class than the low-steady loneliness class. No other ethnicity-related characteristics were associated with class membership. Although transition experiences were not useful in distinguishing among loneliness classes,

mobile students were more likely to be in the low-increasing class than the low-steady class and marginally more likely to be in the low-increasing versus chronically high class.

Loneliness and Later Educational Success

A measurement model was conducted to determine model fit for the latent variables representing academic progress and exit exam achievement test success. The measurement model suggested adequate fit for the latent variables (χ^2 (7) = 39.0, $p < .001$; CFI = 0.943; RMSEA = .085). Standardized factor loadings for the academic progress indicator were as follows: GPA (.73), math sequence (.63), classes failed (−.53), and school engagement (.30). For exit exam success, factor loadings were .73 for the mathematics test and .71 for the reading test. All indicators loaded significantly on the latent variables at $p < .001$.

Next, based on estimated posterior probabilities, adolescents' most likely loneliness trajectory class was identified, and the subsequent analysis examined possible differences in academic outcomes by loneliness class, controlling for adolescents' individual characteristics. The resulting model fit the data well (χ^2 (50) = 98.7, $p < .001$; CFI = 0.923; RMSEA = 0.039). Results indicated that adolescents in the low-increasing loneliness class had poorer academic progress at the end of 10th grade ($\beta = -.16$, $p < .001$) and were less likely to have passed their high school exit exams ($\beta = -.14$, $p < .05$) than adolescents in the low-steady loneliness class. Adolescents in the chronically high loneliness class also were less likely to have passed the exit exams ($\beta = -.09$, $p < .05$) than adolescents in the low-steady loneliness class. No differences in academic outcomes between the low-increasing and chronically high loneliness classes emerged.

Loneliness and Support from Friends

The final set of analyses examined the possible moderating influences of friendship support for adolescents' later educational outcomes, specifically whether support from friends would buffer the negative relationship between loneliness and educational success. The final model fit the data well (χ^2 (62) = 111.4, $p < .001$; CFI = 0.924; RMSEA = 0.035). Evidence for moderation emerged for both academic outcomes. Specifically, for adolescents' academic progress, interaction effects involving the chronically high ($\beta = -.33$, $p < .01$) and low-increasing loneliness classes ($\beta = -.56$, $p < .05$) were significant. As shown in Fig. 2a, support from friends appears to exert a buffering effect for lonely adolescents' academic progress. Adolescents in both the chronically high and low-increasing loneliness classes made significantly better academic progress when they perceived high support from friends. In contrast, support from friends had little effect on adolescents in the low-steady loneliness class. Unexpectedly, for exit exam passing rates (see Fig. 2b, number of exit exams passed on the first attempt), support from friends was promotive for the low-steady loneliness class, particularly as compared to the chronically high loneliness class ($\beta = .49$ $p < .05$), such that adolescents in the low-steady loneliness class who also perceived high levels of support from friends had more success on their exit exams. Support from friends exerted little effect on the exit exam passing rates of adolescents in the chronically high and low-increasing loneliness classes.

Discussion

Latino youth represent a rapidly increasing segment of the US population, and the current study sought to investigate the link between Latino adolescents' socioemotional well-being and academic success. Specifically, the study explored Latino adolescents' loneliness across their first 2 years of high school, the repercussions of loneliness for later educational success, and the extent to which friendship support might buffer the negative effects of loneliness on achievement. The goal of the study was to identify adolescents at particular

risk socioemotionally and academically and determine whether promoting social connections and support might be a possible point of intervention.

The majority of Latino adolescents in the current study maintained low levels of loneliness across the first 2 years of high school. Although previous research indicates that Latino youth are more likely to experience challenges to their socioemotional well-being (Harris et al. 2006; Jessor et al. 1995; McLaughlin et al. 2007), the findings reported here suggest that the majority of Latino youth in this sample did not struggle with loneliness during their first 2 years of high school. Consistent with expectations and previous research (see Asher and Paquette 2003), a small group of adolescents were chronically lonely across high school, and the size of this group (11%) is consistent with these prior findings. A final group of adolescents initially reported low levels of loneliness, but by the end of 10th grade, these adolescents were lonelier than the chronically lonely group. Although the chronically lonely and increasingly lonely Latino youth are not prototypical, at least in this sample, their numbers are such to warrant concern.

Understanding the composition of the three loneliness groups necessitated exploring the characteristics of each group's members. Individual characteristics were particularly useful in distinguishing between the low-increasing and the low-steady loneliness classes. For example, adolescents increasing in loneliness across high school were more likely to be language brokers than those students consistently low in loneliness. Although language brokering can have benefits for the adolescent translator in terms of promoting interpersonal skills and academic competencies (McQuillan and Tse 1995; Valdés 2003), language brokering can be an acculturative stress as well (Love and Buriel 2007; Martinez et al. 2009; Morales and Hanson 2005), placing adolescents in possibly stigmatizing situations (Orellana et al. 2003) and usurping time adolescents might otherwise spend with their friends. In addition to language brokering, language use with peers, but not other measures of acculturation, also predicted membership in the low-increasing class. Speaking Spanish at school with friends may reflect adolescents' comfort with Spanish as compared to English (e.g., greater enculturation) or selection of less acculturated peers as friends (Allen et al. 2008). Spanish language use with friends also may limit the number of peers with whom the adolescent interacts, particularly when there are fewer same-ethnicity peers in the school who might share the student's native tongue.

Mobility also was associated with increasing loneliness across high school. School mobility serves as an impediment to the establishment and maintenance of friendships. Previous research has found that switching schools can be detrimental to students in terms of poorer academic achievement (Temple and Reynolds 1999), increased risk for school dropout (Rumberger and Larson 1998), and declines in social capital, in terms of students' ties to their schools, communities, peers, and families (Pribesh and Downey 1999). Related to changes in social capital, mobile students also typically have smaller friendship networks and occupy less central positions in the networks to which they belong (South and Haynie 2004). As such, it is not surprising that mobile students would feel increasingly lonely as they struggled to find their niche in a new school context.

Although adolescents' individual characteristics were useful in differentiating those in the low-increasing class from the stable low-loneliness class, none of the characteristics under study provided insights into members of the chronically lonely class. Previous research suggests that feelings of loneliness are closely tied to depressive symptoms, feelings of victimization, and social withdrawal (Fontaine et al. 2009; Nishina et al. 2005; Rubin et al. 2009). As such, it is possible that chronically lonely youth may have experienced earlier signs of psychological maladjustment and difficulties forging social ties. Exploring whether early socioemotional well-being is a marker of later chronic loneliness is an area for future

inquiry. Research also suggests that the transition to high school can be detrimental to adolescents' socioemotional well-being (Barber and Olsen 2004; Benner and Graham 2009). It may be that the chronically lonely youth in the current study experienced disruptions across the high school transition from which they were not able to fully recover, which should be explored in future research as well.

In examining the link between loneliness and educational success, adolescents in the low-increasing class were at particular risk academically, as they made less academic progress and were less likely to have passed their exit exams. Chronically lonely adolescents also struggled academically in terms of exit exam success. Increases in or heightened states of loneliness over time reflect disengagement from peers, but increased loneliness may also herald disengagement from other aspects of adolescents' lives, including school. Adolescents who struggle to forge personal bonds with peers may begin to view their schools, the primary point of interaction with peers, unfavorably, and, as previous research indicates, poor perceptions of school climate are closely linked to Latino adolescents' school performance (Eamon 2005; Roscigno 2000). As such, it is possible that deteriorating perceptions of school climate might be one mechanism by which loneliness influences later educational success. Future research also should explore the causal link between loneliness and academic performance. Although the current study identifies differential academic performance for chronically and increasingly lonely adolescents, investigations using more sophisticated analysis techniques (e.g., autoregressive, cross-lagged modeling) could better explicate the direction of influence between loneliness and academic progress and performance.

The final research question explored the buffering nature of friendship support, as peers can be an important resource for Latino adolescents (Fuligni 1997). Results bear this out, highlighting the protective nature of friendships for adolescents' academic achievement. Consistent with the initial hypothesis, support from friends buffered the negative effects of loneliness on academic progress for adolescents who were chronically lonely or who increased in loneliness over time. In other words, adolescents who struggled with loneliness *and* who lacked support from friends made poorer academic progress than those who reported increasing or consistently high loneliness *but* who had high levels of support from the friends they did have. In contrast, friendship support yielded no buffering effect for chronically or increasingly lonely adolescents' exit exam success. These findings highlight the need to distinguish between different kinds of educational outcomes. The academic progress indicators used in the current study (i.e., GPA, math course-taking sequence, classes failed, engagement) are markers of students' movement through and successful navigation of the educational system, whereas exit exam success measures the accumulation of student learning across educational careers.

In the current study, friendship support is a general measure of the emotional support adolescents perceived from their friends. Adolescents who enjoy the support of their friends are more likely to perceive their school climates more positively (Ueno 2005; Vaquera and Kao 2008), and positive perceptions of school climate promote the indicators of academic progress measured in the current study (Benner et al. 2008). As such, this represents one possible mechanism for understanding the buffering nature of friendship support observed in the current study. It may also be that lonely adolescents who are able to emotionally connect to peers also may be better able to interact with and elicit positive support from other social agents, such as teachers, which could also facilitate academic progress during high school. Adolescents who are positively embedded within social networks such as schools are more likely to engage in help-seeking behavior when faced with academic challenges (Stanton-Salazar et al. 2001), thereby staving off possible derailment of academic trajectories and promoting academic progress.

The findings reported in the current study suggest, however, that emotional support from peers may not ensure, or have little direct relevance to, lonely adolescents' academic success as measured by exit exam achievement tests. Although general emotional support may facilitate adolescents' continued engagement in school, this study's results suggest that emotional support alone does not facilitate the content knowledge learning for lonely adolescents. Prior research has documented that the peer group context, particularly peer groups characterized by members with high levels of motivation and achievement, promotes adolescents' academic achievement, controlling for selection effects (Ryan 2001). As such, while general emotional support may be ineffectual in facilitating lonely adolescents' content mastery (as measured by exit exams), it may be that friends' academic socialization practices might exert a buffering effect and promote better exit exam success. As a final caveat, it should be noted that while our measure of loneliness was school specific, the friendship support measure was not context specific. As such, future research should explore further how supportive relationships across contexts promote adolescents' academic and mental health.

Feelings of belonging and connection to others are of critical import across the life span. In the current study, almost a quarter of Latino adolescents' struggled to find their niche, suffering from chronic or increasing loneliness, and this had detrimental consequences for their later educational success. Given the well-documented academic risks faced by Latino youth, including high dropout rates and low post-secondary enrollment, the promotion of social connections, whether through in-school activities or after-school extracurricular programs, may be one point of intervention that encourages adolescents to develop social relationships, school connection, and school engagement, thereby promoting more positive life outcomes for Latino youth.

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Biography

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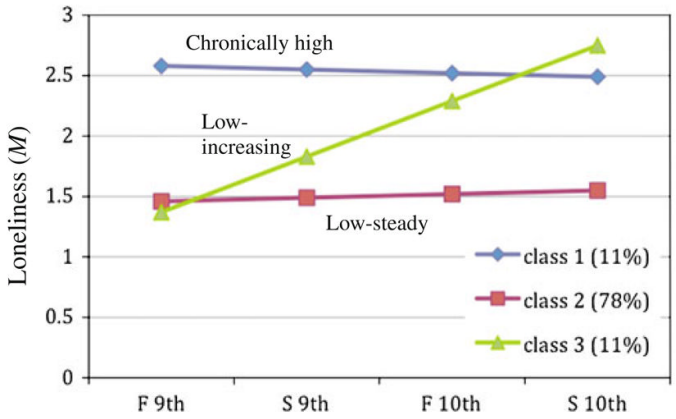

Fig. 1.
Growth mixture model results for Latino adolescents' loneliness. *Note*: F = fall, S = spring

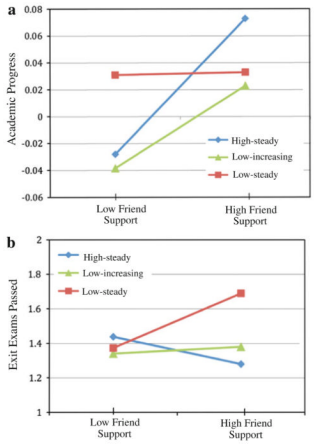

Fig. 2.

a Academic progress by loneliness class for adolescents varying in support from friends. *Note*. Academic progress indicators (i.e., GPA, classes failed, math sequence, engagement) were standardized, and academic progress is the mean of the standardized indicators. High support from friends is 1 SD or more above the mean; low support is 1 SD or more below the mean. **b** Number of exit exams passed by loneliness class for adolescents varying in support from friends. *Note*. Range of exit exams passed: 0–2. High support from friends is 1 SD or more above the mean; low support is 1 SD or more below the mean

Table 1

Means, standard deviations, and intercorrelations among modeled variables

	1	2	3	4	5	6	7	8	9	10	11
Loneliness											
1. Loneliness (F9)	–										
2. Loneliness (S9)	.72***	–									
3. Loneliness (F10)	.61***	.67***	–								
4. Loneliness (S10)	.52***	.63***	.74***	–							
Academic progress (S10)											
5. GPA	.03	−.03	−.03	−.01	–						
6. Classes failed	.04	.10*	.15***	.19***	−.35***	–					
7. Math sequence	.04	−.01	−.03	−.04	.49***	−.28***	–				
8. Engagement	−.15***	−.20***	−.23***	−.28***	.24***	−.50***	.17***	–			
Exit exam passing (S10)											
9. Language arts	−.03	−.10*	−.10*	−.09*	.22***	−.36***	.17**	.13**	–		
10. Mathematics	−.01	−.02	−.11*	−.07	.21***	−.34***	.20***	.10*	.50***	–	
11. Friend support (S10)	−.22***	−.33***	−.37***	−.48***	.04	−.15***	.02	.20***	.20***	.09	–
M	1.59	1.64	1.67	1.78	2.19	0.93	5.10	3.56	0.80	0.73	4.02
SD	0.54	0.58	0.58	0.63	1.03	1.11	0.85	0.70	0.40	0.44	1.00
N	524	573	537	583	583	588	527	587	505	501	592

Note: F9, fall 9th grade; S9, spring 9th grade; F10, fall 10th grade; S10, spring 10th grade

* $p < .05$,

** $p < .01$,

*** $p < .001$

Table 2

Multinomial logistic regression predicting loneliness class (N = 640)

	b	SE *b*	OR	95% CI
Adolescent gender				
High-steady vs low-steady	−0.20	0.34	0.82	0.42–1.60
Low-increasing vs low-steady	−1.16***	0.25	0.31	0.19–0.51
Low-increasing vs high-steady	−0.96*	0.48	0.38	0.15–0.98
Nativity status				
High-steady vs low-steady	0.15	0.43	1.17	0.50–2.72
Low-increasing vs low-steady	−0.02	0.62	0.99	0.30–3.29
Low-increasing vs high-steady	−0.17	0.59	0.85	0.27–2.68
Country of origin				
High-steady vs low-steady	0.13	0.52	1.14	0.42–3.14
Low-increasing vs low-steady	−0.10	0.24	0.91	0.57–1.45
Low-increasing vs high-steady	−0.23	0.51	0.79	0.29–2.17
Language broker				
High-steady vs low-steady	0.54	0.40	1.72	0.79–3.73
Low-increasing vs low-steady	0.74**	0.25	2.10	1.28–3.45
Low-increasing vs high-steady	0.20	0.48	1.22	0.48–3.15
Home language				
High-steady vs low-steady	0.03	0.30	1.03	0.58–1.85
Low-increasing vs low-steady	−0.63+	0.34	0.53	0.27–1.04
Low-increasing vs high-steady	−0.67	0.53	0.51	0.18–1.46
Language with peers				
High-steady vs low-steady	−0.05	0.38	0.96	0.45–2.03
Low-increasing vs low-steady	−0.44*	0.22	0.64	0.42–0.98
Low-increasing vs high-steady	−0.40	0.47	0.67	0.27–1.67
Percent same-ethnicity peers				
High-steady vs low-steady	0.07	0.10	1.07	0.89–1.30
Low-increasing vs low-steady	−0.13	0.09	0.88	0.73–1.05
Low-increasing vs high-steady	−0.20*	0.09	0.82	0.69–0.98
Transition with majority of peers				
High-steady vs low-steady	0.23	0.38	1.25	0.59–2.65
Low-increasing vs low-steady	0.25	0.47	1.28	0.51–3.24
Low-increasing vs high-steady	0.02	0.51	1.02	0.38–2.75
Mobility				
High-steady vs low-steady	0.49	0.36	1.64	0.80–3.33
Low-increasing vs low-steady	1.24***	0.36	3.44	1.71–6.93
Low-increasing vs high-steady	0.74+	0.44	2.10	0.89–4.96

Note: SE standard error, *OR* odds ratio, *CI* confidence interval for odds ratio

+ $p < .10$,

* $p < .05$,

** $p < .01$,

*** $p < .001$