Latino/a Youth Intentions to Smoke Cigarettes: Exploring the Roles of Culture and Gender

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Abstract

Latino/a youth are at risk for cigarette smoking. This risk seems to increase as youth navigate the U.S. cultural context, especially for girls. To investigate how acculturation may influence Latino/a youths' intentions to use cigarettes, this study combines a bidimensional/multidomain model of acculturation and the Theory of Reasoned Action. Our sample consisted of 303 recent Latino/a immigrant youth who had resided in the United States for five years or less at baseline (141 girls, 160 boys; 153 from Miami, 150 from Los Angeles) who completed surveys at 3 time-points. Youth completed measures of acculturation (Latino/a practices, Latino/a identity, collectivistic values; U.S. cultural practices, U.S. identity, individualistic values), smoking related health risk attitudes, perceived subjective norms regarding smoking, and intentions to use cigarettes. Structural equation modeling indicated that collectivistic values were associated with more perceived disapproval of smoking, which in turn was negatively associated with intentions to smoke. Collectivistic values may help protect Latino/a immigrant youth from intending to smoke. Thus, educational smoking prevention efforts could promote collectivistic values and disseminate messages about the negative consequences of smoking on interpersonal relationships.

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Abstract

La juventud latina tiene riesgo del uso de cigarrillos. Este riesgo parece aumentar a medida que los y las jóvenes se involucran en el contexto cultural estadounidense, esto es especialmente cierto para las jóvenes. Con el fin de indagar si la aculturación puede influenciar la intención del uso de cigarrillos en jóvenes latino/as, este estudio combina la teoría de acción razonada y un modelo bidimensional/multidimensional de aculturación. Se contó con una muestra de 303 jóvenes latinos/as que habían inmigrado recientemente a los Estados Unidos y con residencia en los Estados Unidos de cinco o menos años al inicio del estudio (141 jóvenes de sexo femenino, 160 jóvenes de sexo masculino; 153 de Miami, 150 de Los Ángeles). Los participantes completaron cuestionarios a lo largo de 3 tiempos diferentes. Asimismo, se administraron escalas de aculturación (prácticas de latinidad, identidad latina, valores colectivos, prácticas culturales, identidad estadounidense, valores individuales), actitudes con respecto al uso del cigarrillo, las percepciones de normas subjetivas respecto al uso del cigarrillo y las intenciones de uso del cigarrillo. Un modelo de ecuación estructural, indicó que los valores colectivos están asociados con la desaprobación percibida del uso de cigarrillos, lo cual a su vez está asociado negativamente con las intenciones del uso de cigarrillos. Los valores colectivos pueden ser un factor protector con respecto a las intenciones del uso de cigarrillos en los y las jóvenes inmigrantes latino/as. Consecuentemente, los esfuerzos para educar con respecto a la prevención del uso del tabaco pueden promover los valores colectivos y diseminar mensajes sobre las consecuencias negativas del uso del tabaco en las relaciones interpersonales.

Keywords

Culture; Gender; Cigarette use intentions; Latino/a youth

Palabras clave

Cultura; Género; Intenciones del uso de cigarro; juventud latina

According to the 2014 Surgeon General's report on smoking and health, 5.6 million children alive today will die early of smoking-related causes such as lung, liver, and colorectal cancer (USDHHS, 2014). This is why youth smoking prevention and reduction has become of critical importance (USDHHS, 2014). Cigarette smoking prevalence is particularly high among Latino/a youth. According to national surveys, prevalence of lifetime smoking is highest among Latino/a school-aged youth (48.6%) compared to their White (44.2%) and Black (39.1%) peers (CDC, 2011), possibly increasing their risk for the three leading causes of cancer deaths (i.e., lung, colorectal, and liver cancer) among U.S. Latino/a adults (Siedel, Naishad, & Jemal, 2012).

Among Latino/a youth, males report higher lifetime prevalence of smoking (51.5%) than Latina females (45.5%) (CDC, 2011). Moreover, risk for smoking seems to increase as youth spend time in the U.S., with girls' smoking being more strongly impacted by acculturation than boys' smoking (Lorenzo-Blanco, Unger, Ritt-Olson, Soto, & Baezconde-Garbanati, 2011). If acculturation is associated with higher smoking risk, we need to understand why. This information can inform smoking prevention programs.

Latino/a youth are not only at high risk for cigarette smoking, but they also belong to one of the largest and fastest growing ethnic minority groups in the U.S. (Ennis, Rios-Vargas, & Albert, 2011). Latino/as make up 16% of the U.S. population and they are expected to account for 30% of the U.S. population by 2050. Latino/as are also a young population and make up 22% of all children under the age of 18. The majority of Latino/as are immigrants or children of immigrants (Fry & Passel, 2009), highlighting the relevance of immigration-related experiences on their well-being.

Latino/a adults can experience shifts in their smoking-related attitudes with acculturation (Marin, Marin, Otero-Sabogal, & Sabogal, 1989) but it is unclear if this holds true for youth. The substance use literature indicates that with acculturation Latino/a youth may adopt more permissive attitudes and norms regarding substance use and that this shift in their substance use attitudes and norms may increase their risk for substance use such as smoking (Marin et al., 1989; Marsiglia, Kulis, Hussaini, Nieri, & Becerra, 2010). To test whether acculturation is associated with more permissive smoking attitudes and norms in Latino/a youth the current study draws from *the Theory of Reasoned Action*.

The Theory of Reasoned Action (TRA)

TRA provides a framework for understanding how and why youth smoke (McMillan, Higgins, & Conner, 2005). Broadly, this theory holds that intentions to engage in a behavior, such as smoking, directly influence an individual's decision to engage in the behavior (e.g., smoking). According to TRA, intentions to engage in a specific behavior are largely determined by an individual's attitudes toward a behavior and one's perceived subjective norms regarding such behavior. Attitudes are evaluations of the consequences of a specific behavior and perceived subjective norms entail approval or disapproval of a specific behavior. In regards to youth smoking, TRA postulates that youth smoke cigarettes because their smoking related attitudes, along with their perceived subjective norms, lead them to intend to smoke (McMillan et al., 2005). One area in which TRA can be extended to understand smoking susceptibility among Latino/a youth is by including cultural and sociocultural influences on youth attitudes and norms. Important socio-cultural influences on Latino/a youth development include immigration-related experiences such as acculturation, which has been linked with Latino/a youth smoking (Lorenzo-Blanco et al., 2011). Accordingly, the current study examined the influence of acculturation on Latino/a youth's health risk attitudes toward and perceived social disapproval of smoking. It also investigated the relationships of health risk attitudes toward smoking and perceived social disapproval with youth's intentions to smoke cigarettes within thirty days.

Latino/a Youth Acculturation: Cultural Dimensions and Domains

Dimensions

Acculturation is a bidimensional process of receiving culture acquisition and heritage culture retention (Berry, 1997). Latino/a youth often continue to learn about and adhere to elements of their Latino/a culture as they learn about and adopt aspects of their receiving U.S. culture (Padilla & Perez, 2003). However, until recently, studies on Latino/a youth smoking have operationalized acculturation as a unidimensional process in which Latino/a youth were

assumed to discard their cultural heritage as they gravitate towards U.S. culture (Thomson & Hoffman-Goetz, 2009). The use of unidimensional measures of acculturation has provided a fragmented understanding of how acculturation impacts Latino/a youth smoking (Schwartz et al., 2010).

Domains

Acculturation can impact various life domains such as the behaviors, values, and self-identifications of immigrants (Sam & Berry, 2010). Accordingly, Schwartz and colleagues (2010) presented a bidimensional and multidomain model of acculturation in which receiving-culture acquisition and heritage-culture retention each operate within three separate yet related domains. Receiving-culture acquisition entails orientations towards U.S. *practices* (e.g., English language acquisition; consuming U.S. media and foods), U.S. *cultural values* (e.g., individualism and independence), and *U.S. ethnic identifications* (e.g., identifying as U.S. American). Heritage-culture retention, on the other hand, includes orientations towards *Latino/a practices* (e.g., Spanish language acquisition, retention and use; consuming Latino/a media and foods), *Latino/a cultural values* (e.g., collectivistic values and a focus on interdependence), and *Latino/a ethnic identifications* (e.g., identifying as Latino/a). This bidimensional and multidomain model (compared to previous models) allows for the pinpointing of the specific domains that are linked with cigarette smoking risk, providing more specific insights into where best to intervene to prevent smoking.

Latino/a Youth Acculturation and Cigarette Smoking

Acculturation scholars propose that acquisition of U.S. cultural elements increases risk for cigarette smoking while retention of Latino/a cultural elements decreases risk (De La Rosa, 2002). Consistent with this notion, studies based on unidimensional acculturation models have connected U.S. cultural practices with higher and Latino/a cultural values with lower cigarette smoking among Latino/a youth (Epstein, Botvin, Diaz, 1998; Lorenzo-Blanco, Unger, Ritt-Olson, Soto, & Baezconde-Garbanati, 2013). However, findings on the associations of acculturation with cigarette smoking are mixed. Some studies report higher prevalence of cigarette use among "more acculturated youth" (i.e., who prefer to speak English) than "less acculturated youth" (i.e., who prefer to speak Spanish) (Epstein, Botvin, & Diaz, 1998), while others report inverse associations (Lorenzo-Blanco et al., 2011) or report that the association of acculturation with smoking is stronger for girls than boys (Lorenzo-Blanco et al., 2011). These inconsistent findings limit our understanding of how acculturation is related with smoking. One possible reason for these mixed results is the use of simplistic measures of acculturation (Thomson & Hoffman-Goetz, 2009). Thus, more tobacco research is needed that employs more complex measures of acculturations.

Latino/a Acculturation, Gender, and Cigarette Smoking

In traditional Latino cultures, it is more acceptable for boys to smoke than for girls (Bethel & Schenker, 2005). As they acculturate, girls may experience greater shifts in smoking attitudes and norms than boys because in traditional Latino/a culture, the norms for boys to smoke resemble the more permissive norms to smoke of the U.S. culture (Bethel & Schenker, 2005). These gendered socialization experiences could partly explain why girls'

smoking is more affected by acculturation than boys' smoking (Bethel & Schenker, 2005). Moreover, in a cross-sectional study that employed a unidimensional model of acculturation, Marsiglia et al. (2010) reported that, among Mexican American youth, pro-drug norms mediated the effect of U.S. cultural practices (i.e., speaking English) on alcohol use; and that the mediating influence of pro-drug norms was stronger for girls than boys. More research is needed that investigates how acculturation influences the smoking-related attitudes and norms of Latino/a youth and how these vary by gender.

The Current Study

Past research on Latino/a youth acculturation and TRA have relied on cross-sectional data and employed simplistic models of acculturation. Results from extant studies may not fully reflect the lived experiences of Latino/a youth (Schwartz et al., 2010). Moreover, studies are needed that extend the broader substance use literature on acculturation and TRA to the tobacco literature. Thus, to address these gaps in the tobacco and culture literatures, this longitudinal study examines the different components of acculturation (U.S. and Latino/a cultural practices, values, and identifications) and their associations with health-risk attitudes and negative subjective norms toward smoking in a sample of recent immigrant youth. It also tests how health-risk attitudes and negative subjective norms, in turn, are linked with intentions to smoke. In developing the theoretical model depicted in Figure 1, we integrated theory and empirical research on the TRA, acculturation, and Latino/a youth smoking.

Consistent with work indicating that adopting receiving cultural elements (i.e., becoming Americanized) leads to more permissive attitudes and norms, we expected U.S. practices at Time 1 (e.g., enjoying U.S. oriented places, enjoying U.S. music, enjoying U.S. dances, and enjoying U.S. TV), U.S. identity at Time 1 (e.g., having a strong sense of belonging to the U.S., being happy to be U.S. American), and individualistic values at Time 1 (e.g., often doing one's own thing, relying on oneself most of the time) to be associated with less health risk attitudes toward smoking (e.g., thinking that people risk harming themselves if they try cigarettes) and lower negative subjective norms towards smoking (e.g., perceiving that teachers will disapprove of youth smoking) at Time 2. Conversely, we hypothesized that Latino/a cultural practices at Time 1 (e.g., enjoying Latino/a oriented places, enjoying Latino/a music, enjoying Latino/a TV), Latino/a ethnic identity at Time 1 (e.g., having a strong sense of belonging to one's ethnic group, being happy to be a member of one's ethnic group) and collectivistic values at Time 1 (e.g., being proud if a friend won a prize and getting pleasure from spending time with others) would be negatively associated with less health risk attitudes toward smoking at Time 2 (e.g., thinking that people risk harming themselves if they try cigarettes) and would be positively associated with negative subjective norms towards smoking at Time 2 (e.g., perceiving that others will disapprove of youth smoking). As suggested by TRA, we further expected less health risk attitudes toward smoking at Time 2 (e.g., thinking that people risk harming themselves if they try cigarettes) and negative subjective norms towards smoking at Time 2 (e.g., perceiving that others will disapprove of youth smoking) to be linked with more intentions to smoke at Time 3 (e.g., planning to smoke cigarettes in the future).

We also expected to find gender differences. Based on the assertion that in traditional Latino/a cultures it is more acceptable for boys to smoke, we expected the links of acculturative processes (U.S. and Latino/a practices, values, and identifications) with attitudes and norms to be stronger for girls than boys.

Method

Sample

The sample consisted of 303 adolescents from Miami ($N = 153$) and Los Angeles ($N = 150$) who had resided in the United States for five years or less at baseline. The sample was 47% female, and the mean age at baseline was 14.51 years ($SD = 0.87$, range 14–17). The majority of the adolescents (92%) were born outside the U.S. and a small number of adolescents (8%) were U.S. born but were raised in Latin American countries. Approximately 32% of the students were born in Mexico and 30% in Cuba, followed by the U.S. (7%), El Salvador (6%), Honduras (5%), Nicaragua (5%), Guatemala (4%), Dominican Republic (4%), Colombia (3%), Peru (2%), and other South/Central Latin America (2%). Almost all of the students (98%) reported Spanish as their "first or usual language"; 82% reported "speaking mostly Spanish at home" and 17% reported speaking "English and Spanish about the same at home."

Procedures

School Selection and Participant Recruitment—We selected schools whose student body was at least 75% Latino. In total, 23 schools took part in the study (10 in Miami; 13 in Los Angeles). The study was approved by the Institutional Review Boards at the University of Miami and the University of Southern California, and by each of the participating school districts. A detailed description of the school selection and participant recruitment has been published elsewhere (Schwartz et al., 2013).

Assessment Procedures—Baseline data were gathered during the summer of 2010, and subsequent time points occurred during Spring 2011, Fall 2011, Spring 2012, and Fall 2012. Participants completed the assessments at the universities' research centers, the adolescents' school, a convenient community location, or their homes. The survey was available in Spanish and English and adolescents responded to the same survey questions across all time points. Adolescent assessments were completed using an audio computer-assisted interviewing (A-CASI) system (Turner et al., 1998) on laptop computers. The system displays each item and response choices on the computer screen while the item and response choices are read to the participant through a set of headphones. As incentives, each adolescent received a voucher for a movie ticket at each of the time points. Prior to the baseline assessment, parents provided informed consent for their adolescents, and adolescents provided informed assent.

Measures - Predictors at Baseline (Time 1)

Acculturation—*Latino/a* and U.S. *cultural practices* were measured using the Bicultural Involvement Questionnaire (BIQ-S; Guo, Suarez-Morales, Schwartz, & Szapocznik, 2009). Twelve items assessed U.S. practices and 12 assessed Latino/a practices. A sample item

included "You enjoy American-oriented places," measured on a 5-point Likert scale, ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Cronbach's alphas were .91 for U.S. and .88 for Latino/a practices.

Individualistic and collectivistic cultural values were assessed with 16 items from the Individualism-Collectivism Scale (Triandis & Gelfand, 1998). Eight items assessed individualism, and eight items assessed collectivism. A sample item for individualistic values included "I'd rather depend on myself than on others" and a sample item for collectivistic values included "If a friend or classmate gets a prize, I would be proud." Adolescents rated items on a Likert Scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Cronbach's alphas were .73 for individualism and .79 for collectivism.

U.S. and Latino/a Identity were assessed using parallel versions of the Multi-Group Ethnic Identity Measure (MEIM; Roberts et al., 1999). In the U.S.-identity version, "the United States" was inserted in place of "my ethnic group" (Schwartz et al., 2012). A sample item included "I have a lot of pride in my ethnic group/the United States". Cronbach's alphas were .88 for U.S. identity and .91 for Latino/a identity.

Measures – Outcomes and Predictors at Time 2

Health Risk Attitudes toward Smoking—We assessed students' attitudes toward smoking with two questions that tapped into their perceived risk of smoking cigarettes: "How much do you think people risk harming themselves (physically or in other ways), if they try cigarettes once or twice?" and "How much do you think people harm themselves (physically or in other ways), if they smoke cigarettes occasionally?" Response choices ranged from 0 (*Great risk*) to 3 (*No risk*). Higher scores represent less health risk attitudes toward smoking (Cronbach's α=.79).

Negative Subjective Norms toward Smoking—Three questions measured students' perceptions of how much their friends, teachers, and others would disapprove if they smoked cigarettes: "If your friends found out that you smoked cigarettes or used chewing tobacco, snuff or dip, how do you think they'd feel?", "How much would your teachers disapprove if they found out that you were smoking cigarettes?", and "How much would others disapprove if they found out that you were smoking cigarettes?" Response options for question 1 included 0 (*They would approve*), 1 (*They would disapprove but still be my friends*), 2 (*They would disapprove and stop being my friends*), or 3 (*They wouldn't care*). We recoded this question to the following sequence of response options; 0 (*Approve*), 1 (*Don't care*), 2 (*Disapprove but still be friends*), and 3 (*Disapprove and stop being friends*). Thus, higher scores represent more disapproval of smoking. Response options for questions 2 and 3 ranged from 0 (*Very much*) to 3 (*Not at all*). We reverse coded these two items, so that higher scores would represent more disapproval Cronbach's α=.60). Higher scores represent more negative subjective norms.

Measures – Outcomes at Time 3

Intentions to Smoke Cigarettes—We assessed *intentions to smoke within the next three months* with one question: "Do you think you will smoke a cigarette in the next three

months?" Response options were 1 (*Definitely no*), 2 (*Probably no*), 3 (*Probably yes*) and 4 (*Definitely yes*). Due to the skewed distribution of this variable, we recoded this question by collapsing "Definitely yes" and "Probably yes" into a single response, and likewise with "Definitely no" and "Probably no".

Demographic Characteristics—Age and gender were self-reported.

Analytic Plan

We conducted descriptive analyses for all study variables with SPSS version 21.0 (SPSS IBM, 2012). We tested for gender and site (Miami versus Los Angeles) differences in all study variables. T-tests were used for continuous variables and chi-square tests for categorical variables. We used Mplus Version 7.1 (Muthen & Muthen, 1998 – 2012) to estimate structural equation models. Missing data were handled in Mplus 7.1 using weighted least squares estimation which uses all available data, except for missing variables on covariates. Weighted least squares estimation has been demonstrated to be superior to other missing data techniques in terms of aspects of model estimation, bias, and efficiency, and it is relatively equivalent to multiple imputation techniques (Asparouhov & Muthén, 2010).

Results

Descriptive Statistics

Table 1 displays descriptive statistics for all study variables, separately for girls ($n = 141$) and boys ($n = 160$), and separately for Miami ($n = 153$) and Los Angeles ($n = 150$) youth. Bivariate correlations among all measured study variables are shown in Table 2.

Overall Structural Equation Modeling (SEM)

First, we constructed parcels as indicators of latent constructs to improve the parsimony of our measurement and structural models (Little, Rhemtulla, Gibson, & Schoemann, 2013). Parceling reduces a large number of indicator items into a smaller number of parceled indicators, increasing the likelihood that the latent construct will explain the majority of the shared variability among the indicators (Little et al., 2013). We constructed parcels for the acculturation scales because they consisted of many items. In constructing parcels, we first conducted exploratory factor analyses on each of the acculturation scales (i.e., Latino/a and U.S. practices, identities, and values) to determine the dimensionality of the scales. We did this to identify an appropriate parcel construction method (Coffman and McCallum, 2005). All exploratory factor analyses were conducted in SPSS version 21.0 (SPSS IBM, 2012). We obtained a two-factor model for each acculturation scale and constructed, as outlined by Coffman and MacCallum (2005), two domain and one non-domain specific parcel for each scale. For example, we obtained a two-factor model for the U.S. identity scale. One factor consisted of four items and the other factor consisted of eight items. To construct domain-specific parcels, we randomly assigned four items of the first factor and four items of the second factor to two different parcels. We then created a third non-domain specific parcel by assigning the remaining items of the second factor to a third parcel.

After constructing the indicators, we estimated a structural equation model, using Mplus Version 7.1 (Muthén & Muthén, 1998 – 2012), to test our theoretical model shown in Figure 1. For all models, we evaluated overall fit using the comparative fit index (*CFI*), the chi-square test of model fit (χ^2), and the root mean square error of approximation (*RMSEA*) (Hu & Bentler, 1998). We undertook a two-stage approach to modeling (Anderson & Gerbing, 1988). We first estimated the measurement model to ensure that the psychometric properties of the measures were adequate and that the items loaded on the hypothesized factors. Next, we estimated the structural model (Figure 1).

Structural Equation Modeling with the Overall Sample—The measurement model had excellent model fit (χ^2=269.259, *df*=203, *p*<05; *CFI*= .981; *RMSEA*=.033, 90% *CI* [.021, .043]). The structural model (Figure 1) provided good model fit (χ^2=327,351, *df*=246, *p*<001; *CFI*=.936; *RMSEA*=.033, 90% *CI* [.023, .042]). As shown in Figure 2, standardized path coefficients indicated that Latino/a Identity was associated with more health risk attitudes (β=−.21) and collectivistic values were linked with more negative subjective norms (β=.27). Negative subjective smoking norms, in turn, were linked with lower intentions to smoke (β=−.30).

Multi-Group Structural Equation Modeling: Gender as a Moderator—Next, we examined gender as a moderator using multi-group structural equation modeling. That is, we conducted multi-group structural equation modeling with gender as a grouping variable to determine whether the structural paths and depicted relationships differed for boys and girls. First, we tested for configural invariance to see whether the form of the measurement model was invariant across gender (Dimitrov, 2010). We identified and tested a baseline measurement model separately for boys and girls which produced good model fit indices for boys (*CFI* =.978; *RMSEA*=.036, 90% *CI* [.014, .051]; χ^2=245.839, *df* =204, *p*<05) and girls (*CFI*=960; *RMSEA*= .046, 90% *CI* [.029, .061]; χ^2=265.993, *df*=204, *p*<05), suggesting that the form of the measurement is applicable for boys and girls. Next, we tested for measurement invariance by testing two models with the overall sample (i.e., boys and girls combined) (Dimitrov, 2010). In the first model, we constrained the measurement model to equality between boys and girls. In the second model, we released all equality constraints across gender. Next, we examined the fit of the constrained (*CFI*=968; *RMSEA*=.041, 90% *CI* [.029, .052]; χ^2=549.155, *df*=438, *p*<001) and unconstrained (*CFI*=968; *RMSEA*=.042, *CI* [.030, .052]; χ^2=535.867, *df*=424, *p*<.001) models and conducted a chi-square difference test (χ^2=13,29, *df*=14, *p*=.504). The results indicated that that the measurement model was invariant across gender.

Second, we examined whether the structural form of our model (Figure 1) varied by gender. We first re-estimated the model fit by constraining both the measurement and structural paths in the structural model to equality between boys and girls. This fully constrained model provided good fit: χ^2=627.722, *df*=541, *p*<.05; *CFI*=.922; *RMSEA*=.033, 90% *CI* [.019, .044]). Next, we released all equality constraints on the structural model (*CFI* =.908; *RMSEA*=.036, 90% *CI* [.024, .047]; χ^2=626.576, *df* =524, *p*<05), which did not result in significant chi-square change (χ^2=18.31, *df* =17, p=3696). This finding indicates that our theoretical model is equally applicable for boys and girls.

Mediation Analyses

We conducted mediation analyses to determine whether collectivistic values predicted intentions to smoke by way of negative subjective norms. To test for mediation, we calculated confidence intervals using the Rmediation software (Tofighi & MacKinnon, 2011). Negative subjective norms did not qualify as a mediator in the analysis for intentions to smoke (95% CI= [−.477, .009]) (McKinnon, 2008).

Discussion

This study builds on previous knowledge about acculturation and TRA to examine how acculturative processes are associated with Latino/a youth smoking attitudes, norms, and intentions. Analyses accounted for the role of gender because Latino/a youth acculturation and smoking have been described as gendered experiences (Bethel & Schenker, 2005). Collectivistic values were linked with more social disapproval of smoking which in turn were linked with lower intentions to smoke. Attitudes and norms towards smoking often develop before youth intent to use cigarettes; thus, modifications in attitudes and norms are often a focus of youth smoking prevention programs (Botvin, Dusenbury, Baker, James-Ortiz, & Kerner, 1988). Acculturation can influence the smoking attitudes and norms of Latino/a adults (Marin et al., 1989) and the current study extends this research to Latino/a youth. Understanding the links among acculturation, attitudes and norms can inform youth prevention programs to reduce smoking intentions among Latino/a youth.

Key Findings and Their Implications

Consistent with the notion that Latino/a cultures sanction smoking among boys to greater extent than among girls (Bethel & Schenker, 2005), girls reported higher levels of perceived social disapproval of smoking than did boys. Latino/as might learn through social influences that it is more socially acceptable for boys to smoke than it is for girls, possibly placing boys at greater risk for smoking. Girls also endorsed higher levels of Latino/a cultural practices and collectivistic values. If retention of Latino/a cultural elements is protective against smoking, (De La Rosa, 2002), these findings suggest a gender-differentiated protective factor that may help explain why the links of acculturation (generally measured as U.S. culture acquisition) with smoking tend to be stronger for Latina girls than for boys (Lorenzo-Blanco et al., 2011). Although this study did not investigate the link from intentions to actual smoking, this link has been established previously and it is thus plausible that collectivistic values protect against Latino/a youth smoking (Guilamo-Ramos, Holloway, Bouris, & Crossett, 2011). To investigate this possibility, we developed a model of pathways by which acculturation influences attitudes, norms, and intentions.

As hypothesized, Latino/a identity was associated with more health risk attitudes toward smoking. However, health risk attitudes toward smoking were not associated with more intentions to smoke. Additionally, collectivistic values were associated with more perceived social disapproval of smoking, and perceived social disapproval was, in turn, associated with more intentions to use cigarettes. These findings suggest that collectivistic values may instill in immigrant Latino/a youth the perception that smoking is not approved by their social

environment. This perception may protect them from intending to use cigarettes, possibly to avoid social consequences.

Identity-Based Motivation (IBM) may provide one theoretical explanation for how and why collectivistic values may protect Latino/a youth from intentions to smoke (Oyserman, Fryber, & Yoder, 2007). According to IBM, individuals are more likely to engage in health promoting behaviors (e.g. not using cigarettes or not intending to use cigarettes) if health promoting behaviors (e.g., not using cigarettes or not intending to use cigarettes) are congruent with their social identity/ies (e.g. "I am Latino/a"). This seems to be especially true for behaviors that are identity-congruent (e.g., "Latino/as do not smoke cigarettes or intent to smoke cigarettes") because these behaviors may allow individuals to feel included in ones in-group (e.g., feeling included in the social category "Latino/a"). So, Latino/a youth who self-identify as Latino/a, may perceive that being more collectivistic oriented is part of what it means to be Latino/a (e.g., "We Latino/as value interdependence) and as a result Latino/a youth may be more likely to be affected by perceived social disapproval of smoking or intending to smoke, possibly protecting youth from intending to smoke cigarettes. In the current study, collectivistic values were linked with more perceived social disapproval of smoking which in turn was linked with less smoking intentions. According to IBM, this might be due to recent immigrant Latino/a youth endorsing a strong sense of being Latino/a and they may perceive that being Latino/a means endorsing a more collectivistic self-concept, which may protect youth from cigarette use intentions by fostering perceived social disapproval of smoking.

Additionally, the processes from acculturation to smoking-related attitudes and norms unfold *similarly* for boys and girls. Although girls may endorse more social disapproval of smoking, acculturation has the same influence on their attitudes and norms than it has on boys. This might be because in U.S. culture, it is also more acceptable for boys to smoke than it is for girls (Rohrbach & Milam, 2006). Thus, acculturation may affect Latina/o girls' and boys' smoking-related attitudes and norms similarly because gendered substance use norms also exist in the U.S.

Limitations

These results should be interpreted in light of several limitations. First, data were self-reported. Second, we did not account for the influence of peer, adult, and community factors on youth attitudes and norms, which can have important influences on youth smoking related attitudes (Duan, Chou, Andreeva, & Pentz, 2009; Simons-Morton, Haynie, Crump, Eitel, & Saylor, 2001). Future studies should develop and test more comprehensive models that account for additional influences on Latino/a youth smoking attitudes and norms.

A third limitation of the current study includes the measurement of smoking-related attitudes. The current study assessed student's health risk attitudes toward smoking and health risk attitudes toward smoking were not associated with youth's intentions to smoke cigarettes. It is possible that a more comprehensive measure of smoking attitudes that assess for health risk and smoking-related attitudes in other areas of everyday life (e.g, Marin et al., 1998; Leatherdale, Brown, Cameron, & McDonald, 2005; Lorenzo-Blanco et al., 2010) would yield different results. For example, it is possible that among Latino/a youth measures

of smoking-related attitudes that assess the degree to which smokers are viewed favorably or unfavorably in interpersonal relationships (e.g., dating partners) may influence their intentions to use cigarettes. Similarly, it is possible that among Latino/a youth, measures of smoking-related attitudes that assess how second-hand smoke may influence the health of others may impact youth's intention's to smoke (Shore, Tashchian, & Adams, 2000). Future studies should replicate the current study by using a more comprehensive measure of smoking attitudes that assess for health risk and other smoking-related attitudes (Leatherdale, Brown, Cameron, & McDonald, 2005; Lorenzo-Blanco et al., 2010)."

Moreover and due to low smoking rates in the current sample (n=17; 6.7%) and few female smokers (n=5; 4.1%), we did not include cigarette use as an outcome at time 4. Including cigarette use at time 4 would have prevented us from comparing our model by gender. However, given that our sample consists of recently immigrant Latino/a youth, it is likely that their smoking will increase as they navigate the U.S. cultural context (assuming acculturation is associated with higher smoking risk), making the results of this study highly relevant for smoking prevention (Epstein, Botvin, & Diaz, 1998; Lorenzo-Blanco et al., 2011).

According to the healthy migrant hypothesis most Latino/a youth and their families who immigrate to the U.S. are healthy (e.g., they have low smoking rates, higher SES, better job skills, more ambition and self-efficacy to improve their lives, etc.) and have lower smoking prevalence then youth who remain in their country of origin or Latino/a youth who have spent more time in the U.S. (Abraido-Lanza, Dohrenwend, Ng-Nak, & Turner, 1999; PAHO, 2004). Thus, early smoking prevention efforts for Latino/a youth could benefit from targeting recent immigrant Latino/a youth. Our focus on intentions to smoke may provide important information for smoking prevention for Latino/a immigrant youth because intentions to try out cigarettes tend to develop before youth try out cigarettes. Additionally, in the overall sample (N=303) intentions to smoke were positively associated with cigarette use. This suggests that intentions to smoke is an important predictor of youth smoking in recent immigrant Latino/a youth and understanding how acculturation influences their intentions to smoke may provide vital information for prevention.

Additionally, results for the current study may not generalize to all Latino/a youth in the U.S. First, a majority of youth in Miami were Cuban (61%), and the majority of youth in Los Angeles were Mexican (70%). Much smaller numbers of other Latino/a subgroups were represented in the current study, and it is not clear how findings from the current study reflect the experiences of other Latino/a recent immigrant subgroups (e.g., Puerto Ricans, Guatemalans). It is important for future studies to recruit more heterogeneous samples with regard to Latino/a nationality. This would allow researchers to examine within-group differences among Latino/a youth from diverse socio-cultural backgrounds. Second, youth in the current study were recent immigrant youth whose experiences might differ from those of second or later generation Latino/a youth. This is why it is important to replicate the current study with second or later generation Latino/a youth. Third, both Miami and Los Angeles are relatively large and well-established receiving communities for Latino/a immigrants with many ethnic enclave neighborhoods that may lessen the negative context of reception and limit the experiences of discrimination. Findings from this investigation may not reflect the

experiences of youth who migrate into new settlement communities (e.g., the Midwest and Deep South) that have less experience interacting with newcomers (Barrington, Messias, & Weber, 2012). Therefore, future studies should aim at replicating the current study with Latino/a immigrant youth in less established but growing settlement communities (Rodriguez, 2012).

Fourth, the current study is based on the binary gender system that assumes that youth either identify as male or female, thereby, ignoring the possibility of youth endorsing a gender identity other than male or female such as transgender. This limits our understanding of how gender influences youth smoking and how acculturation influences the smoking of Latino/a youth who identify as transgender. An important next step in research on Latino/a youth acculturation, gender, and cigarette smoking is the inclusion of gender identities other than male or female (e.g., transgender). Thus, findings from the current study may not generalize to youth who do not identify as either male or female and future research on Latino/a youth acculturation and cigarette smoking should allow youth to identify as male, female, transgender, or other gender identities.

Lastly, the study design of this research could not account for change over time. Acculturation, however, implies change in acculturation domains, attitudes and norms towards cigarettes and smoking intentions. To completely account for change in the process from acculturation to intentions to smoke cigarettes through attitudes and norms, nine different Latent Curve Models would have to be tested, a research endeavor that is beyond the scope of the current study. That said, an important next direction in research on Latino/a youth acculturation, TRA, and cigarette use intentions is to assess change over time. For example, future research questions that could build on the current study may include: (a) Do collectivistic values change over time? (b) Is change in collectivistic values linked with change in attitudes and norms? (c) Is change in attitudes and norms linked with change in intentions to smoke cigarettes? and (d) Do these changes occur equally for males and female? Assessing change over time would allow researchers to investigate if collectivistic values indeed decrease with life in the U.S. and if this potential decrease in collectivistic values increases youth's risk for using cigarettes, further providing insights into ways acculturation influences Latino/a youth's intentions to use cigarettes.

Despite these limitations, the present results provide a more nuanced understanding of which acculturation domains (U.S and Latino/a practices, values, and identifications) are linked with intentions to smoke. This information can inform prevention and intervention strategies to reduce youth's intentions to smoke.

Implications for Prevention and Intervention

Collectivistic values were linked with more social disapproval of smoking which in turn was linked with lower intentions to smoke. School- or family-based smoking prevention, programs for Latino/a youth could foster collectivistic values and promote messages about the harmful effects of smoking on interpersonal relationships.

Educational programs could also address the dynamic between individualistic and collectivistic values and target maintenance of collectivistic values. Latino/a youth in the

U.S. may feel pressured to adopt more individualistic values in schools as a way to fit in with their non-Latino/a white (or later-generation Latino/a) peers. They may perceive that adopting more individualistic values is desirable in the US where Latino/a youth often experience discrimination and are frequently viewed as out-group members (Lorenzo-Blanco et al., 2011). Having open discussions about these cultural differences may allow youth to appreciate the beneficial role of collectivistic values in Latino/a culture and the role of individualistic values in U.S. culture. This may help them to resist the pressure to adopt individualist values at the expense of disconnecting with collectivistic values. Such efforts would be consistent with interventions aimed at increasing biculturalism and could be extended to target Latino/a youth smoking intentions (Smokowski & Bacallao, 2009).

Acknowledgments

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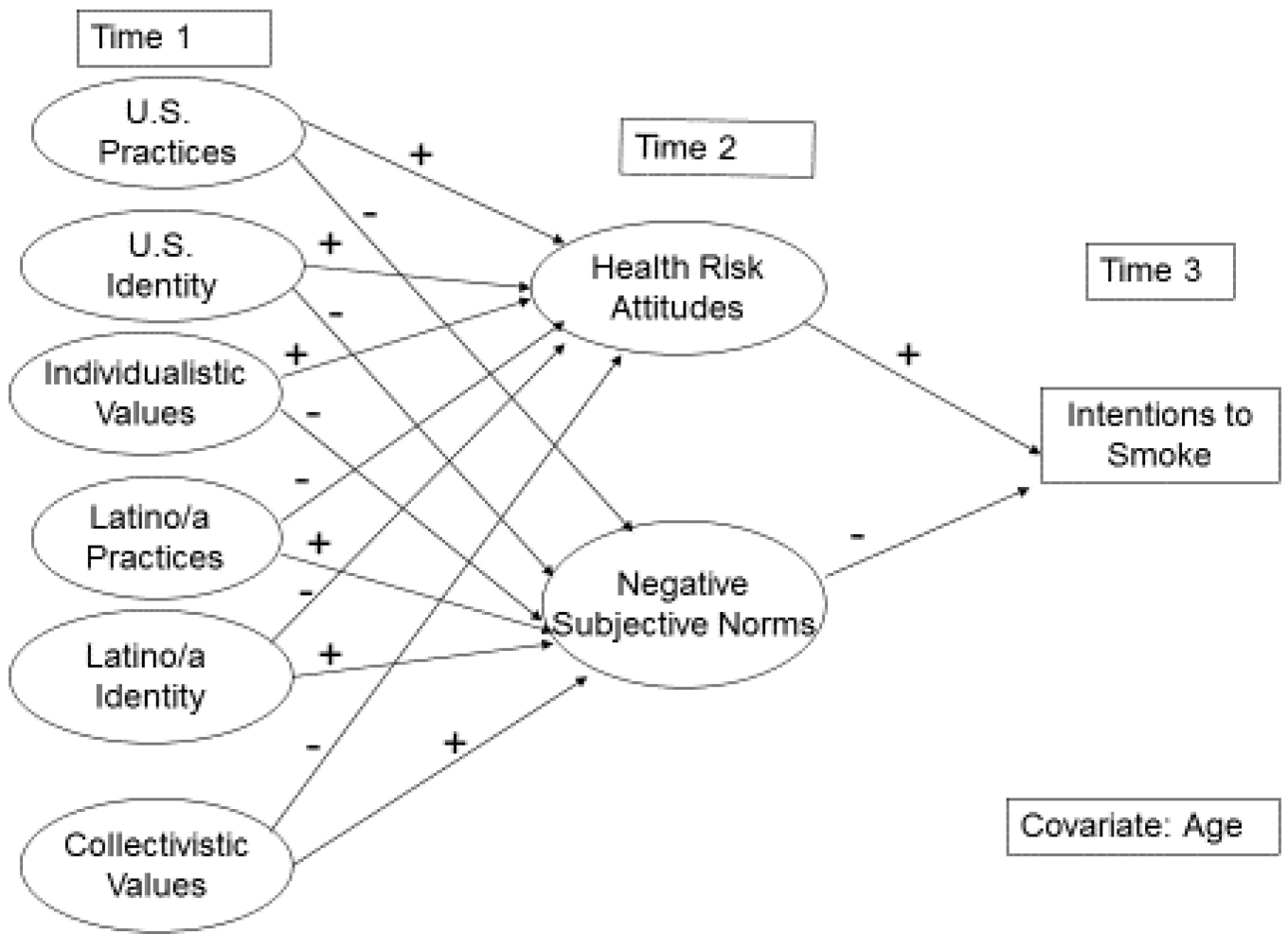
Figure 1.
Theoretical model based on the theory of reasoned action and multidomain acculturation theory.
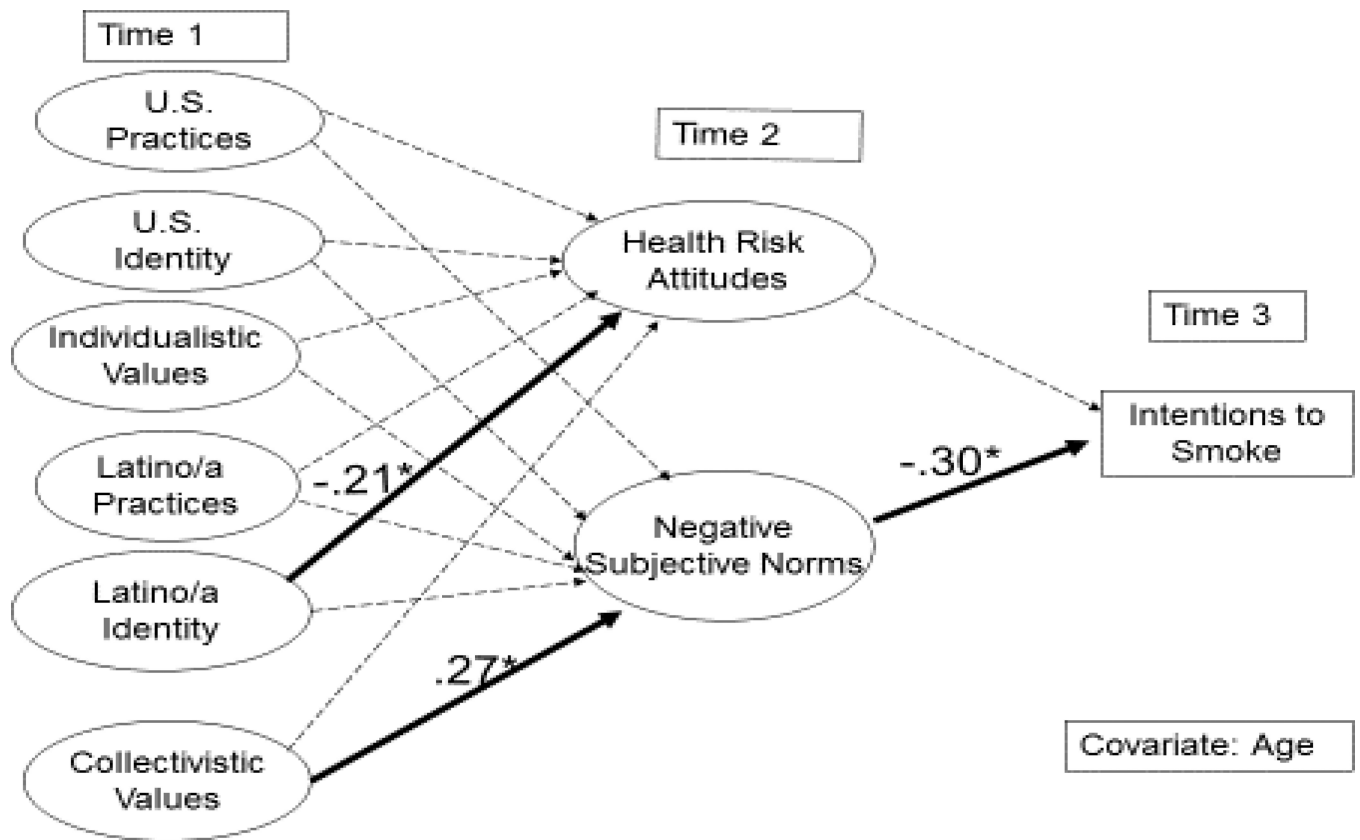
Figure 2.
Results with the overall sample ($N = 303$) and intentions to smoke as an outcome variable.
Notes. Dashed lines indicate non-significant paths. Although we had observed differences in descriptive variables between youth from Los Angeles and Miami, we did not control for site differences. Controlling for site worsened model fit (χ^2=163.265, *df*=22, *p*=1.00) and produced unacceptable model fit indices (*CFI*=.837; *RMSEA*=.053, 90% *CI* [.045 .060]; χ^2=490.616, *df*=268, *p*<.001), suggesting that site differences should not be controlled for.

Table 1

Descriptive Characteristics for Overall Sample, Girls, Boys, Miami and Los Angeles Youth

Variables	Overall Sample N = 303 N(%) or M (SD)		Girls n = 141 N(%) or M (SD)		Boys n = 160 N(%) or M (SD)		Miami n = 153 N(%) or M (SD)		Los Angeles n = 150 N(%) or M (SD)	
Age										
13 years	26	8.6	15	10.6	11	6.9	15	9.8	11	7.3
14 years	141	46.5	60	42.6	81	50.6	64	41.8	77	51.3
15 years	93	30.7	46	32.6	45	28.1	48	31.4	45	30.0
16 years	33	10.9	15	10.6	18	11.3	19	12.4	14	9.3
17 years	6	2.0	3	2.1	3	1.9	5	3.3	1	0.7
Missing	4	1.3	2	1.4	2	1.3	2	1.3	2	1.3
U.S. Practices	27.82	10.08	27.72	10.15	28.04	9.98	26.63	9.91	29.03	10.15 *
U.S. Identity	27.05	8.35	26.33	8.08	27.78	8.55	28.61	8.01	25.45	8.41 *
Individualistic Values	19.71	4.90	19.52	5.30	19.84	4.55	20.79	4.76	18.6	4.81 **
Latino/a Practices	33.17	8.50	34.32	8.03	32.27	8.66 *	34.58	7.65	31.73	9.09 *
Latino/a Identity	32.01	7.90	32.70	7.31	31.44	8.41	33.22	7.82	30.79	7.82 *
Collectivistic Values	24.47	4.07	25.62	3.69	23.79	4.29 *	25.69	3.83	23.23	3.93 **
Attitudes Towards Smoking	1.28	1.59	1.11	1.49	1.45	1.67	1.21	1.68	1.36	1.49
Subjective Smoking Norms	6.25	2.19	6.60	1.93	5.94	2.34 *	6.12	2.21	6.39	2.16
Intentions to Smoke										
Yes	21	6.9	8	5.7	12	7.5	7	4.6	14	9.3
No	235	77.6	115	81.6	119	74.4	134	87.6	101	67.3
Missing	53	17.4	18	12.8	29	18.1	16	10.5	35	23.3

*
$p < 0.05$

**
$p < 0.001$

Note: We lost 2 cases due to missing cases for the gender variable.

Table 2

Intercorrelations between all Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12
1. Site	-											
2. Age	-.08	-										
3. Gender	-.08	.00	-									
4. U.S. Practices	.12*	-.05	-.02	-								
5. U.S. Identity	-.19*	-.10	-.09	.37**	-							
6. Individual Values	-.22**	.09	-.03	.06	.27**	-						
7. Latino/a Practices	-.17*	.00	.12*	-.14*	-.03	.05	-					
8. Latino/a Identity	-.15*	.12*	.08	.06	.24**	.25**	.29**	-				
9. Collectivistic Values	-.30**	.11	.18**	.13*	.24**	.26**	.32**	.47**	-			
10. Attitudes Towards Smoking	.05	-.05	-.11*	.10	.01	.02	-.15*	-.18	-.09**	-		
11. Subjective Smoking Norms	.06	.01	.15*	-.00	-.06	-.06	.00	.11	.06	-.33**	-	
12. Intentions to Smoke	.13*	.08	-.05	-.10	-.13*	-.02	-.08	-.10	-.15*	.10	-.21**	-

Note:

Categorical measures: Site, Gender, Intentions to Smoke, Intentions to Drink.

*
$p < 0.05$.

**
$p < 0.01$.