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The Impact of Ethnoracial Appearance on Substance Use in Mexican Heritage Adolescents in the Southwest United States

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Abstract

Latinos are a multiracial ethnic group, and as such, within-group differences in ethnoracial appearance deserve to be studied and understood within the racialized American context and in connection to specific health and mental health outcomes. This article presents the findings of a study conducted with middle school Mexican heritage students (n = 1,150) in Phoenix, Arizona, and tested how non-White majority ethnoracial appearance predicted adolescent substance use, and whether the relationship differed by generation status and strength of ethnic identity. Logistic regression results revealed that generation status and ethnic identity moderate the relationship between ethnoracial appearance and substance use among Mexican heritage youth. The odds of using substances were significantly higher for third-generation adolescents who reported a less European appearance, but significantly lower for second-generation youth who were more indigenous in appearance. These findings indicate that a stronger indigenous ethnic appearance can be both a protective and risk factor for substance use for adolescents. Implications are discussed in terms of incorporating ethnoracial appearance content in prevention interventions for Mexican heritage and other Latino adolescents.

Keywords

ethnoracial appearance; substance use; Mexican/Mexican American; adolescents

Latinos are a multiracial ethnic group, whose appearance can vary from very light skin with European features to dark skin with indigenous features or a mixture of the two (mestizos) (Telzer & Vazquez Garcia, 2009). Research into the influence of ethnoracial appearance on the well-being of Latinos has noted that a more indigenous appearance can have both an impact on how Latinos are received within the dominant majority culture as well as how they are received within ethnoracial communities, and the impact may be positive or negative (Hunter, 2005). The mechanisms linking ethnoracial appearance to poor health outcomes, specifically to substance use, have not been fully clarified or elucidated; however, it is suggested that ethnoracial appearance may play an important role in influencing substance use among middle school students (Marsiglia, Kulis, & Hecht, 2001; Williams & Mohammed, 2009) through two distinct theoretical pathways. First, increased vulnerability to substance use may occur when individuals experience stress as a result of discrimination

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based on their ethnoracial appearance, whether it is discrimination from the dominant majority group or discrimination that emanates from within their ethnoracial communities (Borrell, 2005; Borrell & Crawford, 2006; Williams & Mohammed, 2009). Second, ethnoracial appearance may decrease vulnerability to substance use when it enhances the experience of ethnic authenticity and sense of belonging, ethnic pride, and ethnic legitimacy (Hunter, 2005, 2007).

For Latinos living in the midst of the dominant majority U.S. culture, the impact of ethnoracial appearance on substance use may be explained through racism and discrimination (Frank, Akresh, & Lu, 2010). The effect of having an indigenous ethnoracial appearance has been linked to a whole host of economic, social, and health problems, virtually extending to all areas of Latinos' lives including their life chances, employment opportunities, quality of life, self-concept, self-worth, self-rated health, and well-being (Codina & Montalvo, 1994; Montalvo, 2004). However, these experiences and encounters for Latinos are dependent upon immigrant-generation status and language spoken (Borrell, 2005; Espino & Franz, 2002). Me]xican heritage individuals who are born in the United States are more vulnerable to the impact of ethnoracial appearance because they have a greater awareness and perception of discrimination based on ethnic appearance compared to those born in Mexico (Codina, 1990).

However, more indigenous Mexican ethnoracial appearance can be viewed as conferring ethnic authenticity, demonstrating ethnic pride, and being truly *mexicano* (Hunter, 2005, 2007). Within the Mexican community it may be presumed that light-skinned individuals do not identify with, are not affiliated with, or are not Mexican enough (Hunter, 2005; Montalvo, 2009), leading light-skinned Mexican Americans to sometimes experience “pain, frustration, and disappointment at being excluded from ethnic organizations and generally being regarded as less than full members of the Mexican American community” (Hunter, 2005, p.102). Language use and acculturation further impact this need for ethnic authenticity and ethnic legitimacy within Mexican heritage communities in the United States (Ortiz & Arce, 1984). For example, being darker skinned and fluent in Spanish may be taken as proof of ethnic authenticity while being light-skinned and speaking only English can signal acculturation toward the dominant culture, a nonworthy trait in some Mexican American communities (Ortiz & Arce, 1984).

The aim of this research is to study the possible association between Mexican ethnoracial appearance, ethnic identity, generation status, and substance use among Mexican heritage adolescents. Specifically, this study seeks to establish whether a relationship between self-reported ethnoracial appearance and substance use exists among Mexican origin youth and then test if ethnic identity and the acculturative factor of generation status moderate the relationship.

Method

Data come from the sixth wave of a 5-year randomized controlled trial of a substance-use prevention intervention that surveyed students, then in eighth grade, from 28 public schools in Phoenix, Arizona. Although the schools agreeing to participate in the trial represented half the school districts and middle schools in the city, they were located disproportionately in low-income neighborhoods, and in all but two schools, Mexican heritage students were in the majority. The schools were assigned to a treatment or control condition through a block randomization procedure that adjusted for enrollment size and school ethnic composition. Active parental consent was obtained from 82% of enrolled students, and 84% of the consented students completed the questionnaire between January and March, 2008, during a regular, 45-min classroom period. For more detailed survey procedures see Hecht et al.

(2008). Both the English and Spanish versions of the questionnaire were distributed to all students; however 98% of students completed the questionnaire in English. A total of 1,422 eighth-grade students completed the questionnaire; however, because this study focuses on Mexican ethnoracial appearance, 1,150 Mexican heritage students were included in the subsample used for analysis. Students were included if they indicated their ethnicity was "Mexican, Mexican American, or Chicano," regardless whether they claimed another ethnic or racial heritage in addition.

Outcome Measures

Substance use in the past 30 days was assessed using three outcome measures (alcohol, cigarettes, and marijuana). These outcome measures have been used previously with a Mexican adolescent sample and shown to be developmentally appropriate and reliable (Hecht et al., 2003; Johnston, 1989). Alcohol use was assessed by the question, "How many times in the last 30 days have you drunk more than a sip of alcohol (beer, wine, or liquor)?" "How many times in the last 30 days have you smoked cigarettes?" measured cigarette use, and marijuana use was measured by "How many times in the last 30 days have you smoked marijuana (pot, weed)?" Responses to all three questions included (0) none (1) 1-2 times; (2) 3-5 times, (3) 6-9 times, (4) 10-19 times, (5) 20-39 times and (6) 40 or more times. All 30-day substance-use measures contained a high number of zeros (e.g., non–substance users) and ones (e.g., used one to two times), thus because of the lack of variability at the upper range of the dependent variables, all three outcome measures were dichotomized into (0) no use and (1) use.

Independent Variables

Ethnoracial appearance consisted of two self-rated items with implied Likerttype scales, skin tone and physical features, and was drawn from Codina and Montalvo's (1994) methodology. Skin tone was assessed by, "Thinking about your ethnicity, describe your skin tone (complexion)" and responses were (1) very light, (2) light, (3) medium, (4) dark, and (5) very dark. Physical features were assessed by the question, "Thinking about such features as your eye color, hair color and texture, and the shape of your nose, please indicate on a scale how much you look like members of the majority white ethnic group." Response options allowed respondents to indicate a whole number from 1 to 10, which were anchored by (1) "not at all," and (10) "completely." Based on Codina and Montalvo's (1994) methodology, the ethnoracial appearance scale was created by adding the scores for skin tone and physical features (reverse coded). Ethnoracial appearance ranged from (2) very light skin and completely European physical features to (15) very dark skin and physical features not at all European. To control for multicollinearity in tests of interactions, ethnoracial appearance was mean centered.

Ethnic identity was composed by the first component of the Multigroup Ethnic Identity Measure (MEIM) (Phinney, 1992), which measures the behaviors, attitudes, exploration, and positive affiliation of the adolescent's ethnic identity (Ponterotto, Gretchen, Utsey, Stracuzzi, & Saya, 2003). This measure of ethnic identity has been used in prior studies among Mexican adolescents living in southwest United States (Marsiglia et al., 2001; Marsiglia, Kulis, Hecht, & Sills, 2004). Ethnic identity was comprised of six questions: (a) I have tried to learn more about my own ethnic group, such as its history and customs; (b) I have often talked to other people, like my parents, to learn more about my ethnic group; (c) I am happy to be part of my ethnic group; (d) I feel like I really belong to my own ethnic group; (e) I am very proud of my ethnic group and its accomplishments; and (f) I am involved in the customs of my own ethnic group, such as food, music or celebrations. All questions ranged from (1) strongly agree to (4) strongly disagree. The mean of the items scores were calculated to create a highly reliable ethnic identity scale ($\alpha = .937$). Once reverse coded, the

mean item scale of ethnic identity, a continuous variable, ranged from (1) low ethnic identity to (4) high ethnic identity. To control for multicollinearity in tests of interactions, ethnic identity was centered.

Generation status was categorized into first generation, second generation, and third generation. First-generation students were defined as those born outside the United States. Second-generation students were those born in the United States but with a foreign-born parent(s), while third generation were U.S.-born students of U.S.-born parent(s), and are the reference group. All models controlled for gender, two-parent family or other type of family structure, usual grades in school, and treatment condition (received substance use prevention program or did not receive it). Because 96.08% of the respondents were 13 or 14 years old, indicating a very age-homogenous group, the models did not control for age.

Results

Table 1 presents the descriptive statistics for the sample. Alcohol is the most prevalent substance used (32%) followed by marijuana use (13%), while cigarette use is relatively low (6%). The mean score on the Mexican ethnoracial appearance scale is 7.5 indicating a medium (mestizo) skin tone and some European physical features. Most students report moderate to high ethnic identity ($M = 3.3$), while the majority of the sample is composed by second-generation adolescents (55%) with the remainder split between first generation (24%) and third generation (21%). Most students received Bs and Cs in school ($M = 6.7$), live with both parents (67%), and are female (52%).

One-way ANOVAs tested for any differences in self-reported ethnoracial appearance by generation status and ethnic identity. ANOVA results indicated no statistical differences between first-, second-, and third-generation youth and self-reported ethnoracial appearance $F(2, 919) = 2.25$, $p = 0.11$, or between high or low ethnic identity groups and ethnoracial appearance $F(3, 972) = 1.36$, $p = 0.25$. In addition, the correlation between the ethnic identity scale and ethnoracial appearance is nonsignificant ($r = 0.04$, $p = 0.21$). Because ethnoracial appearance is self-reported, these nonsignificant ANOVAs and correlation are important because they confirm no statistical differences in ethnoracial appearance by generation status and by ethnic identity, thus any effects seen with substance use on ethnoracial appearance are not due to significant starting differences in levels of ethnoracial appearance for these groups.

Results of the logistic regression reveal that generation status and ethnic identity moderate the relationship between ethnoracial appearance and substance use (Table 2) after adjustment for demographic covariates. For use of alcohol, ethnoracial appearance does not have a significant main effect; only the interaction between second-generation status and ethnoracial appearance is significant. For second-generation adolescents, increases in a more indigenous ethnoracial appearance decrease the predicted odds of using alcohol ($OR = 0.89$, 95% CI [0.78, 1.01]). As shown in Figure 1a, compared to the third generation, second-generation adolescents with a more European ethnoracial appearance have significantly higher odds of using alcohol. Ethnic identity is not a significant moderator between ethnoracial appearance and alcohol use. The likelihood-ratio (LR) test, $LR(3) = 4.04$, $p = 0.26$ and the Wald test, $X^2(3) = 4.00$, $p = 0.26$ are not significant, indicating that including the interactions does not produce a better fitting model.

For use of cigarettes, after adjustment for demographic covariates, ethnoracial appearance has a main effect on cigarette use, and both first-generation status and second-generation status moderate the relationship between ethnoracial appearance and cigarette use (Table 2). The main effect of ethnoracial appearance is significant and positive indicating adolescents

having a more indigenous ethnoracial appearance have significantly higher odds of smoking cigarettes (*OR* = 1.27, 95% CI [1.01, 1.60]). For the moderation effects, compared to third generation, first generation (*OR* = 0.71, 95% CI [0.51, 0.97]) and second-generation adolescents (*OR* = 0.68, 95% CI [0.52, 0.88]) with a more indigenous ethnoracial appearance have significantly lower odds of using cigarettes. For those with a strong ethnic identity, an indigenous ethnoracial appearance increases the predicted odds of using cigarettes (*OR* = 1.16, 95% CI [1.01, 1.34]). As shown in Figures 1b and 1c, third-generation adolescents and those with high ethnic identity who have a more indigenous ethnoracial appearance have the highest odds of smoking cigarettes. Both the LR test, $LR(3)=11.82$, $p < .001$, and the Wald test, X^2 (3) = 11.05, $p < 0.01$, are significant at $p < .01$ indicating that the inclusion of the interactions leads to a better model fit.

For marijuana, adolescents with a more indigenous ethnoracial appearance having significantly higher odds of using marijuana (*OR* = 1.34, 95% CI [1.13, 1.58]) (Table 2). In addition, first generation adolescents are less likely to use marijuana than the third generation *(OR* = 0.43, 95% CI [0.21, 0.87]). Compared to third generation, first generation (*OR* = 0.80, 95% CI [0.62, 0.1.04]) and second-generation adolescents (*OR* = 0.74, 95% CI [0.61, 0.89]) with a more indigenous ethnoracial appearance have significantly lower odds of using marijuana. (see Figure 1d). The interaction between ethnic identity and ethnoracial appearance is marginally significant (*OR* = 1.11, 95% CI [0.98, 1.25]) indicating that adolescents with high ethnic identity and a more indigenous ethnoracial appearance havethe highest odds of smoking marijuana. Both the LR test, $LR(3)=12.27$, $p<0.01$, and the Wald test, $X^2(3) = 11.42$, $p < 0.01$, are significant at $p < .01$ indicating that the interactions lead to a better model fit.

Discussion

This study advances our understanding of the association between substance use and Mexican ethnoracial appearance. These findings support, refine, and extend the understanding of ethnoracial appearance that has linked to having a more indigenous ethnoracial appearance to poor economic, social, and health outcomes (Codina, 1990; Espino & Franz, 2002; Montalvo, 2004; Telles & Murguia, 1990; Vazquez et al., 1997). These findings demonstrate yet another avenue through which ethnoracial appearance impacts the lives of Mexican heritage youth in the United States. However, our study shows that relationships between ethnoracial appearance and substance use are conditional on the adolescent's generation status and strength of ethnic identity. This is consistent with the argument that the mostly mestizo-Mexican ethnoracial appearance can be a dual contradictory experience (Hunter, 2005).

Third-generation Mexican heritage adolescents are most at-risk for using alcohol, cigarettes, and marijuana when they report an indigenous ethnoracial appearance. Conversely, the first and second-generation adolescents reporting an indigenous Mexican ethnoracial appearance are less likely to use cigarettes and marijuana. These findings expand the understanding that within the dominant majority culture the impact of an indigenous Mexican ethnoracial appearance is greater for Mexican heritage youth born in the United States rather than in Mexico (Codina, 1990), and that these experiences vary by immigrant-generation status (Borrell, 2005; Espino & Franz, 2002). Third-generation youth who feel they look more indigenous are at a higher risk for substance use perhaps because they have come to understand more fully how their ethnoracial appearance will affect their life chances, opportunities, quality of life, self-concept, self-worth, and well-being negatively (Codina & Montalvo, 1994; Gomez, 2000; Montalvo, 2004), and as research has shown, racial and ethnic minorities who experience discrimination are at greater risk for substance use (Choi, Harachi, Gillmore, & Catalano, 2006). Their counterparts, second- and first-generation

youth, may not yet fully comprehend the disadvantages of looking non-White in the majority community, thus the impact of their ethnoracial appearance is not as ingrained yet within their lived experience. Thus, the findings are congruent with arguments that, within Mexican communities in the United States, a more indigenous ethnoracial appearance can both protect adolescents and place them at risk (Frank et al., 2010; Marsiglia et al., 2001; Montalvo & Codina, 2006).

The key measures of skin tone and physical features are self-reported by the adolescents in this study, which may raise questions about how well they correspond to the way their ethnoracial appearance is viewed by others. However, an important indication that self-reports were not systematically biased is suggested by the lack of significant differences in the scores for ethnoracial appearance by immigrant-generation status or strength of ethnic identity. Nevertheless, future research should confirm the adolescent's self-report through the use of various ratings by trained researchers, which could provide a more rigorous picture of variations in ethnoracial appearance. Another possible limitation is the reliance on self-reports of substance use. No precautions were taken by the researchers to ensure the validity of the self-reports, thus there may be either underrepoting or overreporting of substance use. Future studies might examine acculturation more expansively and include measures of cultural and social integration, and expand to other geographic areas where the Mexican heritage population is a more acute numerical minority. Because the adolescents in this study came mostly from neighborhoods and schools that were majority Mexican, they might be sheltered from the full impact of majority culture's ethnic discrimination. The relationship between ethnoracial appearance and substance use may be different for Mexican heritage adolescents who typically are the numerical minority at school. Additional research is needed as well on the psychosocial and/or biomedical mechanisms that link ethnoracial appearance to substance use and other measures of well-being.

Even with these limitations the findings have important implications for public health practices and programs. Understanding how ethnoracial appearance increases vulnerability to substance use and how this relationship varies by ethnic identity and generation status is important for developing substance use prevention programs specifically for Mexican heritage adolescents or with specific content about their group. Substance use prevention programs could help to strengthen the resiliency of Mexican heritage adolescents, particularly third-generation adolescents who have more of an indigenous ethnic appearance. Increasing resiliency may lessen the impact of discrimination and in turn, reduce substance use. Applying this knowledge in prevention programs will require better understanding of how discrimination is experienced by Mexican adolescents who have a more indigenous appearance and the role of discrimination in their substance use trajectories.

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Biographies

Stephanie L. Ayers is the associate director of research at the Southwest Interdisciplinary Research Center at Arizona State University specializing in racial and ethnic disparities in health. She received her PhD in sociology from Arizona State University where her focus was on health care utilization, specifically focused on complementary and alternative medicine. She received her MA at University of Colorado-Denver. Her research focuses on complementary and alternative medicine, the Internet and health care, specialty care utilization, and mental health utilization.

Stephen Kulis is Cowden distinguished professor of sociology in the School of Social and Family Dynamics atArizona State University and the director of research at the Arizona State University Southwest Interdisciplinary Research Center. His research focuses on cultural processes in health disparities, such as the role of gender and ethnic identity in youth drug use and prevention interventions; cultural adaptation of prevention programs for ethnic minority youth; on contextual neighborhood and school level influences on individual level risk and protective behaviors; on gender and racial inequities in professional careers; and the organizational sources of ethnic and gender discrimination.

Flavio F. Marsiglia has been a member of the faculty of the Arizona State University School of Social Work since 1994 where he is the Distinguished Foundation professor of cultural diversity and health. He is the director of the Southwest Interdisciplinary Research Center, a national exploratory center of excellence funded by the National Institute on Minority Health and Health Disparities of the National Institutes of Health. In addition, Marsiglia is the principal investigator of other research projects studying risk and protective factors associated with health outcomes among ethnic minority youth and their families. His areas of specialization are health disparities research, drug abuse, HIV/AIDS prevention, and culturally grounded social work practice with an emphasis on Latino cultures.

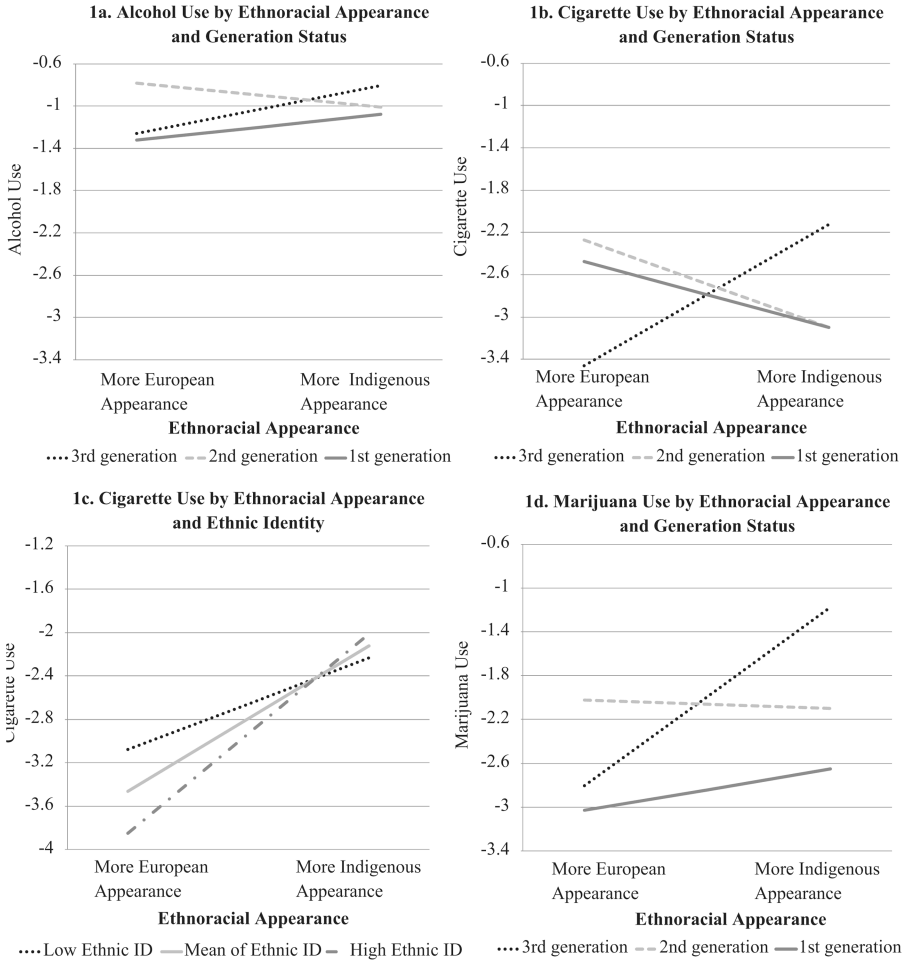

Figure 1.

Associations between ethnoracial appearance, ethnic identity, generation status, and substance use: Study of drug resistance strategies, Phoenix, Arizona, 2008.

Table 1

Demographic Characteristics of Study Participants, by 30-Day Substance Use Outcomes: Study of Drug Resistance Strategies, Phoenix, Arizona, 2008.

	Total sample	
	No.	**% (*SE*) or Mean (*SE*)**
Alcohol use in past 30 days		
No	782	68.54 (0.02)
Yes	359	31.46 (0.02)
Cigarette use in past 30 days		
No	1,065	93.18 (0.01)
Yes	78	06.82 (0.01)
Marijuana use in past 30 days		
No	990	86.84 (0.01)
Yes	150	13.16 (0.01)
Ethnoracial appearance[a,b]	976	07.45 (0.10)
Ethnic identity[a,c]	1,113	03.27 (0.02)
Generation status		
1st generation	266	24.70 (0.02)
2nd generation	581	53.95 (0.02)
3rd generation	230	21.36 (0.02)
Grades[a,d]	1,149	06.74 (0.07)
Family structure		
Two-parent family	771	67.04 (0.02)
Other family structure	379	32.96 (0.02)
Gender		
Male	550	47.83 (0.02)
Female	600	52.17 (0.02)
Treatment condition		
Treatment	830	72.17 (0.09)
Control	320	27.83 (0.09)

[a] Continuous variables.

[b] A mean of 7 represents an approximate ethnoracial appearance of medium skin tone and some European physical features.

[c] A mean of 3 represents an approximate ethnic identity of moderate to high.

[d] A mean of 6 represents approximate grades of Bs and Cs.

Table 2

Odds Ratios (*OR*) for Alcohol, Cigarette, or Marijuana Use in Past 30 Days by Latino Ethnoracial Appearance, Ethnic Identity, and Generation Status: Study of Drug Resistance Strategies, Phoenix, Arizona, 2008.

	Any alcohol use in past 30 days (*n* = 911) *OR* (95% CI)		**Any cigarette use in past 30 days (*n* =910) *OR* (95% CI)**		**Any marijuana use in past 30 days (*n*= 910) *OR* (95% CI)**	
Latino ethnoracial appearance	1.08	(0.97, 1.21)	1.27**	(1.01, 1.60)	1.34****	(1.13, 1.58)
Ethnic identity	1.05	(0.81, 1.36)	0.79	(0.48, 1.29)	1.08	(0.75, 1.57)
Ethnic identity × Latino ethnoracial appearance	1.02	(0.94, 1.11)	1.16**	(1.01, 1.34)	1.11*	(0.98, 1.25)
1st generation[a]	0.84	(0.54, 1.32)	1.01	(0.40, 2.54)	0.43***	(0.21, 0.87)
2nd generation[a]	1.15	(0.79, 1.66)	1.11	(0.50, 2.47)	0.93	(0.54, 1.61)
1st generation × Latino ethnoracial appearance	0.96	(0.82, 1.13)	0.71*	(0.51, 0.97)	0.80+	(0.62, 1.04)
2nd generation × Latino ethnoracial appearance	0.89*	(0.78, 1.01)	0.68***	(0.52, 0.88)	0.74***	(0.61, 0.89)
Grades	0.84***	(0.75, 0.94)	0.93	(0.76, 1.14)	0.69****	(0.60, 0.80)
Family structure[b]	1.07	(0.79, 1.46)	0.69	(0.37, 1.31)	0.91	(0.59, 1.41)
Gender[c]	1.44**	(1.08, 1.93)	0.75	(0.43, 1.32)	1.05	(0.69, 1.59)
Treatment condition[d]	1.06	(0.77, 1.44)	1.23	(0.66, 2.31)	1.24	(0.77, 1.97)

[a] Reference category: Third generation.

[b] Reference category: Two-parent family.

[c] Reference category: Male.

[d] Reference category: No treatment received.

* $p < .10$.

** $p < .05$.

*** $p < .01$.

**** $p < .001$.