

LATINO/A ACCULTURATION, SMOKING, AND DEPRESSION: TOWARDS THE
DEVELOPMENT OF INTEGRATIVE SOCIO-CULTURAL MODELS

by

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DEDICATION

A mi abuela Inés, mis padres, mis hermano/as, mis tío/as, y primo/as.

A Raúl, Diego, y Maya – sin el apoyo de cuales no hubiera podido haber cumplido este proyecto.

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ABSTRACT

The majority of U.S. Latino/as are immigrants or children of immigrants and experience cultural, social, and psychological changes as they navigate the U.S. cultural context. This acculturation process has been linked with depression and smoking risk, especially among Latina women. Depression and smoking can have debilitating consequences, they often co-occur, and link with stress. Thus, it is vital to understand the acculturation process and why it puts Latino/as at risk for mental health and substance use problems. Organized around two studies, this dissertation provides a novel and real-world understanding of Latino/a acculturation. It builds on extant research to develop and test holistic models of acculturation, smoking and depression. It also brings a unique gendered lens to the study of Latino/a acculturation as it is one of the first to empirically examine if and how acculturation-related experiences (discrimination, family conflict, familismo, and family cohesion) differ for Latinos and Latinas. By focusing on depression *and* smoking, this dissertation identifies similarities and differences in pathways to depression and smoking, informing more sensitive ways to not only reduce depression but also smoking. Data came from the National Latino and Asian American Study (NLAAS), a national household survey that included 2,554 U.S. Latino/as (48% female; mean age = 38.02 years). Study 1 took a *person-centered approach* to the study of Latino/a acculturation, smoking, and depression. It showed that with acculturation, more women than men experience both problematic family lives and discrimination. For men, acculturation came mainly with elevated experiences of discrimination and not necessarily family conflict. Study 2 took a *process-oriented approach* to investigate pathways from acculturation to depression and smoking, separately for men and women.

Results revealed that men and women have more similar than different acculturation-related experiences but women experience greater changes in the family domain, possibly putting them at greater risk for depression. Findings indicate that Latina/o women and men can benefit from prevention and intervention efforts that combat discrimination against Latino/as, help Latino/as cope with discrimination, *and* strengthen positive family relationships. It discusses how findings can inform gender- and culture-specific strategies to reduce Latino/a smoking and depression.

CHAPTER 1

Introduction

Major Depressive Disorder (MDD) is one of the most burdensome diseases in the world (e.g., Andrade et al., 2003), and cigarette smoking is the leading cause of preventable death in the United States (U.S.) (CDC, 2008). U.S. Latino/as are at risk for MDD and cigarette smoking, possibly because they face a number of stressful life situations. For example, Latino/as are overrepresented among low-income and underserved groups, and researchers consistently find a relationship between low socioeconomic status (SES) and depression (Lorant et al., 2003). There is also growing evidence that unfair, differential treatment and negative external judgments about one's worth, such as discrimination, have deleterious effects on the well-being of U.S. Latino/as (e.g., Cook, Alegría, Lin, & Guo, 2009). The majority of Latino/as are immigrants or children of immigrants and as such they face the challenges associated with immigration and adaptation to a new and different society, further increasing their risk for MDD and smoking (e.g., Aguilar-Gaxiola, Kramer, Resendez, & Magana, 2008; Hovey, 2000a,b). Both depression and smoking have been linked with stress, and they often co-occur (Breslau, Peterson, Schultz, Chilcoat, & Andreski, 1998; Hammen, 2005; Pomerleau & Pomerleau, 1991; Todd, 2004). Thus, to the extent that Latino/as in the U.S. experience stress due to financial, occupational, and social challenges, they are at

increased risk for MDD and cigarette smoking (Mendelson, Rehkopf, & Kubzansky, 2008).

It is surprising, therefore, that Latino/as have lower prevalence of MDD and cigarette smoking than non-Latino/a whites (CDC, 2008; Hasin, Goodwin, Stinson, & Grant, 2005). However, risk for Latino/a MDD and smoking varies by nativity (i.e., foreign vs. U.S. born nativity), English and Spanish proficiency, and years spent in the U.S. That is, U.S. born Latino/as are at greater risk for depression and cigarette use compared to foreign born Latino/as, and risk for depression and smoking rises as Latino/as increasingly speak English and spend time in the U.S. (e.g., Alegria et al., 2007; Bethel & Schenker, 2005; Borges et al., 2008; Vega & Sribney, 2008). In other words, the more Latino/as *acculturate* to the dominant U.S. culture, the greater their risk for MDD and smoking. These associations seem to be particularly true for Latina women. Vega and Sribney (2008) found that women who preferred Spanish or a mix of Spanish and English rather than English only, had lower rates of MDD compared to women who preferred English or a mix of English and Spanish. There were no differences in rates of MDD among Latino men by language preference. Moreover, in a systematic review, Bethel and Schenker (2005) found a positive association between acculturation and current smoking for Latina women in nine of eleven studies, but only one of eight studies with Latino men found an association between acculturation and smoking. These data indicate that *acculturation* (i.e., U.S. born nativity, English language use and proficiency, time spent in the U.S.) increases risk for Latino/a

depression and smoking, and *enculturation* (i.e., foreign born nativity, Spanish language use and proficiency, time spent in country of origin) protects from MDD and smoking, but this may be more true for Latina women than Latino men (Borges et al., 2008; Vega & Sribney, 2008). Questions remain about the pathways through which acculturation leads to increased depression and smoking, as moderated by gender, in Latino/a populations.

Gaps in the Literature

Although studies on Latino/a acculturation and well-being have laid the groundwork for describing the heterogeneity of the Latino/a population (Abraido-Lanza, Armbrister, Florez, & Aguirre, 2006), there remain gaps in the literature. One limitation of prior work is its reliance on uni-dimensional acculturation models, which assume that Latino/as abandon or disengage from Latino/a cultural practices, values, and identification to adopt those of the dominant U.S. culture (e.g., Cabassa, 2003; Schwartz, Unger, Zamboanga, & Szapocznik, 2010). Findings based on unidimensional acculturation theory can conflate the association between acculturation and well-being, because these models do not account for the influence of *enculturation*. *Enculturation* has been conceptualized as Latino/as' selective adherence to Latino/a cultural practices, values, and identifications. Multidimensional acculturation theory acknowledges that Latino/as can simultaneously engage in aspects of both, the dominant U.S. and their Latino/a culture. Therefore, research is needed that examines the simultaneous influence of *acculturation* and *enculturation* on Latino/a MDD and smoking.

Investigators have also criticized the use of markers of *acculturation* and *enculturation* (i.e., nativity, language proficiency, and time spent in the U.S.) to capture

complex and multi-faceted *lived experiences* (Schwartz et al., 2010). Similarly, scholars have posited that the use of social categories such as sex/gender to capture complex and multifaceted *lived experiences* provides an incomplete understanding of why some groups (e.g., acculturating Latina women) experience worse or better well-being than others (e.g., acculturating Latino men) (Cole, 2009). In other words, research is needed that examines the *lived experiences* that come with acculturation, enculturation, and female or male gender. This information may help explain why acculturation is linked with increased MDD and smoking, and why women are more negatively influenced by acculturation than men.

Although researchers have begun to identify the experiences that come with Latino/a acculturation (e.g., family conflict and everyday discrimination) and enculturation (e.g., shared family values and family cohesion), prior studies have been limited as they examined the influence of only one or possibly two acculturation- or enculturation-related experiences. Moreover, only a small number of studies have explored how acculturation-related experiences vary by gender. While knowledge from prior research has made enormous contributions to Latino/a mental health and substance use research, it is also fragmented. In real life, instances of acculturation- and enculturation-related experiences (i.e., family conflict, discrimination, family cohesion, and family values) co-occur, influence each other, and unfold as part of one process. Therefore, an important next step in research on Latino/a acculturation, depression, and smoking is to integrate extant theory and empirical research into holistic frameworks. This knowledge is vital as it can inform the development of targeted intervention,

prevention, and policy-making strategies tailored to the needs of Latino/a men and women.

The Current Dissertation Project

To address the gaps in the literature, this dissertation project examines the lived experiences that come with acculturation and enculturation for both Latino men and Latina women. It further investigates how these experiences are linked with MDD and cigarette smoking. Specifically, this dissertation has three aims: 1) to understand the pathways (i.e., lived experiences) that link acculturation with MDD and smoking, 2) to develop and test integrative models by which social categories and lived experiences intersect and influence each other to create risk for MDD and smoking, 3) to investigate how and why these processes (i.e., lived experiences) differ by gender. To pursue these aims, this dissertation project used data from the National Latino Asian American Study (described in more detail below) and it is organized into two empirical studies. Study 1 and Study 2 each represents a stand-alone article, complete with its own Introduction, Method, Results, and Discussion section.

Study 1. The first study uses k-means cluster analysis to investigate how acculturation- and enculturation-related experiences (i.e., discrimination, family conflict, family cohesion, and familismo) cluster together in the everyday lives of Latinas and Latinos from diverse backgrounds. It also relies on weighted chi-square and Wald F tests to compare identified profile groups (i.e., clusters) on demographic and socio-cultural variables including gender, Latino/a subgroup ethnicity, language proficiency, nativity, and years spent in the U.S. among others. Lastly, this study assesses whether and how clusters of experience relate with MDD and smoking, using weighted multivariate

logistic regression. All analyses consider the role of gender and Latino/a ethnic subgroup, because prior research indicates that acculturation- and enculturation-related experiences differ for Latino/a men, women, and individuals from different Latino/a ethnic subgroups. The identification of clusters based on acculturation- and enculturation-related experiences captures the diverse experiences of Latinos and Latinas in the U.S. Examination of how these profile groups link with depression and smoking illustrates the diverse pathways to Latino/a MDD and smoking.

Study 2. The purpose of the second study is to develop a unified and process-oriented model of Latino/a acculturation, MDD, and smoking using weighted structural equation modeling with latent variables. First, drawing from extant theory and empirical research on Latino/a acculturation and well-being, Study 2 develops a model on the full sample of 2554 Spanish- and English-speaking Latino/as. This model is depicted in Figure 1.1. Next, Study 2 evaluates the results of the structural model depicted in Figure 1.1, and makes theoretically justifiable modifications to the model. In addition, with the use of multi-group structural equation modeling, this study also addresses questions of gender differences in the structural form of the modified model. The development of a holistic and process-oriented model provides important insights into the process by which acculturation links with increased MDD, thereby pointing out suitable areas for prevention, intervention, and policy-making strategies aimed at reducing Latino/a depression and smoking for men and women.

Data for Studies 1 and 2: The NLAAS

Data for this dissertation project came from the National Latino and Asian American Study for Mental Health (NLAAS), a nationally representative household

survey of non-institutionalized Latino/a and Asian persons, 18 years of age or older, residing at the coterminous United States, Alaska, and Hawaii (Heringa et al., 2004). The NLAAS excluded individuals who were institutionalized or living on military bases. The NLAAS was conducted between 2002 and 2003 by the University of Michigan's Institute for Social Research (ISR). It is part of the Collaborative Psychiatric Epidemiology Studies (CPES) which is comprised of three national surveys of Americans' mental health: The National Comorbidity Survey Replication (NCS-R), the National Study of American Life (NSAL), and the National Latino and Asian American Study of Mental Health (NLAAS). The CPES surveys were funded by the National Institute of Mental Health (NIMH), and all data collection was based on a multi-stage area probability sample. Area probability samples were selected using the sampling frames and sample selections procedures common to the University of Michigan Survey Research Center's (SRC) National Sample Design (Heeringa et al., 2004). A detailed description of the multi-stage area probability sampling method for the three studies is described elsewhere (Heeringa et al., 2004). Although the three studies have common features, each individual study was modified so as to best encompass the unique features of each study sample. The remainder of this article will focus on the NLAAS.

The NLAAS included a four-stage national area probability sample with special supplements for adults of Puerto Rican, Cuban, Chinese, Filipino, and Vietnamese national origin. The study team screened a total of 27,026 sample housing units for eligible adults and a total of 4,649 interviews were completed with eligible adults. The final NLAAS sample included 2,554 Latino/as (Puerto Ricans, Mexican Americans, Cubans, and other Hispanics) and 2,095 Asian Americans (Chinese, Vietnamese,

Filipinos, and other Asians). NLAAS interviews were conducted in English, Spanish, Chinese (Mandarin), Tagalog, or Vietnamese, according to respondent's preference. Weighted response rates were 75.5% for the Latino/a sample and 65.6% for the Asian sample (Heeringa et al., 2004). The analysis of this dissertation project was limited to the Latino/a sample which included 1,127 Latinas, 1,427 Latinos of which 868 were Mexicans, 577 Cubans, 495 Puerto Ricans, and 614 Other Hispanics.

Conclusion

The fourth and final chapter of this dissertation briefly summarizes the results of the two dissertation studies (study 1 and 2) and their implications for Latino/a well-being before discussing the limitations and strengths of the two studies. It also briefly discusses the need for future research to continue to further our understanding of Latino/a acculturation and well-being.

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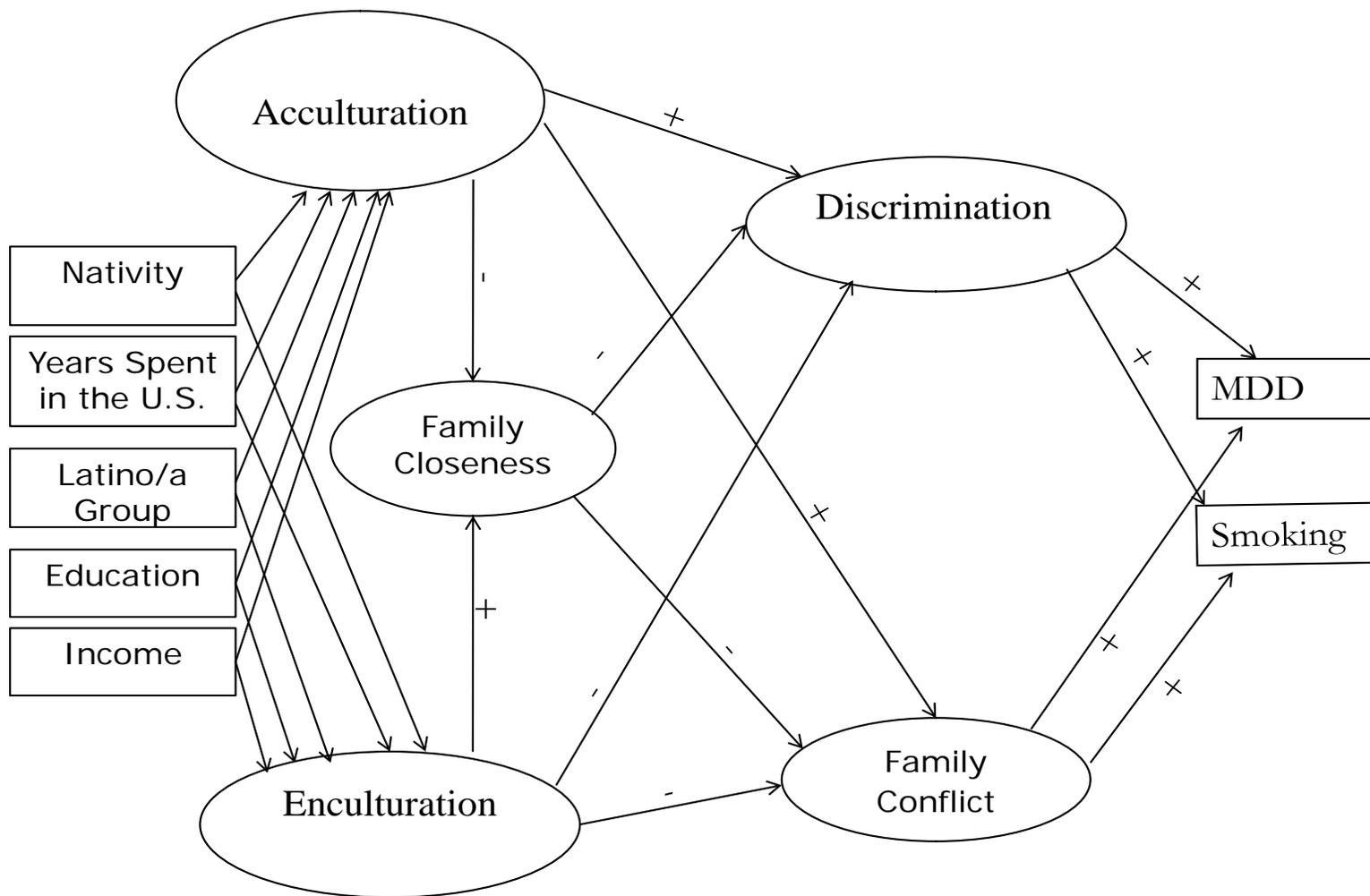


Figure 1.1. Initial structural model, showing all expected relationships and their predicted valence.

CHAPTER 2

Study 1

Acculturation refers to the cultural, social, and psychological changes that occur in immigrant groups and individuals (Schwartz, Unger, Zamboanga, & Szapocznik, 2010). The majority of U.S. Latino/as are immigrants or children of immigrants, making acculturation highly relevant to mental health and illness. Indeed, markers of Latino/a acculturation (i.e., English proficiency, U.S. born nativity, years spent in the U.S) link with higher risk for Major Depressive Disorder (MDD) and cigarette smoking. It is vital that we better understand why.

Approximately 15% of U.S. Latino/as have a lifetime history of MDD (Alegria et al., 2008), and 16% report being smokers (CDC, 2008). While Latina women report more depression than Latino men (Alegria et al., 2008), Latino men are more likely to smoke (CDC, 2008). Moreover, Puerto Rican Americans have higher MDD and smoking prevalence compared to Mexican and Cuban Americans (Alegria et al., 2008; Perez-Stable et al., 2001). Thus, Latino/a MDD and smoking prevalence varies by gender and ethnicity, for reasons that remain unclear. To shed light on these issues, the current project investigates how gender, ethnicity, and lived experiences that accompany acculturation jointly influence Latino/a MDD and smoking.

We focus on MDD and smoking for several reasons. MDD is one of the most burdensome diseases in the world (e.g., Andrade et al., 2003), and cigarette smoking is the leading cause of preventable death in the U.S. (CDC, 2008). Moreover, depression and cigarette smoking tend to co-occur (e.g., Pratt & Brody, 2010). While some studies maintain that smokers use cigarettes as a way to self-medicate their depressive symptoms (e.g., Breslau, Peterson, Schultz, Chilcoat, & Andreski, 1998), others suggest the reverse relationship, that nicotine leads to depression in smokers by causing changes in their brain chemistry (e.g., Quattrocki et al., 2000). A different line of research repudiates a causal relationship between depression and smoking, proposing that depression and smoking are merely influenced by the same causal factors (Kendler et al., 1993). Regardless of the reason for their association, it seems logical that research on Latino/a MDD also addresses smoking and vice versa.

Latino/a Acculturation and Enculturation

Acculturation refers to the acquisition of cultural elements of the dominant U.S. society. As part of this process, Latino/as can experience changes in their attitudes, behaviors, interpersonal relationships, language, values, and ethnic identification. Specifically, Latino/a immigrants in the U.S. adopt more individualistic values, a greater focus on interpersonal distance and independence, and an “American” identity. They also increasingly learn and speak the English language and participate in American cultural practices – such as consuming mainstream media (e.g., reading books and watching TV in the English language), having non-Latino/a white friendships, and eating American foods (Cabassa, 2003; Schwartz et al., 2010).

Historically speaking, traditional models frame acculturation as a unidimensional process, in which immigrants abandon the practices, values, and identifications of their culture of origin to adopt those of the host culture (e.g., Cabassa, 2003). For instance, unidimensional models assume that, as they acculturate, Latino/as lose proficiency in the Spanish language; stop consuming foods and media specific to their country of origin; reject collectivistic and Latino/a cultural values; and give up their Latino/a national or ethnic identity (Schwartz et al., 2010). Acculturation frameworks have become progressively more sophisticated over time, however.

Contemporary models of acculturation are now multidimensional, acknowledging that U.S. Latino/as can simultaneously *acculturate* and *enculturate*. *Enculturation* refers to selective adherence to and acquisition of the practices, values, and identifications of Latino/a culture. With enculturation Latino/as learn or continue to use Spanish, consume foods and media from their country of origin, endorse collectivistic and Latino/a values, and continue to adhere to their Latino/a national or ethnic identity (Schwartz et al., 2010). Current thinking is that Latino/as can maintain or learn aspects of Latino/a culture (enculturation) at the same time that they acquire elements of dominant U.S. culture (acculturation).

Culture has historically been defined as the values, norms, beliefs, and practices that pertain to a society (e.g., Betancourt & López, 1993). Problematically, this traditional definition depicts culture as a static phenomenon residing within individuals, and portrays people as passive recipients of culture who have no agency; it overlooks the influences of the social world, daily interactions, and lived experiences in people's daily lives (e.g., Lakes, López, & Garro, 2006). In contrast, contemporary research suggests that people

can adhere to, modify, add to, or reject cultural elements through social processes and lived experience (López & Guarnaccia, 2000). Latino/as may choose to follow some aspects of Latino/a or mainstream U.S. culture but not others, creating diversity within Latino/a communities. In sum, research on Latino/a culture and acculturation has become increasingly nuanced over time, promising to shed new light on Latino/a depression and smoking.

Latino/a Depression and Smoking

Scholars propose that *enculturation* can protect Latino/as from – and *acculturation* can increase risk for – MDD and substance use (e.g., Grant et al., 2004). Indeed, empirical research has connected Latino/a acculturation (measured with markers of acculturation such as English proficiency, nativity, or years spent in the U.S.) to MDD and smoking. These relationships, however, are stronger for women than men (e.g., Bethel & Schenker, 2005; Vega & Sribney, 2008), and they vary by Latino/a subgroup (e.g., Alegria et al., 2006, 2008). Questions remain about why some groups are more affected by acculturation than others.

Some researchers suggest that it is not acculturation or enculturation per se that lead to higher or lower risk for Latino/a MDD or cigarette smoking, but the *lived experiences* that accompany life in the U.S. (Schwartz et al., 2010). In other words, lived experiences may be potential pathways through which markers of acculturation and enculturation link with risk for MDD and smoking. Similarly, scholars argue that it is not gender or Latino/a subgroup per se that affects risk for mental health and substance use problems, but the *lived experiences* associated with being female, male, Mexican, Puerto Rican, or Cuban (Cole, 2009). Lived experiences such as everyday discrimination, family

conflict, family cohesion, and familismo can differ for men, women, Mexicans, Puerto Ricans, and Cubans (e.g., Perez, Fortuna, & Alegria, 2008; Rivera et al., 2008; Sarmiento & Cardemil, 2009). The present study investigated how these experiences clustered together in the lives of Latinos and Latinas, and differed by gender, Latino/a subgroup, and other demographic characteristics. Further, we assessed how specific cluster “profiles” related to MDD and cigarette smoking.

Latino/a Lived Experiences

Everyday Discrimination. One lived experience salient to Latino/as is *everyday discrimination*, defined as perceived daily experiences of unfair, differential treatment (Alegria et al., 2004). Studies suggest that Latino/a acculturation comes with more frequent encounters of everyday discrimination (Cook et al., 2009; Kam et al., 2010), and experiences of everyday discrimination vary by gender and Latino/a subgroup. Perez and colleagues (2008) found higher prevalence of discriminatory encounters in Latino men than women, and Cubans had lower prevalence than Mexicans and Puerto Ricans. Moreover, discrimination relates to Latino/a MDD and cigarette smoking (e.g., Wiehe et al., 2010), possibly mediating the effects of acculturation (Cook et al., 2009; Kam et al., 2010). One theory is that, over time, discrimination influences Latino/as’ mental health and substance use through stress proliferation (e.g., Alegria et al., 2004). That is, everyday experiences of discrimination can become chronic, daily stressors, which can generate additional stressful experiences. One result can be an escalation of depression and smoking (Ong et al., 2009).

Family conflict. In addition to discrimination, Latino/as can experience more frequent *family conflict* when acculturating to the U.S. (e.g., Cook et al., 2009). Family

conflict among acculturating U.S. Latino/as has been conceptualized as a form of acculturative stress, or stress that directly results from the acculturative process (e.g., De La Rosa, 2002; Hovey & Managa, 2000; Smart & Smart, 1995). Research supports significant positive associations between acculturative stress, depression, and substance use (Hovey & Magana, 2000). Thus, family conflict may explain the associations of acculturation with higher occurrences of depression and smoking.

Scholars attribute more frequent occurrences of family conflict in part to changes in gender role endorsement, especially for Latina women, who embrace the freedom that comes with less traditional roles and therefore acculturate faster than Latino men (Gil & Vazquez, 1996). Research has further shown that Latina women are more negatively affected by family conflict than their male counterparts (e.g., Sarmiento & Cardemil, 2009). Moreover, experiences of family conflict vary by Latino/a subgroup, in that Puerto Ricans report the most and Cubans the least conflict (Rivera et al., 2008). There is also growing evidence of positive associations between family conflict and mental health problems among Latino/a adults (Cook et al., 2009; Sarmiento & Cardemil, 2009). Family conflict could help explain why the associations of Latino/a acculturation with depression and smoking are stronger for women compared to men.

Family cohesion and familismo. Researchers have also documented the protective roles of Latino/a *family cohesion* and *familismo* (e.g., Rivera, 2007). Family cohesion entails perceptions of family closeness and communication (e.g., Olson, Russell, & Sprenkle, 1986). The cultural value of familismo emphasizes trust and family loyalty, and a general orientation to the family. It is characterized by positive family relationships, high family unity, social support, and interdependence. The strong emotional bonds

measured by family cohesion and familismo are thought to promote social support from families (e.g., Rivera et al., 2008).

Consistent with the idea that social support can reduce or buffer the negative impact of stressful life events on mental health problems (e.g., Aneshensel & Frerichs, 1982), family cohesion can protect Latino/as from external stress (e.g., Rivera et al., 2008). Conversely and consistent with the notion that the pure absence of social support qualifies as a stressor, research shows that low family cohesion and familismo relate to increased smoking and depressive symptoms in Latino/as (Rivera, 2007; Rivera et al., 2008; Coonrod, Balcazar, Brady, Garcia, & Van Tine, 1999). Also, as acculturation increases, family cohesion and familismo decrease among Latino/as (e.g., Miranda, Estrada, & Firpo-Jimenez, 2000; Baer & Schmitz, 2006). Moreover, Latino/a family cohesion varies by ethnic subgroup, with Cubans reporting the highest levels and Puerto Ricans reporting the lowest (Rivera, et al., 2008). Less is known about gender differences in experiences of family cohesion and familismo.

Towards a Holistic Understanding of Lived Experiences

In all, researchers have demonstrated the significant roles played by discrimination, family conflict, family cohesion, and familismo in the mental health and substance use of Latino/as from diverse backgrounds. Although this understanding is important, it is also fragmented, with each study examining the influence of only one or possibly two lived experiences. In real life, instances of discrimination, family conflict, and family cohesion co-occur, jointly influencing Latino/a well-being. An important next step is for research to take a holistic view of these lived experiences, and investigate how different combinations or “profiles” of experience influence MDD and cigarette smoking.

In other words, past studies have relied on variable-centered research methods by treating each kind of lived experience as an isolated entity, thereby reducing complex and dynamic phenomena into smaller elements (Magnusson, 1998). In person-centered approaches, in contrast, the unit of analysis is the individual's lived experiences as an organized whole (Magnusson, 1998). As such, person-centered methods can provide a more holistic and multifaceted view of how experiences come together to create diverse pathways to MDD and cigarette smoking in U.S. Latino/as. This understanding is important because U.S. Latino/as are not only the largest and fastest-growing immigrant group in the U.S. (U.S. Census Bureau, 2010), they are also a diverse group of people with different life experiences, socio-political histories, and socio-cultural backgrounds (Aguilar-Gaxiola et al., 2008). Further, research on pathways to Latino/a MDD and smoking can inform the development of targeted prevention, intervention, and policy-making strategies.

In this study, we investigated how specific lived experiences (i.e., everyday discrimination, family cultural conflict, family cohesion, and familismo) clustered together in the everyday lives of Latinas and Latinos. We also compared cluster "profile" groups on demographic and socio-cultural variables including gender, ethnicity, language, and years spent in the U.S., among others. Moreover, we assessed how lived experience profiles related to MDD and cigarette smoking. All analyses considered the role of gender and ethnicity, because studies suggest that lived experiences can differ for men, women, and individuals from different Latino/a subgroups. Based on prior (variable-centered) research, we hypothesized that *profiles distinguished by frequent family conflict would contain disproportionately more women than men*. Moreover, we

predicted that *more men than women would belong to profile groups describing frequent discrimination*. Further, we expected *disproportionately more Cubans to be in profile groups reporting low discrimination, low family conflict, and high family cohesion*.

In addition, we hypothesized that profile group and Latino/a subgroup would relate significantly to MDD and smoking, with gender moderating these associations. Generally, we expected *groups characterized by high discrimination and family conflict as well as low family cohesion and familismo to be most at risk*. These analyses controlled for the influence of education and income, to rule these out as alternative explanations for elevated risk.

Methods

Sample and Procedure

Data came from the National Latino and Asian American Study (NLAAS), a nationally representative household survey of non-institutionalized Latino/a and Asian adults, residing in the conterminous U.S. Respondents completed NLAAS interviews in the language of their preference. The final sample included 2,554 Latino/as (weighted response rate of 75.5%), in addition to 2,095 Asian Americans. For further sampling details, see Heeringa et al. (2004).

We limited our analysis to the Latino/a subsample: 868 Mexicans, 577 Cubans, 495 Puerto Ricans, and 614 “Other Hispanics.” Approximately 57% of these Latino/as were born outside the U.S., 48% were female, and the mean age was 38 years. Thirty-nine percent of the subsample had completed 11 years of education or less, and 12% had completed at least 16 years of education. Over 60% were employed, and 64% were married.

Measures

Lifetime and Past-Year MDD. Lifetime and past-year history of Major Depressive Disorder (MDD) were assessed with the diagnostic interview of the World Mental Health Survey Initiative version of the World Health Organization Composite International Diagnostic Interview (WMH-CIDI; Kessler & Ustun, 2004), a structured diagnostic instrument based on DSM-IV criteria. Based on this interview, participants received scores of either 1 (meets criteria) or 0 (does not meet criteria) on *Lifetime MDD*, and either 1 or 0 on *Past-Year MDD*.

Lifetime and Current Smoker Status. Smoker status was established by asking individuals whether they were current smokers, ex-smokers, or never smokers. We dichotomized response options in two ways, to indicate *Lifetime Smoking* (0 = Never Smoker, 1 = Lifetime Smoker) as well as *Current Smoking* (0 = Not a Current Smoker, 1 = Current Smoker).

Everyday Discrimination. *Everyday discrimination* was measured with nine items adopted from the Detroit Area Study (Alegría et al., 2004). Sample items included: 1) You are treated with less respect than other people, 2) People act as if they think you are not smart, and 3) You receive poorer service than other people at restaurants or stores. Respondents indicated the frequency of each experience on a 6-point scale, ranging from 1 = *never* to 6 = *almost every day*. Higher scores represented higher discrimination (Cronbach's $\alpha = .91$).

Family Conflict. *Family conflict* was measured with a 5-item scale taken from the family/culture stress subscale of the Hispanic Stress Inventory (Alegría et al., 2004). Sample items include: 1) Because of the lack of family unity, you have felt lonely and

isolated, 2) Your personal goals have been in conflict with your family, and 3) Because you have different customs, you have had arguments with other members of your family. Respondents reported the frequency of each experience on a 3-point scale (1 = *hardly ever or never*, 2 = *sometimes*, and 3 = *often*). Higher scores represented higher levels of family conflict (Cronbach's $\alpha = .79$).

Familismo. Seven items taken from the Family Environment Scale (Olson, 1986) gauged *familismo*. Sample items include 1) Family members respect one another, 2) We share similar values as a family, and 3) We can express our feelings with our family. Respondents indicated how strongly they agreed or disagreed with each statement on a scale from 1 (*strongly disagree*) to 4 (*strongly agree*); higher scores indicated higher levels of familismo (Cronbach's $\alpha = .91$).

Family Cohesion. Three items assessed *family cohesion*: 1) Family members like to spend free time with each other, 2) Family members feel very close to each other, 3) Family togetherness is very important (Olson, 1986). Respondents indicated their agreement with each statement on a 4-point scale, ranging from 1 = *strongly disagree* to 4 = *strongly agree*, with higher scores indicating higher levels of family cohesion (Cronbach's $\alpha = .83$).

Gender. Gender was self-reported and dummy coded as 1 = *female* and 0 = *male*.

Ethnicity. Respondents self-identified their *ethnic background* as one of the following: *Cuban, Puerto Rican, Mexican* or *Other Hispanic*.

Nativity. In a single item, respondents indicated their *nativity* as either *born in the U.S.* (which we coded as 0) or *born in another country* (coded as 1).

Spanish and English Proficiency. Spanish proficiency was measured with three items from the Cultural Identity Scales for Latino/a Adolescents (Felix-Ortiz, Newcomb, & Meyers, 1994). Respondents indicated how well they speak, read, and write in the Spanish language (from 1 = *poor* to 4 = *excellent*). Scores were summed, and higher scores represented better Spanish proficiency (Cronbach's $\alpha = .90$). A parallel measure was created specifically for the NLAAS to assess *English proficiency* (Cronbach's $\alpha = .97$).

Years Spent in the U.S. We coded respondents' *years spent in the U.S.* on a 5-point scale: 1 = *less than five years*, 2 = *five to ten years*, 3 = *11-20 years*, 4 = *20 years or more*, and 5 = *U.S. born*. Thus, higher scores represented more years spent in the U.S.

Age of Immigration. Foreign-born participants reported their *age of U.S. immigration*, which we coded on a 5-point scale: 1 = *35 years or older*, 2 = *18-34 years*, 3 = *13-17 years*, 4 = *less than 12 years*, and 5 = *U.S. born*. Higher scores represented younger age at immigration.

Other Demographics. Respondent's *marital status* was coded as *married/cohabiting* = 1, *divorced/separated/widowed* = 2, and *never married* = 3. *Employment* was coded as 1 = *employed*, 2 = *unemployed*, and 3 = *not in the labor force*. *Education* was measured with the following ordered categories, coded such that higher scores indicate more education: *0-11 years of education*, *12 years*, *13-15 years*, and *16 or more years*. Respondents indicated their *age* in years. *Income* was measured as "household income," and ranged from \$0 to \$200,000.

Results

Descriptive Findings

Table 1.2 shows weighted summary statistics for dependent and independent variables for the full sample ($N = 2554$), by gender (male, female), and by Latina/o subgroup (Mexican, Cuban, Puerto Rican, and Other Latino/a). As shown, approximately 15% of the full sample endorsed a history of lifetime MDD, and almost 9% met criteria for past-year MDD. The mean age of MDD onset was 25.35. Women were almost twice as likely to meet criteria for lifetime MDD (19.8%) compared to men (10.9%), and Puerto Ricans had higher lifetime prevalence of MDD (21.6%) compared to Cubans (17.4%), Mexicans (14.5 %), and the “Other Hispanic” group (14.1%). We observed a similar pattern for past-year MDD prevalence (women higher than men, and Puerto Ricans higher than other Latino/as).

Nearly 40% of the full sample endorsed lifetime smoking, with a mean age of smoking onset being 15.21 years. The lifetime smoking prevalence for men (51.3%) was almost twice the prevalence for women (27.2%), and Puerto Ricans (53.6%) had the highest lifetime smoking prevalence followed by Cubans (41.0%), Mexicans (38.5%), and the other Hispanic group (36.8%). Moreover, 20.0 % of Latino/as were current smokers, with more current smoking among men compared to women, and Puerto Ricans compared to other ethnic groups.

Profiles of Lived Experiences: Cluster Analysis

Next, we used cluster analysis to classify individuals into profile groups based on their lived experiences (i.e., everyday discrimination, family conflict, familismo, and family cohesion). For the entire sample, we began by standardizing our four lived

experience variables, and then submitting these standardized data to *k*-means analysis (Hartigan, 1975). This technique partitions cases into $n = k$ clusters by maximizing between-cluster differences and minimizing within-cluster variance. According to Hartigan (1975), the number of clusters (i.e., *k*) should not be decided in advance, and the *k*-means algorithm should be run with several different values of *k*, chosen at random. We requested two- through seven-cluster solutions, retaining the six-cluster solution for further analysis. The six-cluster solution captured the widest variety of profiles while maintaining sufficiently large cell sizes for meaningful analyses.

Figure 1.2 shows the means on the z-scored lived experiences and (in the legend) the sample size for each of the six profile groups. According to this figure, members of Group 1 ($n = 1224$) reported the least discrimination and family conflict, and the highest levels of familismo and family cohesion. In other words, Group 1 was distinguished by having the lowest stress and most positive family lives. Group 2 ($n = 333$) individuals described low discrimination, low family conflict, low familismo, and low family cohesion. That is, Group 2 members reportedly lacked both stress and positive family factors (i.e., low stress, low positive factors). Individuals in Group 3 ($n = 646$) detailed high levels of discrimination, low family conflict, and high familismo and family cohesion. Thus, Group 3 members were characterized by high discrimination in the presence of some positive family factors (i.e., high discrimination, low conflict, some positive factors). Group 4 ($n = 114$) individuals were characterized by high discrimination, high family conflict, very low familismo, and very low family cohesion (i.e., high discrimination, high family conflict, lowest positive factors). Group 5 ($n = 109$), the smallest group, contained individuals with very high levels of discrimination,

but average levels of family conflict, familismo, and family cohesion (i.e., very high discrimination, average conflict, average positive factors). Group 6 ($n = 124$) was characterized by the highest levels of family conflict, average familismo and family cohesion, and some discrimination.

For the remainder of the analyses, we used Group 1 as the reference category, because Group 1 scored the lowest on discrimination and family conflict while scoring the highest on protective factors. As such, Group 1 seemed likely to have the lowest risk for MDD or smoking.

Demographics of Profile Groups: Weighted Chi-Square and Wald-F Tests

To determine whether profile groups differed as a function of demographic and socio-cultural characteristics, we conducted weighted chi-square and Wald-F tests (testing associations with categorical and continuous variables, respectively). With weighted chi-square tests, we found significant differences between profile group membership and gender, $\chi^2 (df = 3.81, n = 2,550) = 51.74, p < .001$; Latina/o group, $\chi^2 (df = 7.42, n = 2,550) = 49.17, p < .05$; nativity, $\chi^2 (df = 3.89, n = 2,549) = 126.15, p < .001$; and marital status, $\chi^2 (df = 4.90, n = 2,550) = 93.29, p < .005$. With weighted Wald-F tests, we found significant differences between profile groups on English proficiency, $F(5,49) = 15.78, p < .001$; Spanish proficiency, $F(5,44) = 19.90, p < .001$; years spent in the U.S., $F(5,49) = 4.22, p < .05$; education, $F(5,49) = 10.36, p < .001$; age, $F(5,49) = 18.93, p < .001$; and income, $F(5,49) = 7.43, p < .001$.

Table 2.2 presents weighted demographic statistics for each of the six profile groups and the full sample. A review of profiles allowed us to consider gender differences within and between profile groups, assessing differences in lived experiences for men and women. Large gender differences emerged in Groups 3, 4, 5, and 6. Groups

4 and 6 (which reported the lowest familismo and family cohesion of any groups) were made up of nearly 60% women. Group 3 (high discrimination, low family conflict, some familismo, some family cohesion) contained about 60% men, and Group 5 (very high discrimination, average conflict, average positive factors) consisted of almost 70% men.

The ethnic make-up of each profile group largely reflected that of the full sample. However, Puerto Ricans were disproportionately more likely to appear in Group 4 (high discrimination, high family conflict, lowest positive factors) than in any of the other groups.

In regard to nativity, we found that Group 1 (the group with the least discrimination and most positive family lives) contained proportionately more foreign-born Latina/os (68%) than any other group. Group 4 (which reported high discrimination and the least positive family lives) contained disproportionately more U.S. born Latino/as (67%) than any other group. Similarly, a disproportionately high percentage of U.S. born Latina/os (64%) emerged in Group 5 (the group describing by far the most discrimination).

Regarding indicators of acculturation and enculturation, individuals in Groups 3, 4, and 5 (which had faced the most discrimination, but varied on other factors) reported higher English- language proficiency than individuals in the other groups. In contrast, Group 1 (least stress, most positive factors) and Group 6 (highest family conflict, some discrimination and positive factors) reported higher Spanish proficiency than the other groups. We also observed that individuals in Groups 3, 4, and 5 had spent the longest amount of time in the U.S., while those in Groups 1 and 6 had spent the least time in the U.S. Moreover, participants who had immigrated to the U.S. in childhood (i.e., age 12 or

earlier) were disproportionately *over*represented in Groups 3, 4, and 6, and *under*represented in Group 1. The opposite pattern emerged for individuals who had immigrated in early adulthood, between the ages of 18 to 34 (i.e., overrepresented in Group 1, and underrepresented in Groups 3, 4, 5, and 6).

Differences in marital status by profile group were particularly apparent for never-married individuals, who were disproportionately underrepresented in Group 1, and overrepresented in Groups 3, 4, and 6. Regarding differences in work status by profile group, it stood out that unemployed individuals were disproportionately overrepresented in Group 5. In terms of age and group membership, members of Group 1 were older than other individuals, with an average age of 42. Average income was highest in Group 3, and lowest in Group 6.

In sum, we identified six profile groups, each characterized by a unique combination of lived experiences (i.e., discrimination, family conflict, familismo, and family cohesion). We observed that profile groups differed as a function of demographic and socio-cultural experiences, including gender, Latino/a subgroup, nativity, language proficiency, years spent in the U.S., age at immigration, education, income, and marital status. Of note, Latina/os facing the most discrimination (Group 5) were disproportionately male, U.S. born, proficient in English, and unemployed. They were also among those who had spent the most years in the U.S. and immigrated at younger ages. Conversely, Latina/os experiencing the *least* discrimination and most positive family lives (Group 1) were disproportionately foreign-born, proficient in Spanish, married or partnered, and older; this group had spent the least amount of time in the U.S., and was most likely to have immigrated in young adulthood.

Predictors of MDD and Cigarette Smoking: Weighted Multivariate Logistic Regression Analyses

Lastly, we used weighted multivariate logistic regression to examine the associations of profile group and Latina/o ethnicity with our outcome variables (MDD and smoking), controlling for income and education. We stratified these regressions by gender, to determine whether gender moderated any relationships. Unfortunately, limitations in sample size did not allow us to include interaction terms in our weighted logistic regressions. Table 3.2 shows the results of regression analyses for women, and Table 4.2 shows results for men.

Lifetime and Past-Year MDD. As shown in Table 3.2 (columns 1 and 2), only profile group was significantly associated with lifetime and past-year MDD among women. Specifically, women in groups characterized by high discrimination and/or family conflict (i.e., Groups 3, 4, 5, and 6) were more likely to have had a lifetime history of MDD compared to women in Group 1 (the group with the least stress and highest positive factors). Women in every group were also more likely to meet past-year MDD criteria compared to women in Group 1. These findings suggest that Latina women's risk for developing depression depends heavily on their experiences with everyday discrimination *and* with their families. In contrast, Latina women's MDD appears relatively unaffected by their income, education level, and ethnic subgroup.

For men (Table 4.2, column 1), profile group and Latino/a subgroup were both significantly associated with lifetime MDD. Similar to the results for women, men in groups experiencing moderate- to high-frequency discrimination (i.e., Groups 3, 4, 5, and 6) were at elevated risk for lifetime MDD compared to men in Group 1, who had encountered the least discrimination and most positive family lives. Moreover, Cuban

American and Puerto Rican men (unlike women) were more likely to have had a lifetime history of MDD compared to Mexican American men, although the effect for Puerto Ricans was only marginally significant ($p = .08$). Profile group was the only significant predictor of past-year MDD for men (Table 4.2, column 2). Men in Groups 3, 4, and 5 (the most discriminated-against groups) were more likely to meet past-year MDD criteria compared to men in Group 1. In sum, life experiences characterized by frequent discrimination were associated with increased risk for depression (both recent and lifetime) in men. Discrimination therefore appears to be especially detrimental to Latino/a men's mental health. Income and education levels, however, had no effect.

Lifetime and Current Smoker Status. Profile group and Latino/a subgroup were significantly associated with lifetime smoking in women (Table 3.2, column 3). Women in Groups 2 (i.e., low stress, low positive factors), 3 (i.e., high discrimination, average conflict, some positive factors), and 4 (i.e., high discrimination, high family conflict, lowest positive factors) were more likely to have smoked cigarettes at some point in their lives compared to women in Group 1 (i.e., lowest stress, highest high positive factors). Puerto Rican women also reported more lifetime smoking than Mexican American women. In regard to women's *current* smoking (Table 3.2 column 4), only Latino/a subgroup was significantly associated with current smoker status, with Puerto Rican women being more likely to smoke, compared to Mexican women. Income and education levels showed no relationship to women's smoking.

Profile group and Latino/a subgroup were also significantly associated with lifetime smoking in men (Table 4.2, column 3). Men in Group 4 (i.e., high discrimination, high family conflict, lowest positive factors) were more likely to be

lifetime smokers compared to men in Group 1, but the effect was only marginally significant ($p = 0.09$). Paralleling the results for women, Puerto Rican men were more likely to be lifetime smokers compared to Mexican men. In contrast with the women's results, however, men's education was associated (negatively) with lifetime smoking. For men, profile group, Latino/a subgroup, and education were also significantly associated with current smoker status (Table 4.2, column 4). Group 4 men were significantly more likely to smoke currently than Group 1 men. Moreover, Cuban and Puerto Rican men were more likely to smoke currently than Mexican men, and education again related negatively to current smoker status. In sum, Latino men's reported smoking increased with lower education, Puerto Rican ethnicity, and experiences of frequent discrimination and family conflict in the absence of shared family values, closeness, and cohesion.

Comparing findings across Tables 3.2 and 4.2, it is interesting that profile Group 4 (the group with the *lowest* familismo and family cohesion) was associated with lifetime smoking in women and current smoking in men; this elevated smoking risk did *not* emerge, however, for Group 6 (which differed from Group 4 only in having more positive family lives). Group 5 women and men (who also described more positive family lives than Group 4, but also *much more* discrimination) showed no increased smoking at all. Moreover, membership in Group 2 (which had experienced low stress, but also low familismo and family cohesion) predicted lifetime smoking in women, but not men. These patterns suggest that the absence of shared family values and family cohesion correlates with elevated smoking risk among Latino/as, especially women.

Discussion

Based on a large national sample of U.S. Latino/as, this study took a person-centered approach to understand how gender, culture, discrimination, and family converge in everyday Latino/a lives, creating unique pathways to MDD and cigarette smoking. Latino/as are exposed to a multitude of acculturated-related experiences simultaneously, which can either increase or decrease risk for depression and substance use. We build on previous work to document how those lived experiences combine and covary, yielding different life profiles. Some profiles related to depression and smoking while others did not, and many relationships differed by gender. We now discuss key findings.

Profiles of Lived Experience. K-means cluster analysis illustrated the diverse nature of lived experiences among Latino/as in the US. We found six distinct profiles of experiences, which ranged from low discrimination and highly positive family lives, to high discrimination and frequent family conflict, to low discrimination, low conflict, and low shared family values. These distinct profiles showed systematically that not all Latino/as experience stress, and not all Latino/as have access to the same protective cultural practices and values. Overall, k-means analysis proved a useful tool for demonstrating Latino/a diversity.

After identifying the different profiles, we reviewed their demographic composition. The profile groups differed by gender, language proficiency, nativity, years spent in the U.S., and age at immigration. Proportionately more women than men were found in groups characterized by problematic family lives (i.e., high family conflict, low family cohesion, low familismo), which supports the notion that family tension may be

more relevant for Latina/o women than men. Scholars have proposed that family conflict is a result of changes in traditional gender roles during the acculturation process (Gil & Vazquez, 1996). Moreover, researchers have hypothesized that immigrant women acculturate faster than immigrant men, creating a mismatch in gender-role expectations between men and women. This ultimately leads to family cultural conflict (Gil & Vasquez, 1996), and women may feel guilty for putting family harmony at risk.

We further found acculturated women, compared to less acculturated women, faced elevated levels of not only family conflict *but also discrimination*. Profile Groups 4 and 6 (i.e., the two groups with proportionately more women than men) were characterized by similar amounts of family conflict. However, individuals in Groups 4 and 6 differed in regard to acculturation and discrimination. Group 4 appeared to be more acculturated than Group 6; that is, Group 4 individuals were more English proficient, had spent more time in the U.S., and were more likely to be U.S. born. Moreover, compared to Group 6, Group 4 was characterized by high discrimination, in addition to high family conflict. These results indicate that it is not only family conflict that can accompany Latina women's acculturation, but also discrimination.

More generally, acculturated Latino/as (i.e., individuals in Groups 3, 4, and 5, who were more English proficient, had spent more time in the U.S., and were more likely to be U.S. born) experienced more discrimination than less-acculturated Latino/as (i.e., individuals in Groups 1, 2, and 6). This suggests that acculturation may expose Latino/as to discriminatory practices, and it supports findings from prior research. Researchers have proposed different rationales for the association between Latino/as acculturation and discrimination. One perspective suggests that Latino/as who were born in the U.S., have

spent more time in the U.S., and speak more English encounter more discrimination because they have more opportunities for exposure (Agnew, 2001). Others argue that acculturated Latino/as are more aware of ethnic disparities and hierarchies present in the U.S., and as a result they perceive greater discrimination (Guilamo-Ramos, Jaccard, Johansson, & Turrisi, 2004). Both perspectives could be valid.

Depression and smoking. In total, 15% of the sample reported a history of lifetime MDD, and almost 9% met criteria for past-year MDD. Approximately 40% were lifetime smokers, and around 20% were current smokers. As in prior studies, gender differences emerged, with more women experiencing depression and more men smoking. To better understand life circumstances surrounding Latino/a risk for depression and smoking, we examined how these outcomes varied by profile group and ethnic subgroup. Stratifying this analysis by gender, we found both differences and similarities between women and men.

Two profile groups (4 and 6) stood out as having the most difficult family experiences, (i.e., the most family conflict, least family cohesion, and lowest familismo), and these profiles were associated with elevated risk. Specifically, both women and men in Group 4 showed increased vulnerability to depression and smoking, and Group 6 was associated with depression in both genders (past-year and lifetime MDD in women, and lifetime MDD in men). In all, these findings suggest that improving Latino/a family functioning could help protect against depression and smoking, in both men and women. Scholars have theorized that family conflict adversely affects Latina females' mental health and substance use (e.g., Sarmiento & Cardemil, 2009), and the current study extends that conclusion to Latino men.

Reducing discrimination can also benefit Latino/a mental health. The three groups characterized by high discrimination (i.e., Groups 3, 4, and 5) were significantly more likely to have had a history of MDD (lifetime and past-year) compared to Group 1. Further, Groups 3 and 4 were associated with lifetime smoking in women, and Group 4 was associated with current smoking in men. This study assessed the “everyday” variety of discrimination (e.g., being treated with less respect than others, receiving poorer service). These experiences may appear trivial at first glance, especially when compared to more blatant forms of discrimination (e.g., in employment, college admissions). Our findings, however, suggest that even subtle discrimination can have adverse mental health consequences for Latino/as, both male and female.

Group 1 individuals described the least amount of stress and most positive family lives. Moreover, when comparing Latino/as in Group 1 to those in Group 6, we observed that Group 1 was more enculturated and less acculturated. That is, Group 1 individuals were more Spanish-proficient and less English-proficient, had spent less time in the U.S., and were more likely to be foreign born than U.S. born. Further, compared to Group 1, Group 6 had faced more family conflict, more discrimination, less familismo, and less family cohesion. The differences in lived experiences between Groups 1 and 6 may indicate that as Latino/as acculturate to the U.S., they lose protective factors such as shared family values and family closeness, while at the same time they experience more stress in the form of family conflict and everyday discrimination. Also, compared to Group 1, Group 6 was more likely to have a history of MDD. These findings suggest that acculturation increases Latino/as’ depression risk, perhaps due to increased discrimination and family conflict as well as loss of cultural values and family cohesion.

The combination of high discrimination, high family conflict, lack of familismo, and lack of family cohesion seems to be particularly detrimental for women (profile Group 6 was associated with lifetime and past-year MDD for women, but only with lifetime MDD in men). This points to the need for interventions to prevent depression in Latinas with this risk profile.

Profile Group 2 (low stress, low positive factors) was made up of individuals with similar proficiency in both English and Spanish, and there were no large nativity differences. It is possible that this group largely consisted of people who were bi-cultural. Scholars (e.g., Schwartz et al., 2010) argue that bi-cultural individuals are able to effectively navigate aspects of the U.S. and Latino/a culture, and as a result, they encounter less discrimination and family conflict than those who are mono-cultural. Research has also shown that bi-cultural individuals have better mental and physical health than individuals who more strongly identify with one culture (Schwartz et al., 2010). The results of our study support this notion, but *only among men*. In contrast, Group 2 women were more likely to smoke and have had a history of MDD than Group 1 women (who appeared less acculturated and thus more mono-cultural). These findings raise interesting questions about whether and why biculturalism benefits Latinos but not Latinas. They also illustrate the need to investigate Latino/a mental health through a lens of gender.

Interestingly, Latino/a subgroup was associated with smoking and MDD, and these associations varied by gender. Puerto Rican women and men were more likely to endorse a history of smoking compared to Mexican women and men. Moreover, Cuban and Puerto Rican men *but not* Cuban or Puerto Rican women were more likely to report a

history of lifetime depression and to be current smokers. Interestingly, education was inversely related to smoking in men but *not* women. Overall, these results stress the need to consider how vulnerability to mental health and substance use problems can vary for Latino/as who live at the intersection of different social categories, such as ethnicity, gender, class, etc. (Cole, 2009).

Limitations and Conclusion

As with any research, there are limitations to this study. The cross-sectional methodology prevents us from temporally or causally linking lived experiences to the development of major depression and cigarette smoking. However, for the majority of participants, immigration or acculturation likely preceded the onset of MDD and use of cigarettes. That is, 65% of our sample was either U.S. born ($n = 924$) or had immigrated to the U.S. before the age of 12 ($n = 365$), and depression and smoking typically came later (mean age of MDD onset = 25.35 years; mean age of smoking onset = 15.21 years). In addition, we used not only lifetime measures but also past-year MDD and current smoking, to get a better sense of depression and smoking in the *recent* past, subsequent to immigration and/or acculturation. Nevertheless, future studies should collect data at different time points, to better understand how acculturation, smoking, and depression unfold over time for women and men.

Although data came from a diverse and representative sample of 2,554 Latino/as, there were not enough cases to consider whether ethnic subgroup interacts with gender and profile group to affect outcomes. Similarly, we worked with smaller cell sizes after stratifying our analysis by gender. Most gender-by-profile groups contained well over 50 cases (see Table 2.2), but for Groups 4 (37 men) and 5 (44 women), results should be

interpreted with caution. Finally, readers should bear in mind the usual limitations that come with self-reported data.

Notwithstanding these limitations, this study advances our understanding of how gender, ethnicity, and acculturation intersect, jointly influencing Latino/a well-being. With profile analyses, we demonstrated the various ways in which lived experiences occur and co-occur, bringing out the diversity of a Latino/a population too often portrayed as one homogenous group. Moreover, we illustrated the associations of different life experience profiles with depression and smoking, which provides insight into possible mechanisms linking acculturation to MDD and smoking. We also uncovered both gender differences and similarities.

The results from the present study can inform the development of more targeted intervention, prevention, assessment, and policy-making strategies, tailored to Latino/a men and women from different ethnic backgrounds. Latino/as are at risk for depression and cigarette smoking, and they belong to the largest and fastest-growing immigrant group in the U.S. It is vital to understand *why* and *for whom* acculturation relates to increased depression and substance use, and it is equally important to understand why women are more affected than men. This study makes important strides in these directions.

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Table 1.2

Summary Statistics by Gender and Latino/a Group for Independent and Dependent Variables (weighted)

Variable	Range	Full Sample (N= 2554)		Female (n = 1427)		Male (n = 1127)		Mexican (n = 868)		Cuban (n =577)		Puerto Rican (n =495)		Other Hispanic (n =614)	
		N (%) or M (SD)	M (SD)	N (%) or M (SD)	M (SD)	N (%) or M (SD)	M (SD)	N (%) or M (SD)	M (SD)	N (%) or M (SD)	M (SD)	N (%) or M (SD)	M (SD)		
Everyday										13.91		18.04			
Discrimination	9 - 54	16.36 (7.73)		15.43 (7.06)		17.22 (8.21)		16.11 (7.71)		(5.68)		(7.75)		16.65 (7.87)	
Family Conflict	5 - 15	6.35 (1.19)		6.58 (2.06)		6.13 (1.71)		6.31 (1.85)		6.20 (1.89)		6.56 (2.04)		6.38 (1.96)	
Familismo	7 - 28	25.21 (3.66)		24.92 (3.95)		25.49 (3.33)		25.20 (3.45)		26.10		24.34			
Family Cohesion	3 - 12	10.88 (1.64)		10.82 (1.75)		10.93 (1.53)		10.89 (1.60)		(2.93)		(4.41)		25.39 (3.80)	
MDD Lifetime	–	455 (15.2)		311 (19.8)		144 (10.9)		138 (14.5)		11.15		10.56			
MDD 12-Month	–	249 (8.5)		171 (10.8)		78 (6.4)		82 (8.4)		106 (17.4)		112 (21.6)		99 (14.1)	
Lifetime Smoker	–	1025 (39.6)		434 (27.2)		591 (51.3)		311 (38.5)		52 (7.7)		59 (11.3)		56 (8.0)	
Current Smoker	–	510 (20.0)		213 (13.1)		297 (26.4)		147 (18.1)		244 (41.0)		262 (53.6)		208 (36.8)	
										118 (22.6)		140 (30.7)		105 (19.4)	

Table 2.2
Sample and Profile Group Demographic Characteristics (Weighted)

Demographics	Full Sample <i>N (%) or M (SD)</i>	Group 1 <i>N (%) or M (SD)</i>	Group 2 <i>N (%) or M (SD)</i>	Group 3 <i>N (%) or M (SD)</i>	Group 4 <i>N (%) or M (SD)</i>	Group 5 <i>N (%) or M (SD)</i>	Group 6 <i>N (%) or M (SD)</i>
Gender							
Female	1427 (48.5)	705 (51.5)	197 (53.9)	322 (40.7)	77 (59.9)	44 (31.7)	79 (58.4)
Male	1127 (51.5)	519 (48.5)	136 (46.1)	324 (59.3)	37 (40.1)	65 (68.3)	45 (41.6)
Ethnicity							
Mexican	868 (56.6)	375 (57.5)		234 (53.3)	33 (43.4)	51 (62.1)	44 (57.8)
Cuban	577 (4.6)	369 (6.0)	63 (4.0)	99 (3.6)	10 (1.6)	9 (1.9)	27 (5.8)
Puerto Rican	495 (10.0)	178 (7.4)	67 (9.3)	154 (12.7)	39 (20.7)	26 (10.8)	27 (10.7)
Other Latino/as	614 (28.7)	302 (29.2)	72 (24.6)	159 (30.4)	32 (34.2)	23 (25.2)	26 (25.6)
Nativity							
Foreign born	1629 (57.2)	931 (67.9)	202 (56.4)	331 (46.9)	47 (38.9)	35 (35.7)	79 (61.0)
U.S. born	924 (42.8)	293 (32.1)	131 (43.6)	314 (53.1)	67 (67.1)	74 (64.3)	45 (39.0)
English Proficiency	7.48 (3.57)	6.54 (3.43)	7.22 (3.52)	8.72 (3.46)	8.58 (3.25)	8.45 (3.31)	7.77 (3.53)
Spanish Proficiency	8.32 (2.67)	8.76 (2.59)	7.86 (2.50)	8.31 (2.73)	7.16 (2.99)	6.54 (2.25)	8.54 (2.44)
Years Spent in U.S.	3.78 (1.33)	3.59 (1.29)	3.75 (1.36)	4.00 (1.32)	4.27 (1.19)	4.12 (1.37)	3.60 (1.46)
Age at Immigration							
U.S. born	924 (42.9)	293 (32.2)	131 (43.6)	314 (53.2)	67 (62.1)	74 (64.3)	45 (40.)
12 years or less	365 (12.5)	150 (10.3)	48 (13.1)	108 (14.4)	20 (13.8)	13 (11.5)	25 (19.6)
13-17 years	216 (10.6)	109 (12.2)	32 (10.0)	47 (7.9)	8 (10.5)	7 (9.8)	13 (14.2)
18-34 years	735 (28.1)	448 (36.4)	92 (27.2)	139 (22.0)	13 (12.1)	11 (10.4)	29 (22.7)
35 years or more	306 (5.9)	221 (8.9)	30 (6.1)	36 (2.4)	5 (1.4)	4 (4.0)	10 (3.6)
Marital Status							
Married/Cohabiting	1599 (64.2)	824 (71.4)	199 (65.5)	403 (59.0)	48 (44.1)	61 (59.1)	60 (47.1)
Divorced/Separated	479 (14.4)	246 (14.5)	62 (13.0)	99 (13.7)	25 (17.9)	19 (15.5)	28 (17.9)
Never Married	476 (21.4)	154 (14.1)	72 (21.6)	144 (27.3)	41 (37.9)	29 (25.4)	36 (35.0)
Work Status							
Employed	1566 (63.1)	728 (61.2)	209 (63.4)	441 (68.3)	58 (57.7)	62 (62.5)	67 (57.8)
Unemployed	182 (7.5)	73 (6.0)	23 (7.3)	49 (8.2)	12 (10.7)	16 (13.8)	9 (7.1)
Not in Labor Force	806 (29.4)	423 (32.9)	101 (29.2)	156 (23.5)	44 (31.6)	31 (23.7)	48 (35.1)
Education	1.98 (1.02)	1.83 (1.00)	1.85 (0.97)	2.27 (0.104)	1.98 (1.08)	1.84 (0.91)	2.17 (1.10)
Age	38.02 (15.07)	42.25 (16.04)	36.53 (14.36)	33.77 (12.11)	34.45 (14.59)	32.80 (12.16)	36.29 (15.23)
Income	43,115.80 (42886.02)	40,504.31 (40766.56)	39,340.58 (41237.97)	52,092.58 (48319.80)	42,455.67 (43197.08)	39,469.58 (33624.92)	31,945.20 (34025.78)

Table 3.2

Multivariate logistic regression results predicting women's MDD and cigarette smoking by income, education, profile group, and Latino/a subgroup (n=1427)(weighted)

Predictor	MDD	MDD	Lifetime	Current
	Lifetime	Past 12 Months	Smoker	Smoker
	Beta (SE)	Beta (SE)	Beta (SE)	Beta (SE)
Income	0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)
Education	-0.06 (0.09)	-0.04 (0.11)	0.08 (0.09)	0.04 (0.11)
Profile Group		**	*	*
Grp1				
Grp2	0.32 (0.27)	0.61 (0.26) *	0.66 (0.20) *	0.29 (0.23)
Grp3	0.85 (0.22) **	0.91 (0.32) *	0.51 (0.14) *	0.40 (0.21)
Grp4	1.31 (0.27) **	1.43 (0.34) **	0.84 (0.30) **	0.50 (0.40)
Grp5	1.53 (0.38) **	1.49 (0.45) *	0.68 (0.40)	0.46 (0.37)
Grp6	0.82 (0.31) *	1.16 (0.40) *	0.43 (0.26)	0.15 (0.38)
Latino/a Group				**
Mexican				*
Cuban	0.19 (0.18)	0.11 (0.25)	0.28 (0.20)	0.48 (0.38)
Puerto Rican	0.29 (0.17)	1.18 (0.22)	0.99 (0.15) **	1.18 (0.31) **
Other	-0.06(0.15)	0.16 (0.18)	0.26 (0.18)	0.35 (0.29)

*Note. *p < .05. **p < .001. +p ≤ .09.*

Table 4.2

Multivariate logistic regression results predicting men's MDD and cigarette smoking by income, education, profile group, and Latino/a subgroup (n=1227)(weighted)

Predictor	MDD Lifetime	MDD Past 12 Months	Lifetime Smoker	Current Smoker
	Beta (SE)	Beta (SE)	Beta (SE)	Beta (SE)
Income	0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Education	-0.06 (0.09)	0.03 (0.17)	-0.22 (0.08) *	-0.31 (0.10) *
Profile Group	**	**	*	
Grp1				
Grp2	-0.36 (0.47)	-0.12 (0.59)	-0.36 (0.20)	-0.28 (0.38)
Grp3	0.62 (0.27) *	0.75 (0.31) *	-0.17 (0.14)	0.16 (0.25)
Grp4	0.95 (0.40) *	1.27 (0.52) *	0.83 (0.48) +	1.09 (0.45) *
Grp5	1.22 (0.35) *	1.44 (0.46) *	0.14 (0.29)	0.43 (0.28)
Grp6	0.95 (0.44) *	1.08 (0.55)	0.28 (0.43)	0.82 (0.47) +
Latino/a Group			*	*
Mexican	0.57 (0.25) *	0.11 (0.25)	0.18 (0.21)	0.53 (0.20) *
Cuban	0.48 (0.27) +	1.18 (0.22)	0.35 (0.14) *	0.46 (0.20) *
Puerto Rican				
Other	-0.01(0.23)	0.16 (0.18)	-0.24 (0.20)	0.80 (0.21)

Group 1 = Lowest stress, highest positive factors
 Group 2 = Low stress, low positive factors
 Group 3 = High discrimination, low conflict, some positive factors
 Group 4 = High discrimination, high family conflict, lowest positive factors
 Group 5 = Very high discrimination, average conflict, average positive factors
 Group 6 = Highest conflict, some discrimination, average positive factors

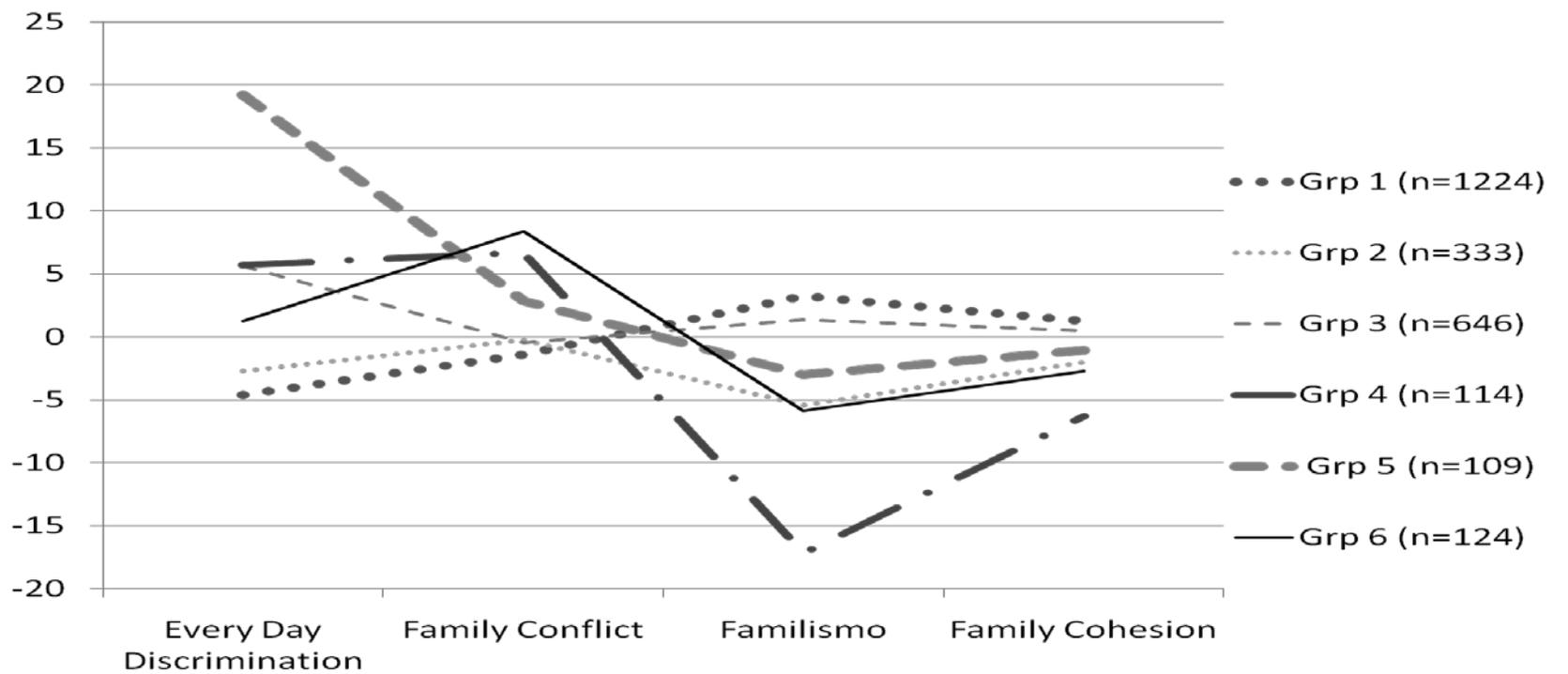


Figure 1.2. Profile of mean lived experiences for each profile group.

CHAPTER 3

Study 2

Clinical depression is a common, chronic, and serious condition. The World Health Organization (WHO) has ranked Major Depressive Disorder (MDD) as one of the most burdensome diseases in the world (Andrade et al., 2003), often resulting in limitations in work, family and social life (Pratt & Brody, 2010). Depression is particularly common among cigarette smokers (CDC, 2009; Pratt & Brody, 2010), and cigarette smoking is the leading cause of preventable death in the United States (U.S.) (CDC, 2009). Reasons why depression and smoking co-occur are not fully understood. One line of research suggests that individuals use cigarettes to self-medicate their depressive symptoms (e.g., Breslau, Peterson, Schultz, Chilcoat, & Andreski, 1998). Other studies indicate the opposite, that nicotine leads to depressive symptoms by changing smokers' brain chemistry (e.g., Quattrocki et al., 2000). Still others have negated a causal relationship between smoking and depression, proposing that depression and smoking are simply influenced by common factors such as stress (Kendler et al., 1993). Whatever the reason for the association between depression and smoking, it is clear that research on depression should include smoking, and research on smoking should include depression. Depression and cigarette smoking also co-occur among U.S. Latino/as (e.g., Escobedo, Kirch, & Anda, 1996). According to national estimates,

approximately 15% of U.S. Latino/as have a history of MDD (Alegria et al., 2008), and 16% are smokers (CDC, 2009). Latina women experience depression at higher rates than do Latino men (e.g., Alegria et al., 2008), but more Latino men than women smoke cigarettes (CDC, 2009). Consistent with research in the general U.S. population (Pratt & Brody, 2010), Escobedo and colleagues (1996) found that the association between depression and smoking was stronger for Latina women compared to Latino men. These data point to significant gender differences in smoking and depression within the Latina/o community, suggesting that gender ought to be a factor in risk models.

Risk for Latino/a depression and smoking also increase with Latino/a acculturation to U.S. society. Again, this association is stronger for Latina/o women than men, but reasons for this gender difference are unclear (e.g., Bethel & Schenker, 2005; Vega & Sribney, 2008). If acculturation leads to increased depression and smoking, especially for women, why is that? More specifically: What are the pathways that link acculturation to Latino/a mental health, and which of these pathways differ by gender? Answers to these questions can inform the development of more effective assessment, prevention, and intervention strategies, tailored to the needs of Latina women and men — the largest and fastest-growing immigrant group in the U.S. (U.S. Census Bureau, 2010). These considerations motivated the current study.

Latino/a Acculturation, Enculturation, and Mental Health

Acculturation refers to the process by which Latino/as in the U.S. acquire aspects of the dominant U.S. culture, whereas enculturation is the selective adherence to or

acquisition of Latino/a cultural practices, values, and identifications (Cabassa, 2003; Schwartz et al., 2010). Traditionally, acculturation has been viewed as a uni-dimensional process, in which Latino/a immigrants were thought to abandon the practices, values, and identifications of their Latino/a culture to adopt those of the dominant U.S. society. More recently, scholars have begun to view it as a multi-dimensional process in which Latino/as can simultaneously acculturate and enculturate (Cabassa, 2003). In other words, U.S. Latino/as can adopt aspects of the dominant U.S. culture without abandoning their Latino/a cultural practices, values, and identifications (Cabassa, 2003; Schwartz et al., 2010).

Schwartz and colleagues (2010) further proposed that acculturation is a multidimensional process, in regards to not only simultaneous acculturation and enculturation, but also the components of acculturation that are assumed to change. More specifically, Schwartz and colleagues (2010) proposed that immigrant populations such as Latino/as in the U.S. can experience changes in their cultural practices, values, and identifications, and these changes can pertain to both the U.S. and Hispanic cultural domains. For example, for U.S. Latino/as acculturation can include adherence to American and Hispanic cultural practices (e.g., English and Spanish language use), collectivistic (e.g., emphasis on interdependence) and individualistic values (e.g., emphasis on independence), and endorsement of an American and Hispanic identity. Moreover, U.S. Latino/as can experience changes in one, two or all of these acculturative processes simultaneously or at different rates, depending on Latino/as' socio-cultural

context (e.g., experiences of discrimination, context of reception, residence in ethnic or non-ethnic enclaves, and so on; Schwartz et al., 2010).

Both acculturation and enculturation have implications for Latino/a mental health. Although Latino/as tend to have lower rates of depression and smoking than non-Latino/a whites (CDC, 2009; Hasin, Goodwin, Stinson, & Grant, 2005), these differences disappear as Latino/as acculturate to the U.S. (Bethel & Schenker, 2005; Burnam, Hough, Karno, Escobar, & Telles, 1987). For this reason, researchers have proposed that acculturation increases Latino/a risk for depression and smoking, while enculturation reduces risk (e.g., De la Rosa, 2002; Vega & Sribney, 2008). Questions remain, however, about *pathways through which* acculturation/enculturation relate to mental health. Acculturation must bring stressful experiences that increase risk for depression and smoking, while the opposite must be true for enculturation. We propose those stressful experiences to be everyday discrimination, family conflict, and (reduced) family closeness.

Stressful Experiences: Everyday Discrimination and Family Conflict

Everyday discrimination has been defined as perceived daily experiences of unfair, differential treatment (Algeria et al., 2004). Routine experiences of everyday discrimination can include being treated rudely, ignored, threatened or harassed, being thought of as less smart, being called names or insulted, and being treated as someone to be feared (Alegria et al., 2004). Latino/as often encounter everyday discrimination as they acculturate to the dominant U.S. culture. Cook, Alegría, Lin, and Guo (2009) analyzed data from the National Latino/a Asian American Study (NLAAS) and identified a positive association between acculturation and perceived discrimination. In another

NLAAS study, Latino men reported more daily discrimination than Latina women (Perez, Fortuna, & Alegría, 2008). Moreover, discrimination was linked with Latino/a MDD in the NLAAS (Cook et al., 2009), and in research with Latino/a youth, acculturation was related with more smoking (Kam et al., 2010; Wiehe, Aalsma, Liu, & Fortenberry, 2010). Scholars have theorized that, over time, stress proliferation explains the links between discrimination and Latino/a mental health and substance use (e.g., Alegria et al., 2004; Ong et al., 2009). According to this argument, everyday experiences of discrimination constitute a form of chronic stress which generates additional stressful experiences. These stressful experiences in conjunction with daily discrimination foster elevated risk for depression and smoking (Ong et al., 2009).

Latino/as can further experience family conflict as a result of acculturation to the U.S. (e.g., Cook et al., 2009; Sarmiento & Cardemil, 2009). Falicov (1996) suggested that structural disruption occurs within Latino/a families as individuals acculturate to the dominant U.S. culture. Consistent with these ideas researchers have identified family conflict as a possible pathway by which acculturation is linked with risk for depressive disorders among Latino/a adults who participated in the NLAAS. Moreover, researchers have proposed that Latina women acculturate faster than Latino men, possibly due to the freedom that comes with less traditional feminine roles (Gil & Vazquez, 1996; Zayas, Lester, Cabassa, & Fortuna, 2005). According to the Latino/a cultural values of *marianismo* and *machismo*, women are expected to be caring, nurturing, and self-sacrificing – always prioritizing the needs of the family – while men are expected to protect and provide financial support to their families (e.g., Gil & Vazquez, 1996). Changes in gender roles as a result of acculturation can trigger conflict between Latina

women and their less-acculturated family members (Gil & Vazquez, 1996). Latino/as may develop mental health problems and use substances as a response to this family conflict. Moreover, Latina women are more negatively affected by family conflict than their Latino male counterparts (Sarmiento & Cardemil, 2009). These family-related processes could explain why acculturation predicts depression and smoking more strongly among Latina women than Latino men.

Protective Experiences: Family Cohesion and Familismo

Researchers have long documented the pivotal role of family in the daily lives of U.S. Latino/as (e.g., Coonrod, Balcazar, Brady, Garcia, & Van Tine, 1991; Gil, Wagner, & Vega, 2000; Rivera, 2007). *Family cohesion* has been characterized as a strong emotional bond that creates family closeness and communication (e.g., Olson, Russell, & Sprenkle, 1986). Family cohesion can protect against external stress (e.g. Canino et al., 2008; Rivera et al., 2008), and it is a function of the cultural value of *familismo*.

Familismo emphasizes trust and loyalty between family members and encompasses a general orientation to the family. It is characterized by positive interpersonal relationships, high family unity, social support, and interdependence. The strong emotional bonds measured by familismo and family cohesion promote family closeness and support (e.g., Rivera, 2007; Rivera et al., 2008). Conversely, low family cohesion and familismo related to increased cigarette smoking in a community sample of Mexican American women (Coonrod et al., 1999), substance use in a sample of Latino adolescent males (Gil, Wagner, & Vega, 2000), and psychological distress among Latino/a adults who participated in the NLAAS (Rivera et al., 2008). Moreover, family closeness in the form of cohesion and familismo decreases with acculturation (e.g., Miranda, Estrada, &

Firpo-Jimenez, 2000; Baer & Schmitz, 2006), possibly explaining the links of acculturation with depression and smoking. Research with non-Latino White college students has revealed gender differences in reports of family cohesion. Women endorsed higher levels of family cohesion than men, and women's mental health was more negatively influenced by low family cohesion than men's mental health (Durell Johnson, Lavoie, & Mahoney, 2001). The current study extends this line of research by investigating whether these relationships generalize to U.S. Latino/a men and women.

Towards an Integrated Model: The Current Study

Different research programs have investigated the experiences that come with Latino/a acculturation (e.g., family conflict and everyday discrimination) and enculturation (e.g., shared family values and family cohesion). These experiences can affect risk for smoking and depression, in ways that often diverge for women and men. While prior research has made vital contributions to our knowledge of Latino/a depression and smoking, it has also provided a disjointed understanding because of its reliance on models with one or possibly two experiences that accompany acculturation. In everyday life, the various acculturation experiences (i.e., family conflict, everyday discrimination, family values, and family cohesion) can influence each other in complex ways. Therefore, an important next step is to integrate prior research findings into more unified models, to examine how these acculturation experiences relate and unfold as part of one process. Such models will further our understanding of the acculturation process and its influence on Latino/a depression and smoking. It is also critical to pinpoint the exact relationships that differ by gender. This will further our understanding of the

direct, mediated, and moderated impact of acculturation-related experiences on Latino/a mental health.

With these goals in mind, we sought to integrate prior findings and theory into a unified, gendered model of Latino/a acculturation, depression, and smoking. Based on the theoretical and empirical work reviewed above, we developed the model depicted in Figure 1.3. Our model proposes the following hypotheses;

1. Based on research that has shown that acculturation comes with a loss in familismo and family cohesion, we expected acculturation to be associated with decreased familismo and family cohesion (combined into the construct of *family closeness*).
2. Conversely, and consistent with the idea that enculturation promotes familismo and family cohesion, we hypothesized enculturation to be associated with increased family closeness.
3. We also hypothesized that acculturation would indirectly influence discrimination and family conflict by way of family closeness, because prior scholarship suggests that family closeness and support can protect against external stress such as discrimination and family conflict. In other words, we expected family closeness to be linked with less discrimination and family conflict.
4. Based on research that has linked acculturation with everyday discrimination and family conflict, our model proposes that acculturation will be associated with increased discriminatory experiences and family conflict.

5. In line with research that has shown that discrimination and family conflict may explain the links of acculturation with depression and smoking, we expected acculturation to have an indirect impact on depression and smoking by way of discrimination and family conflict. In other words, we expected discrimination and family conflict to link with more frequent depression and smoking.
6. Conversely, we expected *enculturation* to be directly associated with fewer experiences of discrimination and family conflict, because theory and research suggests that enculturation protects Latino/as from discrimination and family conflict.
7. As with acculturation, we hypothesized enculturation to have an indirect impact on depression and smoking via discrimination and family conflict.

Figure 1.3 summarizes this collection of hypotheses, showing which relationships are expected (as indicated by an arrow between constructs) and the anticipated valence of each relationship (positive or negative).

Our final hypothesis pertained to the role of gender:

8. We expected gender to be an important moderator of this model. Specifically, we expected the paths (both direct and indirect) from acculturation to family closeness and family conflict to be stronger for women than men, and we also expected women to show a more detrimental impact of family conflict (i.e., stronger relationships connecting conflict to MDD and smoking).

Our analyses controlled for the influence of nativity (U.S. versus foreign born), years spent in the U.S., Latino/a ethnic group, education, and income, to rule these out as alternative explanations for elevated depression and smoking risk.

Methods

Participants and Procedure

Participants included 2554 Latino/a adults who completed the National Latino and Asian American Study (NLAAS). The NLAAS is a nationally representative household survey of non-institutionalized Latino/a and Asian persons, 18 years of age or older, residing in the coterminous United States, Alaska, and Hawaii (Heeringa et al., 2004). The NLAAS excluded individuals who were institutionalized or living on military bases. Conducted between 2002 and 2003 by the University of Michigan's Institute for Social Research (ISR), it is part of the Collaborative Psychiatric Epidemiology Studies (CPES). The CPES is comprised of the National Comorbidity Survey Replication (NCS-R), the National Study of American Life (NSAL), and the National Latino and Asian American Study of Mental Health (NLAAS). Funded by the National Institute of Mental Health (NIMH), the three CPES surveys were designed to provide psychiatric epidemiological information on different populations (Alegria et al. 2004; Heeringa et al., 2004). Although the three studies have common features, each individual study was modified so as to best encompass the unique features of each study sample.

The NLAAS included a four-stage national area probability sample with special supplements for adults of Puerto Rican, Cuban, Chinese, Filipino, and Vietnamese national origin. The study team screened a total of 27,026 sample housing units for eligible adults, and a total of 4,649 interviews were completed. The final NLAAS sample

included 2,554 Latino/as (Puerto Ricans, Mexican Americans, Cubans, and other Hispanics) and 2,095 Asian Americans (Chinese, Vietnamese, Filipinos, and other Asians). NLAAS interviews were conducted in English, Spanish, Chinese (Mandarin), Tagalog, or Vietnamese, according to respondent's preference. See Heeringa et al. (2004) for more sampling information.

The NLAAS was designed to capture psychiatric information that is comparable to psychiatric information gathered by the NCS-R and the NSAL (e.g., diagnostic measures of depression and anxiety) (see Alegria et al., 2004 for more information on common outcome measures), but it also included measures aimed at capturing a range of environmental and socio-cultural factors and experiences unique to Asian Americans and Latino/a Americans in the U.S. (Alegria et al., 2004). For example, unlike the NSAL and NCS-R, the NLAAS included measures of acculturation, familismo, acculturative stress, language proficiency, intergenerational conflict, loss of social ties, barriers to receiving health care services, and other questions specific to Latino/as and Asian American's immigration status.

Although the final NLAAS sample included 2,554 Latino/as (weighted response rate of 75.5%) and 2,095 Asian Americans, we narrowed our analysis to the Latino/a sample of 868 Mexicans, 577 Cubans, 495 Puerto Ricans, and 614 "Other Hispanics." Almost 60% of the Latino/as were born outside the U.S., 48% were female, and the mean age was 38.02 years. Approximately 40% of the Latino/a sample had completed 11 years of education or less, and 12% had completed at least 16 years of education. Over 60% of these respondents were employed at the time of data collection, 64% were married, 21% had never married, and 14% had been divorced or separated.

Measures

Past-Year MDD. Past-year history of Major Depressive Disorder (MDD) was assessed with the diagnostic interview of the World Mental Health Survey Initiative version of the World Health Organization Composite International Diagnostic Interview (WMH-CIDI; Kessler & Ustun, 2004), a structured diagnostic instrument based on criteria of the DSM-IV. Based on this interview, participants received scores of either 0 (*No Past-Year MDD*) or 1 (*Past-Year MDD*).

Current Smoking. Participants were asked to indicate whether they were current smokers, ex-smokers, or never smokers of cigarettes. We dichotomized response options to obtain a measure of current smoking (0 = *Not a Current Smoker*, 1 = *Current Smoker*).

Enculturation and Acculturation. As markers of enculturation and acculturation, we used measures of Spanish and English proficiency, respectively. Spanish proficiency was assessed with three items from the Cultural Identity Scales for Latino/a Adolescents (Felix-Ortiz, Newcomb, & Meyers, 1994). Participants indicated how well they speak, read, and write in the Spanish language (from 1 = *poor* to 4 = *excellent*). Scores were summed, and higher scores represented better Spanish proficiency (Cronbach's $\alpha = .90$). A parallel measure was created specifically for the NLAAS to assess English proficiency (Cronbach's $\alpha = .97$).

Everyday Discrimination. Everyday discrimination was assessed with nine items taken from the Detroit Area Study (DAS) (Alegría et al., 2004). Sample items included: 1) You are treated with less respect than other people, 2) People act as if they think you are not smart, and 3) You receive poorer service than other people at restaurants or stores. Respondents indicated the frequency of each experience on a 6-point scale, ranging from

1 = *never* to 6 = *almost every day*. Higher scores represented higher discrimination (Cronbach's $\alpha = .91$).

Family Conflict. The NLAAS assessed family conflict with 5-items adopted from the family/culture stress subscale of the Hispanic Stress Inventory (HSI) (Alegría et al., 2004). Sample items include: 1) Because of the lack of family unity, you have felt lonely and isolated, 2) Your personal goals have been in conflict with your family, and 3) Because you have different customs, you have had arguments with other members of your family. Respondents reported the frequency of each experience on a 3-point scale (1 = *hardly ever or never*, 2 = *sometimes*, and 3 = *often*). Higher scores represented higher levels of family conflict (Cronbach's $\alpha = .79$).

Family Closeness. Family closeness was assessed with ten items addressing family closeness, familial cultural values, and family pride. Three items came from the Family Cohesion Scale, and seven items were taken from the Family Environment Scale, a measure of familismo (Alegría et al., 2004; Olson, 1986). We combined these measures of family cohesion and familismo into the overarching construct of “family closeness” because of their conceptual overlap and high correlation ($r = .77$). Sample items include 1) Family members respect one another, 2) We share similar values as a family, 3) Family members feel very close to each other, and 4) Family togetherness is very important. Respondents indicated how strongly they agreed or disagreed with each statement on a 4-point scale (1 = *strongly disagree* to 4 = *strongly agree*), with higher scores indicating higher levels of family closeness (Cronbach's $\alpha = .93$).

Gender. Gender was self-reported and dummy coded as 1 = *female* and 0 = *male*.

Ethnicity. Respondents self-identified their Latino/a ethnic sub-group as *Cuban, Puerto Rican, Mexican, or Other Hispanic.*

Nativity. Respondents indicated in a single item whether they were born in the U.S. (which we coded as 0) or another country (coded as 1).

Years Spent in the U.S. We coded respondents' years spent in the U.S. on a 5-point scale: 1 = *less than five years*, 2 = *five to ten years*, 3 = *11-20 years*, 4 = *20 years or more*, and 5 = *U.S. born*. Thus, higher scores represented more years spent in the U.S.

Other Demographics. *Education* was assessed in years of education, and respondents chose from the following response options: *0-11 years, 12 years, 13-15 years, and 16 or more years*. We treated this measure of education as an ordinal variable; higher scores represent more years of education. In the NLAAS, *income* was measured as "household income," and ranged from \$0 to \$200,000.

Results

Weighting and Analyses

We applied sampling weights and correct standard errors to all our analyses to adjust for the complex sample design of the NLAAS (Heeringa et al., 2004). NLAAS respondents were sampled based on strata and clusters, and as part of this complex sampling procedure, Latino/a respondents were oversampled to achieve a nationally representative sample of U.S. Latino/as. This complex sampling procedure allows for the projection of study results to the general U.S. Latino/a population. We utilized the complex sample module in SPSS 19.0 (SPSS Inc., 2011) to conduct descriptive analyses. We used MPLUS Version 6.1 (Muthen & Muthen, 2010) to perform structural equation modeling. For all analyses (descriptive and structural equation), we employed available

commands designed to handle complex survey data. Specifically, we included weighting for stratification, clustering, and Latino/a oversampling.

Descriptive Findings

Table 1.3 shows weighted descriptive statistics. Approximately 9% of the full sample endorsed a history of past-year MDD, and 20% of individuals were current smokers. The mean age of MDD onset for the overall sample was 25.35, and the mean age of smoking onset was 15.21. To determine gender differences in descriptive characteristics, we conducted weighted chi-square (for categorical variables) and Wald-F tests (for continuous variables). Women (10.8%) had statistically significant higher past-year MDD prevalence than men (6.4%), $\chi^2 (df = 1, n = 2554) = 15.82, p < .001$, and men (26.4%) were twice as likely to be current smokers compared to women (13.1%), $\chi^2 (df = 1, n = 2554) = 70.20, p < .001$. There were no differences in men's and women's levels of acculturation, but on average women were more *enculturated* ($M = 8.60, SD = 2.63$) than men ($M = 8.08, SD = 2.69$), $F(1, 48) = 8.33, p < .05$. While men reported higher mean levels of everyday discrimination ($M = 17.22, SD = 8.21$), $F(1,52) = 16.23, p < .001$, and family closeness ($M = 36.42, SD = 4.65$), $F(1, 52) = 5.45, p < .05$, compared to women ($M = 15.43, SD = 7.06$ and $M = 35.74, SD = 5.44$, respectively), women reported more family conflict ($M = 6.58, SD = 2.06$) than men ($M = 6.13, SD = 1.71$), $F(1,52) = 14.95, p < .001$. Weighted correlations among all study constructs appear in Table 2.3.

Overall Structural Equation Modeling

Prior to modeling, we randomly assigned and averaged items for each construct into two to three manifest indicators (Little, Cunningham, & Shahar, 2002). For example, the nine discrimination items were randomly parceled into three indicators of

the latent factor “discrimination.” The only exception to this procedure was with past-year MDD, current smoker status, and the control variables (i.e., nativity, years spent in the U.S., Latino/a group, education, and income), which we treated as observed variables.

After constructing indicators, we conducted weighted structural equation modeling with latent variables to test hypotheses embedded in Figure 1.3, using MPLUS Version 6.1 (Muthen & Muthen, 2010). For all estimated models, we evaluated overall fit with the comparative fit index (*CFI*), the Tucker-Lewis index (*TLI*, also known as the Non Normed Fit Index or NNFI), the chi-square test of model fit (χ^2), and the root mean square error of approximation (*RMSEA*) (Hu & Bentler, 1998). We did not consider the p-value of the chi-square test as a criterion for good model fit, because a large sample size tends to inflate the chi-square value, making it difficult to achieve a non-significant chi-square statistic under any circumstances (Little, Cunningham, & Shahar, 2002). We incorporated sampling weights and correct standard errors due to the complex sample design of the NLAAS; results are therefore generalizable to the larger U.S. Latino/a population. This analysis was based on data from all Latino/as combined ($N = 2554$).

As suggested by Anderson and Gerbing (1988), we undertook a two-stage approach to modeling. First, we estimated the measurement model for the latent variables to ensure that the psychometric properties of the measures were adequate and loaded on the hypothesized factors. The overall measurement model showed excellent fit: $CFI = .993$; $TLI = .991$; $RMSEA = .021$, 90% $CI [.017, .026]$; $\chi^2 = 173.475$, $df = 80$, $p < .001$. This indicated that the observed variables were good indicators of the latent variables, and each latent variable represented a separate construct.

Next, we tested the structural model depicted in Figure 1.3. As indicated by model fit indices ($CFI = .943$; $TLI = .931$; $RMSEA = .021$, 90% $CI [.018, .024]$; $\chi^2 = 448.976$, $df = 213$, $p < .001$), this model provided a good fit of the data, and ten of twelve structural path values were statistically significant (see Figure 2.3). Standardized path coefficients suggested that acculturation was associated with increased discriminatory experiences ($\beta = .24$), and reduced family closeness ($\beta = -.11$). Enculturation was linked with less discrimination ($\beta = -.12$) and higher levels of family closeness ($\beta = .15$). Family closeness was then associated with decreased family conflict ($\beta = -.61$). Discrimination ($\beta = .15$) and family conflict ($\beta = .24$) were related to higher endorsement of past-year MDD. In regards to current smoker status, discrimination ($\beta = .12$) but not family conflict predicted current smoking.

Multi-group Structural Equation Modeling: Gender as a Moderator

As a next step, we examined gender as a moderator using weighted multi-group structural equation modeling. First, we re-estimated the fit of our model on the overall sample ($N = 2554$) while constraining all the paths in both the measurement and structural models to equality between men and women. As shown in Table 3.3, the fully constrained model provided a satisfactory fit to the data (see Test 1 of Table 3.3). Nevertheless, we sought to determine whether the form of the proposed model and/or strength of relations among the variables in the model differed between men and women. Towards this end, we began by permitting the residual variance of the indicators to differ between genders (Test 2 of Table 3.3). Allowing the residual variance to differ did not result in a significant improvement in model fit, as indicated by a nonsignificant $\Delta\chi^2$.

We then examined whether the strength of any paths depicted in Figure 1.3 significantly differed between men and women. In order to do so, we systematically removed the gender equality constraint on each individual path to determine whether allowing paths to differ between men and women resulted in significant improvements in model fit (we only hypothesized gender differences in certain paths, but tested for all possible gender differences for the sake of thoroughness). In determining whether allowing the individual paths to differ between men and women resulted in significant model fit improvements, we conducted a chi-square difference test, comparing the chi-square value of Test 1 with that of each subsequent test (i.e., we tested whether removing the constraint resulted in a reduction of the chi-square value and if this reduction was statistically significant). After testing the effect of removing each constraint, we replaced the constraint after we had determined whether its removal resulted in improved model fit. Table 3.3 shows the results of this process.

Whereas Test 1 examined the fully gender-invariant model, Test 3 allowed the residual variance and the path between acculturation and discrimination to vary for men and women. This change did not result in a significant improvement of model fit when compared with the model fit of Test 1. In Test 4, we removed the gender-equality constraint on the residual variance and the path between enculturation and discrimination. In Test 5 we allowed the residual variance and the path from family closeness to discrimination to vary by gender. None of these changes resulted in a significant improvement of model fit, compared to Test 1. We continued this process until we had allowed each path depicted in Figure 1.3 to differ between men and women. In all, we tested 14 different models, and Test 10 demonstrated the best fit (see Table 3.3).

As shown in Table 3.3, compared to Test 1, Test 10 resulted in significant model fit improvement ($p < .001$). Test 10 examined whether the structural path from family closeness to family conflict varied by gender. Figure 3.3 displays the results of Test 10, separately for men and women. The results showed that family closeness was negatively associated with family conflict for both men and women, but the effect was considerably stronger for women ($\beta = -.72$) compared to men ($\beta = -.49$). In sum, the multi-group analysis suggested that all relationships in our model are invariant by gender, with one important exception: reduced family closeness predicted much more family conflict in Latina women compared to Latino men.

As shown in Figure 3.3, standardized coefficients reveal that for both women and men, acculturation was associated with elevated experiences of discrimination ($p < .001$), while enculturation had the opposite effect (reduced discrimination, $p < .05$). Moreover, acculturation was linked with decreased family closeness ($p < .05$) and enculturation with increased family closeness in both groups ($p < .001$). Family closeness, in turn, predicted lower discrimination and lower family conflict for men and women ($p < .001$). However, the connection of family closeness with family conflict was markedly stronger for women ($\beta = -.72$) compared to men ($\beta = -.49$). Discrimination ($p < .001$) and family conflict were linked with elevated depression ($p < .001$) in both genders. In regards to current smoking, only discrimination was significantly related with more smoking ($p < .05$) in both genders. However, the association of family conflict with elevated smoking was in the expected direction and marginally significant ($p = .09$).

In summary, our findings suggest that Latino/a acculturation comes with decreases in perceived family closeness, and this loss may increase experiences of family

conflict; this is true for both men and women, but much more so for women. Moreover, loss in family closeness puts Latino/as at greater risk for experiencing everyday discrimination, which then elevates Latino/a risk for smoking and depression. Latino/a *enculturation*, in contrast, may offer protective benefits: for both women and men, *enculturation* links with greater family closeness and less everyday discrimination, ultimately predicting lower levels of MDD and smoking.

Discussion

Research in the past 20 years has demonstrated that risk for Latino/a depression and smoking increases as Latino/as acculturate to the dominant U.S. culture (e.g., Bethel & Schenker, 2005; Vega & Sribney, 2008). This association is stronger for Latina/o women than men, but reasons for this gender difference have been elusive. To better understand why life in the U.S. is accompanied with increased risk, especially for Latina women, we conducted a gendered analysis of the process by which acculturation-related experiences unfold and connect to depression and smoking. This is a vital next step in Latino/a mental health research.

The novel contributions of the present study are threefold. First, we integrated prior research and theory on acculturation-related experiences into a unified process-oriented model. In everyday life acculturation-related experiences influence each other, co-occur, and develop as part of one process. Thus, understanding this process will provide information on where to best intervene to prevent or treat Latino/a depression and smoking in everyday life. It also provides information that can inform the development of smoking cessation programs tailored to the needs of U.S. Latino/as. Second, we identified pathways not only for depression but also smoking. This is

important because depression and smoking frequently co-occur in U.S. Latino/as (Escobedo et al., 1996). We identified similarities (e.g., the protective role of family) but also differences (e.g., depression was linked with family conflict and discrimination; smoking was linked with discrimination only). This knowledge can inform more sensitive ways to not only reduce depression but also smoking. Lastly and importantly, the present study is one of the first that has empirically examined how acculturation-related experiences unfold similarly *and* differently for Latina women and Latino men. We know that acculturation is more strongly linked with depression and smoking in women than men, but *empirical* data that has examined why this might be has been lacking. The current study contributes to this understanding and information can inform gender-sensitive prevention and intervention strategies. We now discuss key findings and their implications for Latino/a depression and smoking.

Key Findings and Their Implications

Descriptively speaking, a number of significant gender differences emerged. Consistent with prior research (e.g., Alegria et al., 2008; CDC, 2009), more Latina women reported past-year MDD than Latino men, while more men than women were current smokers. Women also described higher levels of enculturation (referring to retention of Latino/a cultural practices, values, and identifications), while men reported greater everyday discrimination (daily experiences of unfair, differential treatment) and family closeness (family cohesion, orientation toward the family). The acculturation-related experience on which Latinas fared the worst involved family conflict: women compared to men described more frequent arguments and conflicts with family members. This pinpoints a gender-differentiated stressor that could help explain why the link

between acculturation and mental health tends to be stronger for Latina women than men. Investigating this possibility, we developed an integrated model of pathways (including family conflict) through which acculturation ultimately links to Latino/a depression and smoking; we also tested whether and how gender moderates this model.

In support of hypotheses 1 through 3, acculturation and enculturation related significantly to family closeness (hypotheses 1 and 2), which in turn had strong associations with family conflict and discrimination (hypothesis 3). While enculturation seems to nurture family closeness (hypothesis 2), acculturation weakens it (hypothesis 1), and this was equally true for men and women (contrary to hypothesis 8). Consistent with our third hypothesis, Latino/as reported not only more family conflict but also higher everyday discrimination, as they perceived lost family closeness. In line with our fifth hypothesis, discriminatory experiences, though seemingly minor, predicted increased risk for both MDD and smoking. Family conflict also related to MDD, over and above the effects of discrimination. Taken together, these findings indicate that for Latino/a men and women, acculturation increases risk for depression and smoking via *disruption of family closeness and harmony* (consistent with hypothesis 5).

Reasons for *why* acculturation comes with lost family closeness in Latino/as remain largely unexplored, but this might be due to acculturated Latinas' greater participation in the paid workforce, which may take time away from family (Hondagneu-Sotelo, Deutsch, Romero, & Zavella, 1993). For men, acculturation may not change levels of participation in either the workforce or in family life, but men may be distressed by women's reduced time with family, and fear that family cohesion is at risk. As a result, men (and less-acculturated family members) may try to impose rules or familistic

values on women as a way of coping with their own fears, causing role and family conflict. Another possibility is that traditional Latino/a family values such as *familismo* may increase feelings of guilt in Latinas when they prioritize work alongside family, and Latinas may feel blame for causing family conflict. All of these hypotheses are important avenues for future research.

In contradiction to our last hypothesis on the role of gender, our multi-group modeling results suggested that Latino/a men's and women's acculturation-related experiences unfold in a parallel manner, with gender *similarities* being more striking than differences. We found one important exception to this pattern, however: the link between family closeness and family conflict was notably stronger for women compared to men. This finding is in support of hypothesis 8. Increased family conflict related to increased depression risk. Moreover, decreased family closeness predicted exposure to everyday discrimination, which then connected to both depression and smoking. These findings indicate that acculturation may take a greater toll on women's mental health through its effects on the family. For this reason, interventions or preventions in the family domain might be especially beneficial for Latina well-being (and men could benefit from these interventions as well). Such preventions and interventions could target communication about changing family dynamics in the U.S., or they could target women's family related cognitions which may be causing them to perceive or experience less family closeness and more family conflict. Regardless of the specific approach a therapist takes, the findings from the current study can guide therapists in working with their Latina/o clients by highlighting the importance of family dynamics for men and women.

One possible way to improve family closeness is to help Latino/a men and women understand how life in the U.S. is changing them and their family interactions, and aid them in sharing their reasons for change and fears. This open communication may bring them closer together, because they may be better able to understand each other's position. This strategy would fit into existing therapy approaches (e.g., interpersonal psychotherapy) (Stuart & Robertson, 2003), and research should investigate if these approaches are effective in reducing depression and smoking in Latino/as.

In agreement with hypothesis 3, family closeness was also strongly linked with reduced everyday discrimination. These findings suggest that positive family lives may protect Latino/as from experiences or perceptions of unfair treatment. Perhaps Latino/as with close family ties have fewer opportunities to be discriminated against, because they spend more time with (Latino/a) family members than with "outsiders," who may harbor prejudices against Latino/as. Moreover, it is possible that Latino/as from close families experience discrimination but do not label it as such, because they also tend to be more enculturated than individuals with lower family closeness (Romero & Roberts, 1998). Both explanations could be true, and it is important that researchers begin to investigate why family closeness potentially buffers against discrimination. Knowledge gained from this research could provide important insights into ways to reduce or prevent everyday discrimination against U.S. Latino/as.

In support of hypotheses 4 through 7, acculturation and enculturation showed significant indirect relationships with Latino/a depression and smoking through experiences of discrimination. That is, as Latino/a men and women adopted more Non-Latino/a White American cultural practices (acculturation), they reported more instances

of unfair, differential treatment (hypothesis 4). Experiences of everyday discrimination, in turn, were linked with greater likelihood of depression and smoking (hypothesis 5). Conversely, maintenance of Latino cultural practices (i.e., enculturation, as indicated by Spanish proficiency) predicted less discrimination (hypothesis 6) and, indirectly, less smoking (hypothesis 7). These findings suggest that acculturation may expose Latino/as to discriminatory behavior (e.g., Agnew, 2001; Guilamo-Ramos, Jaccard, Johansson, & Turrisi, 2004), while enculturation protects Latino/as from this behavior. Two competing views exist regarding the associations of acculturation and enculturation with discrimination. One perspective proposes that *less*-acculturated Latino/as experience more discrimination because of their limited English proficiency and lack of familiarity with mainstream U.S. culture (e.g., Moradi & Risco, 2006). Moreover, it is thought that because of their strong ties to Latino/a culture, less-acculturated Latino/as are more likely to recognize discrimination (Romero & Roberts, 1998), thereby reporting more experiences of discrimination. The second view suggests that *more*-acculturated Latino/as experience more discrimination than other Latino/as. That is, Latino/as who were born in the U.S., have spent more time in the U.S., and speak more English encounter more discrimination because they have more opportunities for exposure (Agnew, 2001; Guilamo-Ramos et al. 2004). Similarly, acculturated Latino/as are thought to be more aware of ethnic disparities and hierarchies present in the U.S., and as a result they perceive greater discrimination compared to less acculturated Latino/as (Guilamo-Ramos et al., 2004). The results of our study support the second perspective.

It becomes clear that reducing everyday discrimination against Latino/as is important. Discrimination was directly associated with depression and smoking in

women and men, and this association remained even after accounting for the influence of family conflict. The majority of studies on Latino/a acculturation, mental health, and substance use have assessed the role of the family and Latino/a culture, but our findings suggest that life outside the family is also important. These findings demonstrate that we not only need to understand how factors such as family and culture affect Latino/a mental health and substance use, but increased efforts should be placed on structural factors such as discrimination.

Theories about discrimination reduction and prevention exist (e.g., Whitley & Kite, 2006). The *individual-level approach* helps individuals who discriminate to recognize their own discriminatory actions and values, and to find ways to self-regulate their tendencies to engage in discriminatory behavior (e.g., Whitley & Kite, 2006). The *intergroup contact approach* postulates that, as people of diverse backgrounds interact, they learn about each other's values and beliefs, which then changes their feelings towards each other (Whitley & Kite, 2006). Educational interventions have been designed to reduce prejudice among youth by implementing strategies to combat discrimination in classrooms (e.g., Whitley & Kite, 2006), while workplace interventions reduce prejudice and discrimination on the job (Whitley & Kite, 2006). In theory, these and other methods may help reduce and prevent discrimination against Latino/as.

The majority of studies on prejudice reduction have focused on White prejudice against Blacks, with limited attention to anti-Latino prejudice (e.g., Araujo & Borrell, 2006; Moradi & Risco, 2006). Black Americans and U.S. Latino/as can both experience discrimination based on their physical appearance (e.g., skin color), but Latino/as face additional axes of discrimination – based on their ability to speak English, their audible

accents when speaking English, and their immigrant status. Additionally, nascent research suggests that U.S. Latino/as experience discrimination not only from the non-Latino/a white population, but also from other U.S. Latino/as as well (Stepick & Dutton Stepick, 2009). For example, it has been documented that established immigrants often discriminate against more recent immigrants, and some Latino/a subgroups (e.g., individuals from Nicaragua) experience discrimination from other Latino/a subgroups (e.g., individuals from Cuba) (Stepick & Dutton Stepick, 2009). In other words, Latino/as in the U.S. can experience discrimination from both non-Latino/a whites as well as other U.S. Latino/as with varying immigration histories. These differences in potential sources for prejudice and discrimination against Black Americans and U.S. Latino/as accentuate the need to investigate whether existing theories and methods of discrimination reduction and prevention generalize to U.S. Latino/as.

It is important to note that this study assessed the “everyday” variety of discrimination (e.g., being treated with less respect than others, receiving poorer service). These experiences may appear trivial at first glance, especially when compared to more blatant forms of discrimination (e.g., in employment, college admissions). Our findings, however, suggest that even subtle discrimination can have adverse mental health consequences for Latino/as. These results call for increased attention to reducing everyday discrimination against Latino/as.

Limitations and Conclusions

Several study limitations should be noted. First, the cross-sectional methodology prevents us from drawing strong temporal or causal conclusions. This said, for the majority of participants, immigration or acculturation likely preceded the onset of

smoking and depression. That is, 65% of our sample was U.S. born ($n = 924$) or had immigrated to the U.S. before the age of 12 ($n = 365$). Smoking typically came later (mean age of smoking onset = 15.21 years), and MDD came much later (mean age of MDD onset = 25.35 years). In addition, we focused on *past-year* MDD and *current* smoking, to get a better sense of depression and smoking in the recent past, subsequent to immigration and/or acculturation. Nevertheless, future studies should collect data at different time points, to better understand how acculturation and smoking unfold over the life-course for Latino/as.

Second, although our integrative model captured key socio-cultural variables relevant to Latino/a mental health, it does not account for other factors linked with depression and smoking. For example, Beck (1983) proposed that depressive symptoms result when stressful life events evoke maladaptive thought patterns, and research has revealed a positive association between pessimistic cognitive styles and depressive symptoms in Latinas (Chang, Hirsch, Sanna, Jeglic, & Fabian, 2011). In regards to smoking, the *theory of reasoned action* suggests that smoking-related norms influence intentions to smoke, and intentions to smoke result in smoking onset (e.g., McMillan et al., 2005). Moreover, researchers have proposed that as a result of acculturation, Latina women abandon anti-smoking norms that protect them from smoking, and this loss of anti-smoking norms increases their risk of smoking (Bethel & Schenker, 2005). This may further explain why acculturation influences the smoking of Latina women more than the smoking of Latino men. Investigators have documented how Latino/a smoking-related cognitions change with acculturation (Marin, Marin, Otero-Sabogal, Sabogal, & Perez-Stable, 1990), but to date, it is not clear if changes in smoking-related cognitions

explain the association of acculturation and smoking for Latina women and men. Moreover, depression and smoking onset has also been linked with genetic and biological factors (e.g., Engel, 1980; Heath, Kirk, Meyer, & Martin, 1999; Li, 2003). Therefore, future research on Latino/a depression and smoking should extend our integrative socio-cultural model to include cognitive, genetic, and biological variables. This knowledge would shed light into how social and biological factors combine to influence Latino/a depression and smoking. Finally, readers should bear in mind the usual limitations that come with self-reported data.

Summary and Conclusion

Notwithstanding these limitations, this study advances our understanding of the direct, mediated, and moderated impact of acculturation-related experiences on Latino/a depression and smoking. Our integrated model is well-supported by theory and research, and tested on a large and representative sample. We found that gender similarities outnumber gender differences, except that Latina women fare significantly worse than Latino men when they lose family closeness. Importantly, the use of weighted NLAAS data means that these results can be generalized to the larger U.S. Latino/a population. Moreover, our findings cannot be explained by the influences of nativity, years spent in the U.S., Latino/a subgroup membership, or education and income levels (all of which were controlled for in our model).

Results from this project can inform the development of more targeted intervention, prevention, assessment, and policy-making strategies, tailored to Latino/a men and women. Latino/as face high risk for depression and smoking, and they belong to the largest and fastest-growing immigrant group in the U.S. It is vital to understand *why*

acculturation relates to increased depression and smoking, and it is equally important to understand why women are more affected than men. This study makes important strides in these directions.

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Table 1.3
Demographic Characteristics for the Full Sample and by Gender (Weighted)

	Full Sample (<i>N</i> = 2554)	Males (<i>n</i> = 1127)	Females (<i>n</i> = 1427)	<i>p</i>
Demographics	N (%) or M (SD)	N (%) or M (SD)	N (%) or M (SD)	
Past-Year MDD	249 (8.5)	78 (6.4)	171 (10.8)	**
Current Smoker	510 (20.0)	297 (26.4)	213 (13.1)	**
Acculturation	7.48 (3.57)	7.54 (3.45)	7.42 (3.71)	
Enculturation	8.34 (2.67)	8.08 (2.69)	8.60 (2.63)	*
Discrimination	16.36 (7.73)	17.22 (8.21)	15.43 (7.06)	**
Family Conflict	6.35 (1.90)	6.13 (1.71)	6.58 (2.06)	**
Family Closeness	36.09 (5.05)	36.42 (4.65)	35.74 (5.44)	*
Latino/a Ethnicity				
Mexican	868 (56.6)	398 (51.5)	470 (48.5)	
Cuban	577 (4.6)	276 (51.5)	301 (48.5)	
Puerto Rican	495 (10.0)	213 (51.5)	282 (48.5)	
Other Hispanic	614 (28.7)	240 (51.5)	374 (48.5)	
Nativity				

US-born	924 (42.8)	403 (42.8)	521 (43.0)	
Non-US born	1629 (57.2)	57.3 (2.5)	57.2 (2.9)	
Years Spent in the US	3.78 (1.33)	3.78 (0.07)	3.79 (1.34)	
Education	1.98 (1.02)	1.98 (1.02)	1.98 (1.04)	
Income	43107.80 (42886.02)	47028.97 (43693.98)	38943.68 (41643.94)	**

Note. * $p < .05$; ** $p < .01$.

Table 2.3
Correlations Between Study Variables (weighted)

	1	2	3	4	5	6	7	8	9	10	11
1. Acculturation	1										
2. Enculturation	-.13**	1									
3. Everyday Discrimination	.24**	-.16**	1								
4. Family Conflict	.09**	-.04	.31**	1							
5. Family Closeness	-.13**	.16**	-.26**	-.49**	1						
6. Nativity	-.65**	.39**	-.22**	-.07*	.13**	1					
7. Years Spent in the U.S.	.62**	-.34**	.13**	.04	-.12**	-.78**	1				
8. Education	.49**	.10*	.10**	.02	-.03	-.20**	.18**	1			
9. Income	.30**	-.00	.05*	-.04 ⁺	.00	-.15**	.20**	.40**	1		
10. Past-Year MDD	.03 ⁺	-.04	.12**	.17**	-.12**	-.03*	.06**	.00	-.03	1	
11. Current Smoker Status	.11**	-.11**	.10**	.04 ⁺	-.04*	-.13**	.11*	-.05*	-.00	.05*	1

Note. * $p < .05$; ** $p < .01$; ⁺ $p < .09$ and $p > .05$.
 Categorical variables: Nativity, Education, Current Smoker Status.

Table 3

Goodness-Fit-Indices for the Multi-group Model by Gender (weighted)

Model	χ^2	df	RMSEA	CFI	TLI	$\Delta\chi^2$	Δ df	Significant $\Delta\chi^2$
Test 1: Fully invariant by gender	785.387	487	0.022	0.940	0.937			
Test 2: Gender constraint released on residual variance and structural model	754.102	446	0.023	0.938	0.929	31.285	41	no
Test 3: Gender constraint released on residual variance and acculturation --> discrimination	772.885	471	0.022	0.939	0.934	12.502	16	no
Test 4: Gender constraint released on residual variance and enculturation --> discrimination	770.409	471	0.022	0.940	0.935	14.978	16	no
Test 5: Gender constraint released on residual variance and family closeness --> discrimination	766.685	471	0.022	0.940	0.935	18.702	16	no
Test 6: Gender constraint released on residual variance and acculturation --> family closeness	765.188	471	0.022	0.941	0.936	20.199	16	no
Test 7: Gender constraint released on residual variance and enculturation --> family closeness	777.164	471	0.023	0.938	0.933	8.223	16	no
Test 8: Gender constraint released on residual variance and acculturation --> family conflict	774.158	471	0.022	0.939	0.934	11.229	16	no
Test 9: Gender constraint released on residual variance and enculturation --> family conflict	764.119	471	0.022	0.941	0.936	21.268	16	no
Test10: Gender constraint released on residual variance and family closeness --> family conflict	742.95	471	0.021	0.945	0.941	42.437	16	yes
Test11: Gender constraint released on residual variance and discrimination --> MDD	774.736	471	0.023	0.939	0.934	10.651	16	no
Test12: Gender constraint released on residual variance and discrimination --> current smoking	771.653	471	0.022	0.939	0.934	13.734	16	no
Test13: Gender constraint released on residual variance and family conflict --> MDD	773.868	471	0.022	0.939	0.934	11.519	16	no
Test14: Gender constraint released on residual variance and family conflict --> current smoking	772.662	471	0.022	0.939	0.934	31.285	41	no

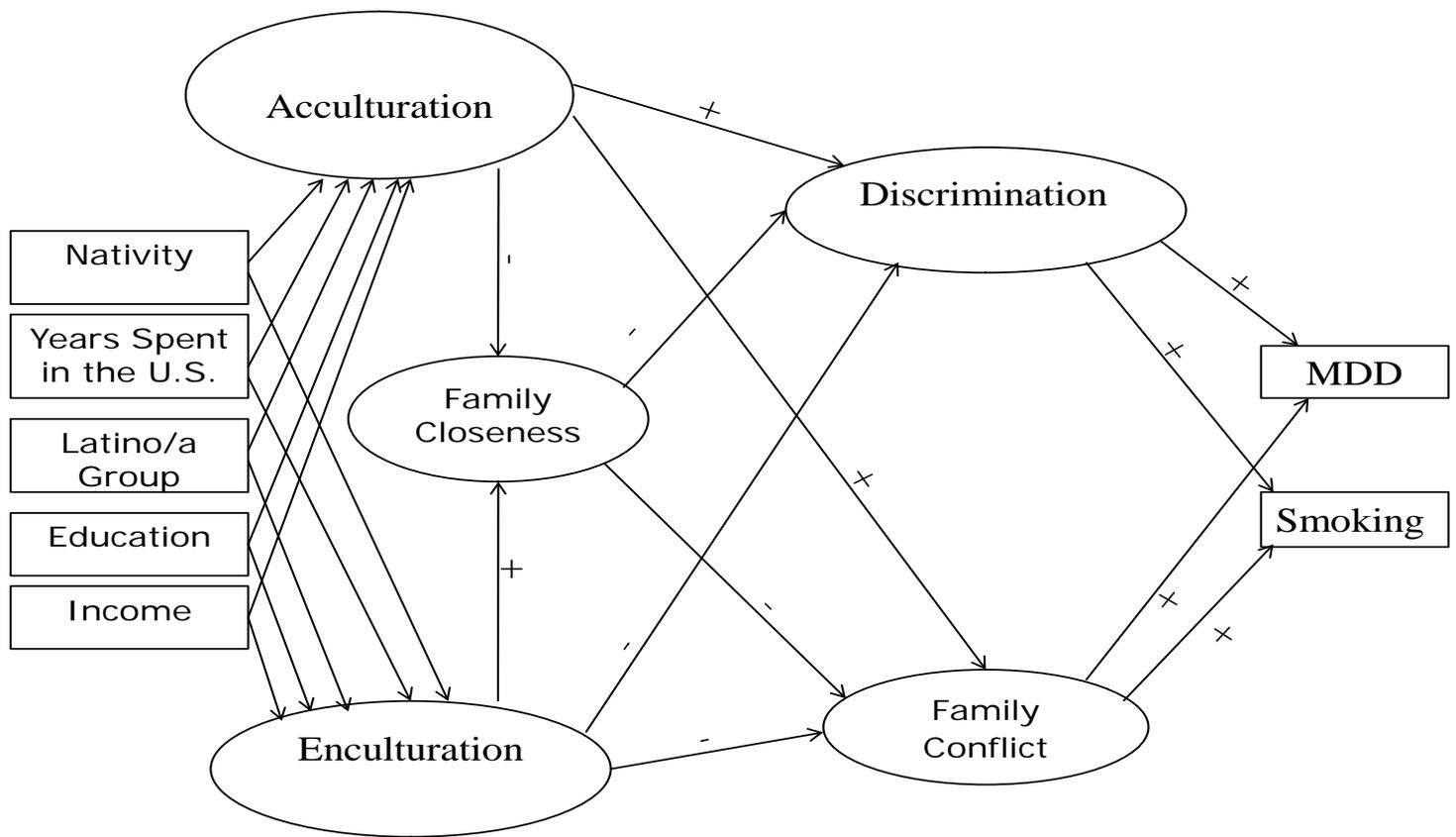


Figure 1.3 Hypothesized structural model, showing all expected relationships and their predicted valence.

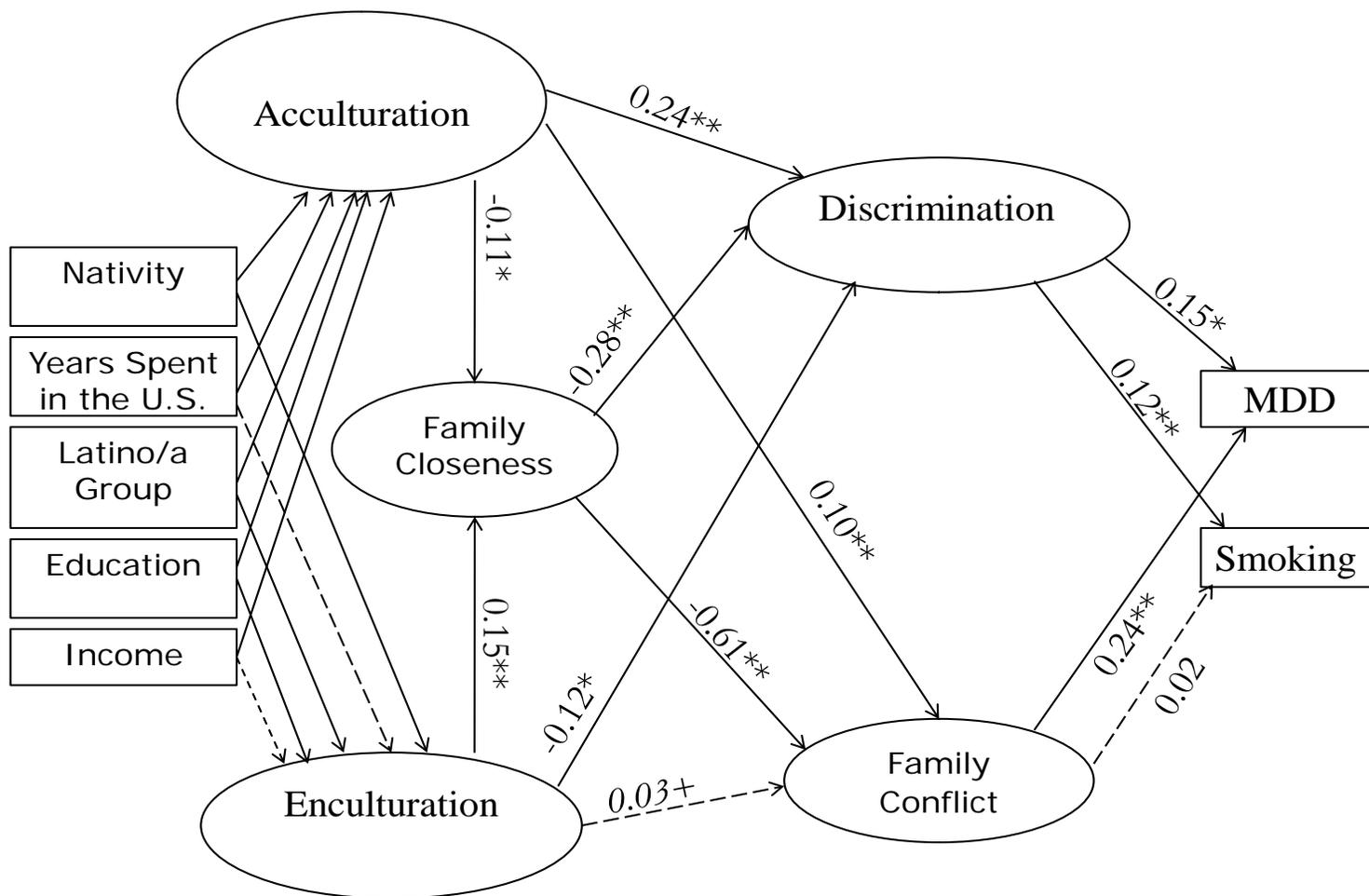


Figure 2.3 Initial structural model.

Note: Results are based on the overall sample, combining women and men ($N = 2554$). Dashed lines indicate non-significant paths.

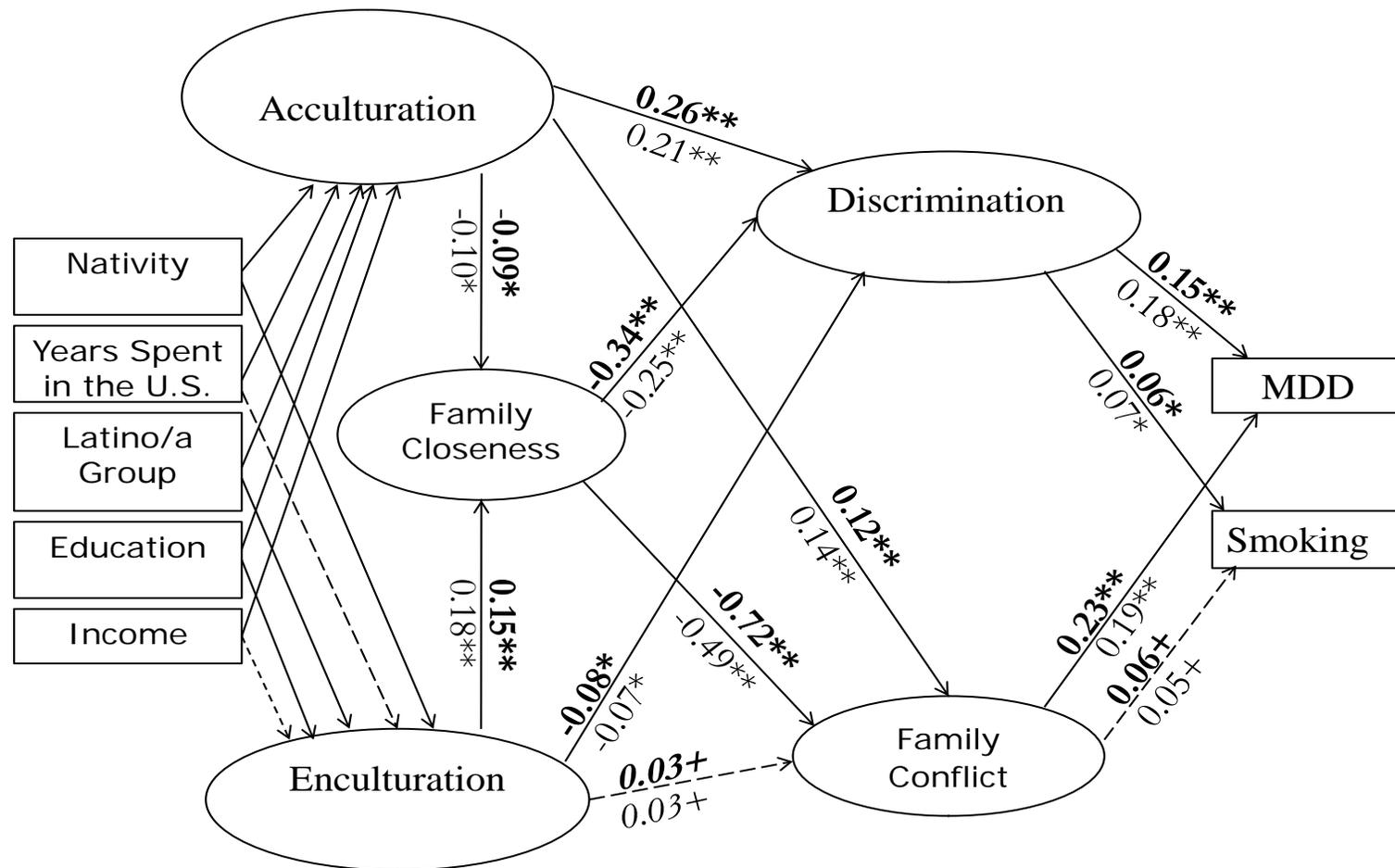


Figure 3.3 Multi-group Model.

Note: Results for men ($n = 1124$) appear in regular type, and results for women ($n = 1422$) appear in bold type.

CHAPTER 4

Conclusion

U.S. Latino/as are at risk for depression and cigarette smoking, and this risk increases with acculturation to the dominant U.S. culture. Research has further illustrated that the associations of acculturation with Latino/a depression and smoking is stronger for Latina women compared to Latino men, and Mexican Americans appear to be more strongly influenced by acculturation than individuals from other Latino/a subgroups (i.e., Cuba, Puerto Rica, and “Other Latino/as”) (e.g., Alegria et al. 2006, 2008; Bethel & Schenker, 2005; Vega & Sribney, 2008). Reasons for why acculturation may lead to increased depression and smoking are not fully understood, and it is similarly not clear why some groups are more influenced by acculturation than others. Researchers have turned their attention to experiences that accompany acculturation to identify pathways by which acculturation may lead to smoking and depression. Acculturation-related experiences identified in prior research include increased everyday discrimination, more frequent family conflict, loss in cultural values (e.g., familismo), and reduced family cohesion and closeness (e.g., Cook, Alegria, Lin, & Guo, 2009; Baer & Schmitz, 2006; Kam, Cleveland, & Hecht, 2010; Miranda, Estrada, & Firpo-Jimenez, 2008). Although extant scholarship has made vital contributions to Latino/a mental health and substance use research, it has also been limited as it has examined the influence of one or possibly two acculturation-related experiences on the mental health of U.S. Latino/as. In everyday

life Latino/as experience a range of acculturation-related experiences which may combine or relate to each other to increase or reduce depression and/or smoking risk. Moreover, prior research has treated gender as a proxy for everyday experiences, providing little insights into why women are more negatively influenced by acculturation than their male counterparts (Cole, 2009). The current dissertation project begins to address these gaps in the literature by developing and testing integrative models of Latino/a acculturation, depression, and cigarette smoking and by investigating which acculturation-related experiences vary by gender to differentially influence depression and smoking risk. Organized around two studies, this dissertation provides a more holistic understanding of Latino/a acculturation, depression, and cigarette smoking.

Study 1 took *a person-centered approach* to the study of Latino/a acculturation, smoking, and depression. It used k-means cluster analysis and identified *six distinct profiles of acculturation-related experiences* (i.e., everyday discrimination, family conflict, familismo, and family cohesion). It also investigated the associations of profile and Latino/a subgroup with depression and cigarette smoking. The results of the first dissertation study indicate that more Latina/o women than men experience problematic family lives, but both men *and* women are subject to these experiences. Also, more men than women experience elevated discrimination in the absence of difficulties in the family domain. With acculturation, more women than men experience increased family conflict (but men also experience family conflict with acculturation). Moreover, as Latinas continue to acculturate, they experience frequent everyday discrimination in addition to problematic family lives. For men, acculturation comes predominantly with elevated experiences of everyday discrimination and not necessarily problematic family

lives. Results further indicated that Latina women's risk for depression depended heavily on acculturation-related experiences that encompass both experiences with everyday discrimination and their families, while men's risk for depression depended more heavily on acculturation-related experiences characterized by frequent discriminatory behaviors against them. In regards to smoking, men and women's risk was linked with instances of both family conflict and everyday discrimination, but men's risk for current smoking was more strongly linked with acculturation-related experiences than women's risk for current smoking. Specifically, men's current smoking was connected with experiences of high discrimination and high family conflict in the absence of protective family factors.

Taken together, Study 1 results suggest that Latina/o women and men are subject to a range of acculturation-related experiences, which combine in diverse ways to influence their risk for depression and smoking. Although women may experience more problematic family lives compared to men as they acculturate to the dominant U.S. culture, and men may experience more everyday discrimination than women as a result of acculturation, both groups are negatively influenced by these experiences. Consequently, men and women can benefit from prevention and interventions that target stressful experiences in the home (family functioning) and the community (discrimination).

Study 2 took a *process-oriented approach* to investigate the pathways through which acculturation, enculturation, discrimination, family conflict, familismo, and family cohesion connect to Latino/a depression and smoking. Based on extant acculturation theory and empirical research, Study 2 developed the model depicted in Figure 1.1 and tested it with structural equation modeling. Results show that acculturation is accompanied by lower family closeness, while enculturation is associated with elevated

family closeness. Family closeness, in turn, relates to fewer encounters with family conflict and everyday discrimination. Both family conflict and discrimination connect with depression, and everyday discrimination links with current smoking. Study 2 also tested how these relationships varied by gender, and multi-group analysis showed that in general men and women have more similar than different experiences, with the exception of the link between family closeness and family conflict being stronger for Latina/o women than men. Overall, the result of Study 2 indicate that men and women experience discrimination, family conflict, and changes in family closeness as they *acculturate* and *enculturate*, and these experiences are in turn linked with depression and/or smoking. Compared to men, women may experience more frequent family conflict as a result of lost family closeness which may put them at greater risk for depression. Despite these gender differences, Study 2 indicates that men and women can benefit from preventions and interventions that promote positive family interactions and combat discrimination against Latino/as.

Taken together, findings from the two dissertation studies show that acculturation comes with a range of acculturation-related experiences that combine, covary, and relate to each other to influence Latino/a depression and/or smoking risk. Importantly, results indicate that men and women have similar *and* different acculturation-related experiences. Men and women experience changes in family closeness (familismo and family cohesion), family conflict, and everyday discrimination as they navigate acculturative and enculturative processes. Women's family functioning (and consequently their mental health) may be more affected by acculturation and enculturation than men's family functioning (and consequently their mental health), but

both men and women's risks for depression and smoking were influenced by these experiences. Thus, women and men can benefit from prevention and intervention efforts that combat discrimination against Latino/as, help Latino/as cope with everyday discrimination, *and* strengthen positive interpersonal relationships in the family domain.

Limitations

Several limitations pertaining to this dissertation project should be noted. First, the cross-sectional methodology of both studies does not allow us to temporally or causally link acculturation-related experiences to the development of major depression and cigarette smoking. Moreover, the cross-sectional design did not allow for the testing of hypotheses about changes in acculturation-related experiences and instances of smoking and depression over time, thereby, limiting the conclusions that can be drawn from the results of this dissertation project. It is possible that Latino/as who participated in the NLAAS experienced their first depressive disorder prior to immigration to the U.S. or prior to navigating the dominant U.S. cultural context. It is also possible that Latino/as in the U.S. experienced changes in family functioning and discrimination prior to immigration. This is why future studies should collect data at different time points to better understand how acculturation, family functioning, discrimination, smoking, and depression unfold over time for women and men. These studies should also carefully consider controlling for pre-existing conditions (i.e., smoking and depression) and experiences (i.e., discrimination, family closeness, family conflict) in statistical analyses. For example, when examining the association of acculturation at time one with depression at time two, researchers should control for existing depression at time one. This would allow researchers to more conclusively state that acculturation was linked

with increased/decreased depression as existing depression has been ruled out as an alternative explanation. In addition to designing longitudinal research designs and analyses, future research could benefit from following and surveying recent Latino/a immigrant adults and their families over time to see how their engagement with their Latino/a culture and U.S. culture changes with life in the U.S. This research design would provide insights into the experiences that existed prior to and after immigration or acculturation to the dominant U.S. culture (Dillon, De La Rosa, Sanchez, & Schwartz, 2011). It would also provide information about how family functioning and experiences of discrimination change or not change with life in the U.S. Although, the cross-sectional design of this dissertation project is a limitation, it should be noted that the majority of NLAAS participants, immigration or acculturation likely preceded the onset of MDD and the use of cigarettes. This is because 65% of the sample was either U.S. born ($n = 924$) or had immigrated to the U.S. before the age of 12 ($n = 365$), and depression and smoking typically came later (mean age of MDD onset = 25.35 years; mean age of smoking onset = 15.21 years). In addition, this dissertation project used not only lifetime measures but also past-year MDD and current smoking, to get a better sense of depression and smoking in the *recent* past, subsequent to immigration and/or acculturation.

In addition, all data were obtained via self-report. Participants may have underreported their symptoms of depression and smoking. Research has shown that Mexican Americans often underreport their smoking due to stigma and anti-smoking norms in some Latino/a countries (especially for women) (Perez-Stable, Marin, Marin, Brody, & Benowitz, 1990). Likewise, evidence suggests that many Latino/as do not report sadness and other symptoms of depression included in the DSM-IV as diagnostic

criteria for Major Depressive Disorder. Instead, Latino/as tend to report physical symptoms, problems in relationships, and experiences with the idiom of distress ‘nervios’ (i.e., nerves) when discussing their symptoms of depression (Berenzon-Gorn-Gorn, Ito-Sugiyama, & Vargas-Guadarramo, 2006; Espin, 1987; Salgado de Snyder, Dia-Jesus, Ojeda, 2000). Therefore, an important next step in research on Latino/a depression and smoking is the gathering of information from different sources so as to off-set this self-report bias or to develop diagnostic tools more sensitive to culture-specific expressions of distress. It would also be informative to incorporate measures of stigma about depression and smoking. This would allow researchers to investigate directly the impact of stigma on reports of smoking and depression or to control for these variables to rule them out as alternative explanations for why acculturation is linked with increased smoking and depression. It is possible that with acculturation Latino/as report more depression and more frequent smoking not because risk increased but because they experience changes in stigma-related attitudes and norms, allowing them to more freely report these behaviors.

Along similar lines, the integrative models in the two dissertation studies captured key socio-cultural variables relevant to Latino/a depression and smoking, but they did not account for other socio-cultural, cognitive, and biological factors linked with depression and/or smoking. For example, smoking norms and attitudes in some Latin American countries differ from those in the general U.S. population, with the U.S. having more permissive smoking attitudes and norms than some Latin American countries. Acculturating Latino/as can experience changes in their smoking-related attitudes and norms as a result of acculturation (Marin, Marin, Otero-Sabogal, Sabogal, & Perez-

Stable, 1990), and Latina women in particular may develop more pro-smoking attitudes with acculturation, because in traditional Latino/a culture it is more acceptable for men to smoke than it is for women. As a result of these gendered smoking norms in traditional Latino/a culture, women (compared to men) may experience greater changes from anti- to pro-smoking norms than men, and this in turn may increase their risk for smoking at higher degrees than men's risk (e.g., Bethel & Schenker, 2005). According to the theory of reasoned action, smoking norms and attitudes have direct implications on individual's intentions to smoke and actual smoking (e.g., McMillan, Higgins, & Connor, 2005). It, however, remains to be empirically tested whether changes in smoking-related cognitions explain the association of acculturation and smoking for U.S. Latino/a adults. Smoking and depression onset have also been linked with genetic and biological factors (e.g., Engel, 1980; Heath, Kirk, Meyer, & Martin, 1999; Li, 2003). Therefore, future research on Latino/a smoking should extend this dissertation's integrative socio-cultural models with additional socio-cultural, cognitive, genetic, and biological determinants of smoking and depression. This knowledge will further increase our understanding of the etiology of Latino/a smoking and depression.

Another limitation of this dissertation project relates to the measurement of acculturation, enculturation, and acculturation-related experiences (e.g., Lopez-Class, Castro, & Ramirez, 2011). Recent acculturation theory proposes that acculturation is multidimensional not only in terms of *acculturation* and *enculturation* but also in terms of the different components that are assumed to change (Schwartz, Unger, Zamboanga, & Szapocznik, 2010). Acculturation is thought to include changes in orientations towards *American practices* (e.g., English language acquisition, participation in American cultural

practices, and consuming American media and foods), *American cultural values* (e.g., individualism and independence), and *American ethnic identifications* (e.g., identifying as American), while enculturation is thought to entail alterations in orientations towards *Latino/a practices* (e.g., Spanish language acquisition, participation in Latino/a cultural practices, and 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, Mexican, Cuban, and so on).

According to this model, U.S. Latino/as may experience changes in one, two, or all of these domains at similar or different rates. For example, Latino/as may experience changes in their orientations towards U.S. practices but not orientations towards U.S. values, or they may experience changes in their orientation towards U.S. values but not Hispanic values, depending on the larger socio-cultural context of U.S. Latino/a groups and individuals. Socio-cultural contexts that can influence the various acculturative and enculturative domains include context of reception, experiences of everyday discrimination, residence in ethnic or non-ethnic enclaves, socio-economic status, connections with country of origin after immigration or after acculturation begins, exposure to U.S. culture prior to immigration, socio-economic status, and education among others (Lopez-Class et al., 2011; Schwartz et al., 2010).

The NLAAS, which was designed and implemented prior to the emergence of new theoretical frameworks of multidimensional acculturation, relied on measures of acculturation that tapped into U.S. and Latino/a practices (i.e, English and Spanish proficiency), but not orientations toward U.S. *and* Hispanic cultural values and identifications. The inclusion of the various domains of *acculturation and enculturation*

(i.e., American and Hispanic practices, values, and identifications) that can change with acculturation/enculturation in future research would be an important contribution. These models would allow for the identification of the specific acculturation and enculturation domains that are linked with family functioning, discrimination, depression and smoking risk, thereby providing more specific insights into where to best intervene to reduce or prevent major depression and cigarette smoking among acculturating U.S. Latino/as.

Another measurement-related limitation of the NLAAS relates to the assessment of everyday discrimination. Although the everyday discrimination measure used in the NLAAS is widely used across different ethnic and racial groups, including U.S. Latino/as, it did not specifically instruct participants to report on discriminatory experiences based on their ethnicity (Alegria et al., 2004). So, researchers have to assume that NLAAS participants attributed instances of experienced discrimination to their ethnicity and ethnic minority status. Latino/as can experience discrimination based on other factors such as class, gender, sexual orientation, skin color, immigrant status, accent, and a general perception of Latino/as as being 'undocumented.' Consequently, it would be helpful to include more specific assessments of the type of discrimination Latino/as experience to better understand the role of ethnic (and other) everyday discrimination among U.S. Latino/as. It is also not clear whether NLAAS participants felt discriminated against by non-Latino/a whites, other Latino/a individuals, or other immigrant or ethnic minority groups. U.S. Latino/as can experience discrimination from a variety of sources (e.g., one Latino/a subgroup may discriminate against another, non-immigrant Latino/as may discriminate against immigrants, Latina women may experience discrimination based on their gender by Latino men and other Latina women, and so on), and these

differences in potential sources of discrimination against Latino/as warrant further investigation.

Future research could also be strengthened by including other Latino/a cultural values relevant to the everyday lives and mental health of U.S. Latino/as (Lopez-Class et al., 2011). The NLAAS assessed the cultural value of *familismo* but did not ask about other Latino/a cultural values thought to play important roles in Latino/a mental health and substance use. These may represent alternative or additional pathways through which acculturation/enculturation may be linked with more or less smoking and depression risk. These Latino/a cultural values include *respeto*, *marianismo*, *machismo*, *fatalismo*, *simpatia*, and *personalismo* and serve to promote interdependence and harmony among family and other interpersonal relationships (e.g., Azmitia and Brown, 2002; Cauce & Domenech-Rodriguez, 2002; Lopez-Class et al., 2011), performing important roles in Latino/as' everyday lives. Thus, future research could be extended by asking Latino/as about the role of Latino/a cultural values in their lives, other than the value of *familismo*.

Strengths

Despite the above limitations, the current dissertation projects makes important contributions to the study of Latino/a acculturation, depression, and smoking. First, it is based on a large nationally representative sample of English and Spanish-speaking U.S. Latino/as. The NLAAS is one of the first national household surveys that did not exclude non-English speaking Latino/as, thereby providing a more representative sample of the true U.S. Latino/a population. Moreover, the NLAAS used a multi-stage area probability sampling strategy which (with the use of the necessary and correct weighting) ensures that findings generalize to the general U.S. Latino/a population (Heeringa et al., 2004).

All of the analyses conducted as part of this dissertation project included the correct weighting and procedures to account for the complex sampling strategy of the NLAAS, and as such all findings generalize to the general U.S. Latino/a population.

Second, this dissertation builds on prior scholarship and research that has begun to identify the experiences that come with life in the U.S. for many Latino/as. Its focus on the everyday experiences that accompany acculturation helps to explain why acculturation often links with increased smoking and depression risk. Importantly, the two dissertation studies integrated prior research and theory on acculturation-related experiences into holistic frameworks. This is a novel and important contribution to the literature on Latino/a acculturation and mental health. It is novel because prior published empirical studies on Latino/a acculturation, smoking, and depression have not integrated extant research into unified frameworks, and it is important because in everyday life acculturation-related experiences (i.e., discrimination, family conflict, familismo, and family cohesion) influence each other, combine, and co-occur to influence risk for depression and smoking. So, the holistic and integrated frameworks developed and tested as part of this dissertation provide a more *real world* understanding of Latino/a acculturation, depression, and smoking by examining how in everyday life acculturation-related experiences combine and relate to each other to influence depression and smoking risk. Acculturation researchers have begun to argue for real world approaches to the study of Latino/a acculturation and well-being (Lopez-Class et al., 2011), and this dissertation project is one of the first empirical studies that attempts to make important strides in this direction.

Again, Study 1 identified profiles of acculturation-related experiences and examined how profile groups varied by depression and smoking risk, and Study 2 developed and tested a process-oriented model of acculturation, depression, and smoking. Understanding how experiences combine to create an array of profiles (Study 1) has highlighted the diversity of the U.S. Latino/a population, and it has provided insights into which profile groups are at greater risk for depression and smoking. Thus, Study 1 has provided information on specific *groups* that can be targeted for future prevention and/or intervention research. Study 2 has examined the process by which acculturation may lead to smoking and depression, which pinpoints specific *processes* than can be targeted to prevent or treat depression and smoking in the everyday life of U.S. Latino/as. Both studies have provided information that can inform the development of smoking cessation programs tailored to the needs of U.S. Latino/as.

A third strength is that the current dissertation project focused on not only MDD but also smoking. In doing so, it identified profile groups at risk for depression and/or smoking (Study 1), and it also identified pathways to depression and/or smoking (Study 2). In other words, the current study found both similar and distinct ways to prevent these two conditions. This is important because depression and smoking frequently co-occur in U.S. Latino/as (Escobedo, Kich, & Anda, 1996), but we do not know why that is.

Lastly and importantly, this dissertation project has brought a gendered lens to the study of Latino/a acculturation, depression, and smoking. Although research has for some time revealed that Latina women are more negatively influenced by acculturation than Latino men, few studies (if any at all) have utilized empirical data to explain why

this might be (e.g. Bethel & Schenker, 2005; Vega & Sribney, 2008). Throughout, this dissertation examined if and how acculturation-related experiences vary by gender, and it revealed that acculturation-related experiences unfold similarly *and* differently for Latina women and Latino men. Men and women experience problems in the family domain as a result of acculturation, and both experience frequent discrimination. So, men and women can benefit from interventions and preventions that not only foster family harmony/closeness but also combat everyday discrimination against Latino/as or help Latino/as cope with discriminatory experiences. Although, for women acculturation may bring more problems in the family domain, men and women were both negatively influenced by family disharmony. All in all, results from this dissertation project can inform more gender- and culturally sensitive prevention and intervention strategies aimed at reducing MDD and smoking among the largest and fastest growing ethnic minority group in the U.S. (U.S. Census Bureau, 2010).

Summary

U.S. Latino/as are at risk for MDD and cigarette smoking, and this risk increases with acculturation, especially for Latina women. Reasons why these associations exist are not completely understood. To address this gap in the literature, this dissertation project has developed and tested integrative models of acculturation-related experiences. It has examined how a diverse range of acculturation-related experiences combine and covary to influence smoking and depression risk, and it has investigated how these experiences unfold similarly and differently for Latino/a men and women. Knowledge gained from this dissertation project can inform the development of prevention and

intervention programs aimed at reducing depression and smoking among U.S. Latino/a men and women.

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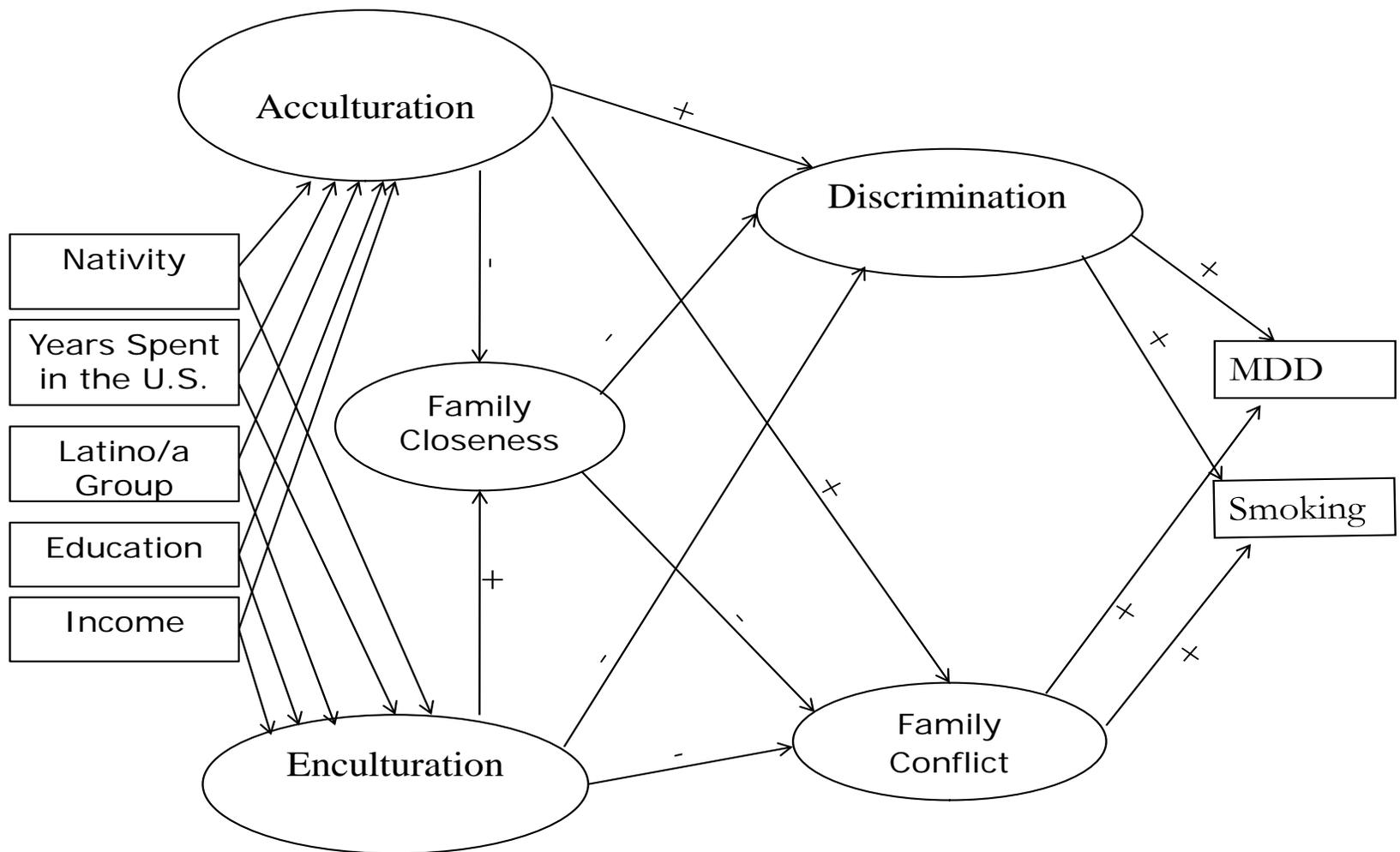


Figure 4.1. Initial structural model, showing all expected relationships and their predicted valence.