HOW DID WE GET HERE? INTERRELATIONS OF SUBSTANCE USE, SEGMENTED ASSIMILATION, AND DIMENSIONS OF EMERGING ADULTHOOD AMONG 1ST AND 2ND GENERATION LATINX EMERGING ADULTS

BY

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DISSERTATION

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ABSTRACT

Objective: This project focuses on intersections of segmented assimilation, dimensions of emerging adulthood, stress coping, and substance use outcomes with 1st and 2nd generation Latinx emerging adults (EAs) in the United States. This project seeks to answer four primary research questions: 1) What are the associations between intergenerational patterns of acculturation and substance use with Latinx EAs, 2) What are the associations between intergenerational patterns of acculturation, developmental strain, and stress coping with Latinx EAs 3) What are the indirect/mediating effects of developmental strain during emerging adulthood and stress coping on substance use, and 4) To what extent do these mediating variables account for the association between segmented assimilation and substance use, and do they fully or partially mediate the relationship between segmented assimilation and substance use with Latinx EAs?

Background: Segmented assimilation theory posits divergent avenues are available through which immigrants and their families assimilate into mainstream culture. These avenues, in turn, lead to various outcomes (e.g. stress) within immigrant minority populations. Emerging adulthood theory suggests 18-29 year olds experience unique developmental changes. Further, most alcohol and illicit substance use occurs during this period. Past research examines—separately—these theories in social contexts. No current research examines associations between segmented assimilation and substance use outcomes with Latinx emerging adults.

Methods: This project sampled participants (N=537) using Amazon’s Mechanical Turk (MTurk) program. The current research study employed a dual-mediation structural equation model (SEM) to examine differential effects of intergenerational patterns of acculturation on substance
use outcomes with Latinx EAs, as well as indirect effects of said assimilation patterns on substance use outcomes via the potential mediating variables developmental strain and stress coping. Participant responses to various acculturation and language questions determined categorization to one of three patterns of intergenerational acculturation: dissonant, consonant, or selective acculturation. Dissonant acculturation occurs, generally, when parents/primary caregivers and children acculturate to the host society at significantly different rates. Consonant acculturation occurs when parents/primary caregivers and children acculturate to the host society at roughly the same pace. Finally, selective acculturation is effectively a pattern of well-integrated biculturalism, with both parents/primary caregivers and children maintaining their culture-heritage while simultaneously adopting pieces of the host culture.

**Results:** Participants assigned to the dissonant acculturation group, on average, self-reported more severe substance use issues across multiple indicators compared to those assigned to the consonant or selective acculturation groups. Those in the dissonant acculturation group, on average, self-reported higher scores on measures of developmental strain and stress coping as well. Effects of developmental strain and stress coping varied across measures of substance use and between patterns of intergenerational acculturation, although generally there emerged positive effects of both stress coping and developmental strain on substance use. Developmental strain and stress coping mediated the total effects of acculturation profile on substance use, although effect strength varied between acculturation profiles and substance use indicators. Overall, lower levels of developmental strain and stress coping correlated with lower levels of substance use, across acculturation profiles.
Discussion: This study examined associations between segmented assimilation and substance use. In addition, this project tested the potential mediating effects of stress coping and developmental strain with a large sample of Latinx emerging adults, a vastly understudied population in substance use research. More broadly, this project is a step towards blending segmented assimilation and emerging adulthood theories, with a long-term goal being to adapt existing EA frameworks for Latinx EAs specifically. Findings from this study could inform the development of more culturally responsive, motivational substance use interventions for Latinx EAs and their families who struggle with substance use.
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To All Families: Past, Present, & Future
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CHAPTER 1: INTRODUCTION

Approximately 18% of the total U.S. population is comprised of persons of Latin American origin or descent (Flores, 2017). Additionally, experts expect this proportion to increase to 30% by 2050 (Juckett, 2013). Of the almost 59 million Latinx individuals currently residing in the United States, over 70% are either 1st or 2nd generation (Pew Research Center, 2017). In other words, seven out of every 10 people in the United States who identify as Latinx came to the United States from another country or were born here to at least one foreign-born parent. Further, population researchers expect a growing number of Latinx individuals to identify as 2nd generation and beyond in the coming years (Tran, 2016). Of the current total Latinx population, over 22% are between the ages of 18 and 25 (Digest of Education Statistics, 2017). Ultimately, this equates to over 9 million 1st or 2nd generation Latinx EAs in the United States.

With this population boom, there is recent and sustained interest in the holistic health of these young adults, and scholars frequently use Arnett’s (2000) Emerging Adulthood (EA) theory to guide such research. According to EA theory, individuals between the ages of 18-29 experience a unique developmental period distinct from adolescence and adulthood. Individuals in this age group, in general, experience greater independence from traditional social roles and from societally normative expectations (2000). According to Arnett, “Emerging adulthood is a time of life when many different directions remain possible, when little about the future has been decided for certain, when the scope of independent exploration of life’s possibilities is greater for most people than it will be at any other period of the life course” (2000, p. 469). With the exploration often comes experimentation, and EAs have higher rates of substance use and substance use disorders for almost all classes of drugs and compared to all other age demographics (Substance Abuse and Mental Health Services Administration [SAMHSA], 2018).
Until very recently, research regarding substance use with emerging adults focused predominantly on white, non-Latinx college students, who are neither representative of Latinx EA populations or the United States’ EA population in general (Gomez, Miranda, & Polanco, 2011; Unger, Schwartz, Huh, Soto, & Baezconde-Garbanati, 2014). Over the past twenty years, Latinx individuals account for half of U.S. population growth, and currently this heterogeneous group comprises the largest minority ethnic group in the nation (Pulvers et al., 2018). Further, given research suggesting the U.S. Latinx population will represent over 30% of the total U.S. population by 2050 (Juckett, 2013), it is imperative to understand the complex mechanisms via which these individuals adapt to their new environments.

Acculturation is a complex process via which immigrants and their families adapt to new cultures, values, and behavioral norms, which in turn can have a changing effect on the individual’s own beliefs, behaviors, and values (Berry, 2006; Berry, Phinney, Sam & Vedder, 2006; Farver, Narang, & Bhadha, 2002). Two primary components of acculturation are the extent to which a person becomes involved in the host culture, and the extent to which a person maintains involvement in their culture of origin (Berry & Padilla, 1980). Studies with Latinx samples in the United States have provided evidence of associations between acculturation and psychological outcomes such as depression (Torres, 2010), maladjustment (Martinez, Schwartz, Thier, & McClure, 2018; Rogler, Cortes, & Malgady, 1991), discrimination (Cook, Alegria, Lin, & Guo, 2009), and acculturative stress (Berry, 2006; Falconier, Huerta, & Hendrickson, 2016). Fewer studies examine acculturation in the context of stressors (e.g. psychological factors) or external factors (e.g. family cohesion) which may play an important role in overall acculturation processes (Yoon, Langrehr, & Ong, 2011) and the development of substance use problems (Perreira et al., 2019). Segmented assimilation theory—defining assimilation as a segmented
process where outcomes vary between immigrant minorities—is one prominent theory in acculturation and assimilation research.

In addition to challenges associated with immigration and acculturation, past research indicates the transition from late adolescence to emerging adulthood is a crucial time developmentally; one filled with great opportunities and even greater risks (Castro, Marsiglia, Kulis, & Kellison, 2010). This stage of development, compounded by additional obstacles presented by acculturative processes, may present unique cultural impediments for Latinx EAs. Some theoretical models attempt to explain patterns of acculturation beyond simple, linear acculturation, but acculturation research literature rarely tests these models empirically (Sauceda, Wiebe, Chan, Kutner, & Simoni, 2018). Even fewer empirically examine substance use outcomes with Latinx EAs (18-29 year olds; Arnett, 2014), who have higher rates of substance use and substance use diagnoses on average than Latinx adolescents and older adults, as well as EAs from some other racial/ethnic groups (SAMHSA, 2019).

This dissertation project explores intersections of emerging adulthood, intergenerational patterns of acculturation, and substance use among Latinx EAs in the United States. The literature review portion of this project will address three general questions associated with the larger dissertation. Firstly, what are the dimensions of emerging adulthood and to what extent may they be associated with substance use within Latinx EA populations? Second, how may intergenerational patterns of acculturation, based off segmented assimilation theory (Portes & Zhou, 1993), be associated with Latinx EA substance use? And finally, what current research focuses on substance use outcomes with EA Latinx samples, and how does that research contribute to epidemiological understandings of substance use issues with Latinx EAs. As part of
these questions, this project explores EA substance use within the context of U.S. immigration policy. Finally, this study investigates Latinx EA substance use treatment and outcomes, as well as considerations for further research and reasons why research with Latinx EA populations in the United States deserves more attention. The literature review segues into a detailed account of my research methods, followed by study results, and culminates with an integrative discussion of findings and implications for future research and social work practice. An overarching goal of this project is to inform culturally responsive substance use interventions, social work practices, and public policy to enhance interdisciplinary understandings of complex cultural contexts with the ultimate aim of reducing rates of substance use within Latinx EA populations. Presently, no studies examine associations between Latinx EA substance use, dimensions of emerging adulthood, and patterns of intergenerational acculturation.
CHAPTER 2: LITERATURE REVIEW

A Brief History of Substance Use in the United States

Diagnosis

*The Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; DSM-V) stipulates substance use disorders encompass 10 partially distinct categories of drugs (American Psychiatric Association, 2013). The classes include alcohol, caffeine, cannabis, hallucinogens, inhalants, opioids, sedatives, simulants, and tobacco. The paramount feature of substance use disorders is a collection of physiological, cognitive, and behavioral symptoms through which an individual persists in using a given substance despite significant problems relating to the substance use. Examples of these issues include taking a substance for a longer period of time than originally intended, experiencing cravings or strong desires to use a particular substance, and continuing substance use despite recurring social or interpersonal problems exacerbated or caused by substance use (American Psychiatric Association, 2013). These criteria are not necessarily culturally specific—although they follow doctrines and processes of western medicine—and clinicians may apply them to populations across countries and cultures. Further, field-testing of the DSM typically includes invariance evaluations between racial/ethnic groups to determine any issues with differential item or diagnostic functioning potentially attributable to cultural differences (Lewis-Fernandez et al., 2017).

Substance Use Policy

In the United States, most examples of drug policy deal with the commercial regulation of various substances. The first major piece of substance use related legislation in the United States was the 1906 Pure Food and Drug Act, which forbade interstate commerce in misbranded and contaminated food and drugs. Afterwards, the Harrison Act of 1914 introduced taxes and a registration system for individuals who produced, manufactured, and/or dispensed specific
substances like cocaine and opium (Hart & Ksir, 2018). These early policies serve as the foundation upon which the current U.S. system is built, which aims to protect consumers from misleading advertising and to provide education regarding which substances are safe for consumption.

Historically, substance use policies in the United States have focused on the regulation of legal drugs and the criminalization of others, and often targeted various racial/ethnic populations. Since before the Civil War the United States controlled the supply and use of substances via legislation and treaties with other countries. The earliest examples of these introduced penalties for mislabeling drugs and for selling substances that may be harmful to people’s health (Hart & Ksir, 2018). Still others included an international treaty between the U.S. and China, which banned the shipment of opium between the two nations (Hart & Ksir, 2018). This treaty bolstered the view that other countries and other groups were responsible for substance use issues in the United States, a view that has spread throughout our history and contributed to the role of racially based associations in the formation of public policy (Hart & Ksir, 2018). In particular, the media and public associated opium use with mostly Chinese railroad workers, cocaine with predominately black communities and musicians, and cannabis (which was rebranded as marijuana) with mainly Mexican migrant workers in the U.S. Southwest (Hart & Ksir, 2018).

More recently, the creation of drug schedules via the Comprehensive Drug Abuse Prevention and Control Act of 1970 and the ensuing “war on drugs” has resulted in a vast system of incarcerations for non-violent offenders (Hart & Ksir, 2018). Additionally, a majority of people imprisoned for non-violent crimes are racial/ethnic minorities from lower socioeconomic status (SES) backgrounds, who consequently experience the disproportionate brunt of these
policies (Pew Research Center, 2018; Rauby & Kopf, 2015). For example, in 2018 Black and Latinx populations made up around 28% of the United States populace, but accounted for almost 66% of those in U.S. prisons (Pew Research Center, 2018). Regarding SES, in 2014 the median income of individuals ages 27-42 in prison prior to incarceration was $19,185, which was over 40% less than their non-incarcerated peers (Rauby & Kopf, 2015). Furthermore, since the passage of the Fair Sentencing Act in 2010, Latinx individuals have accounted for 56% of powder cocaine convictions and upwards of 77% of annual federal cannabis sentences, despite comprising around 18% of the total U.S. population (Bjerk, 2017; Nelson, 2017; U.S. Census Bureau, 2017). Despite these recent rates of incarceration, however, rates of illicit drug use have not increased or decreased significantly in the past 4 years (SAMHSA, 2018). Large percentages of people still turn to substance use as a means to cope with daily life and nowhere is substance use more prevalent than with emerging adults.

**Emerging Adult Substance Use**

**Epidemiology**

To contextualize Latinx EA substance use in the grand scheme of EA substance use in general, one should first consider the epidemiological underpinnings of EA substance use. Emerging adults are different from both adults and adolescents due to various dimensions to be discussed later, and rates of EA substance use reflect those differences. Emerging adulthood is recognized as a critical time for substance use prevention and intervention, as EAs are generally at greater risk for substance use related issues relative to their younger and older peers (Chi et al., 2014; National Institute on Alcohol Abuse and Alcoholism, 2006). Regarding alcohol consumption, EAs aged 18-25 had higher rates of past month alcohol use (55.1%), binge alcohol use (34.9%), and heavy alcohol use (9.0%) compared to adolescents and older adults (Center for Behavioral Statistics and Quality, 2019). Rates of EA illicit substance use are concerning as well,
with 22.1% of EAs reporting current (i.e. past month) cannabis use, and 24.2% reporting any illicit substance use in the past month (Center for Behavioral Statistics and Quality, 2019). For context, 10.1% of individuals 26 and older reported past month illicit substance use, and 8.6% reported past month cannabis use (Center for Behavioral Statistics and Quality, 2019).

National surveys indicate EAs in the United States have higher rates of substance use disorders than any other demographic as well (Center for Behavioral Statistics and Quality, 2019). Several domestic epidemiological studies support these findings. For example, utilizing a nationally representative sample of emerging adults (n = 19,312), data from the National Survey on Drug Use and Health (NSDUH) indicated 15.8% of emerging adults met diagnostic criteria for a substance use disorder (Adams, Knopf, & Park, 2014). Furthermore, the National Institute of Mental Health (NIMH) Epidemiological Catchment Area study found emerging adults were 2-3 times more likely to be dependent on a substance (Mason & Luckey, 2003). In addition, the NIMH National Comorbidity Survey found emerging adults were 3.6 times more likely to receive a substance use disorder diagnosis than the rest of the population (Mason & Luckey, 2003). Current substance use data (SAMHSA, 2019) corroborate this finding, with a greater proportion of EAs (15%) meeting past year diagnostic criteria for substance use disorders than adolescents (3.7%) and older adults (6.6%).

**Etiology**

Evidence suggests EAs use substances at higher rates than adolescents and younger adults for a variety of reasons. In addition, Latinx EAs may be more at-risk for substance use related problems compared to other age groups (Cherpitel et al., 2015). Arnett (2005) proposed multiple dimensions unique to this stage of life that implicitly predispose emerging adults to more risk-taking behaviors, including experimenting with substance use. White et al. (2008) implicated
residential and school status as two of the most important factors that foster change during emerging adulthood, while still others attribute changes in alcohol use to the stereotypical college experience (Barry & Nelson, 2005; Dowdall & Wechsler, 2002; Presley, Meilman, & Leichliter, 2002). Additional studies validate these findings, suggesting residential and school status are strong predictors of substance use outcomes during emerging adulthood (White, Fleming, Kim, Catalano, & McMorris, 2008). Other research reports various reasons for substance use, from a desire to conform to a perceived predominant culture or context, to wanting to feel more confident (Boys, Marsden, & Strang, 2001). In other words, most EAs report using substances for social and enhancement motives, while relatively few report using substances as a means to cope with difficult situations (Kuntsche, Knibbe, Gmel, & Engels, 2005). Further, previous studies suggest trajectories in EA alcohol consumption specifically are influenced by a number of factors, including: access to licensed premises (e.g. bars, clubs, taverns) at age 18, access to alcohol at age 15, self-reported liking of alcohol advertisements, parental alcohol consumption, and age of onset of regular alcohol consumption (Casswell, Pledger, & Pratap, 2002).

Other research suggests a large reason for these increased rates of substance-use disorders and risky drinking behaviors among EAs in the United States is the pathway to and through college taken by many individuals (Oesterle, Hawkins, & Hill, 2011). This same research, however, indicated substance-use among postsecondary educated individuals subsided through the progression of the life course, while other individuals, especially men with little postsecondary education exhibited the highest rates of substance use disorders over time (Oesterle, Hawkins, & Hill, 2011). Still other researchers suggest initial age of enrollment in college is a stronger predictor than any post-secondary enrollment in general of prolonged substance use risk. According to Thompson, Stockwell, Leadbeater, and Homel (2015), younger college students tend to increase
their substance use more than older students following enrollment. While findings comparing overall alcohol use with college vs. non-college attending EAs remain ambiguous in some ways, college students on average engage in higher-risk drinking behaviors and experience more negative alcohol use consequences compared to their non-college attending peers (Dotson, Dunn, & Bowers, 2015). In other words, those with college experience may be at greater risk for substance use initially but improve over time, while the opposite trend may be more consistent with those without postsecondary experience. Considering other drugs, college students on average are more likely to misuse prescription stimulants (Ford & Pomykacz, 2016; McCabe, Teter, Boyd, Wilens, & Schepis, 2018; Odani et al., 2019; Schepis, Teter, & McCabe, 2018), while non-college attending EAs are more likely to use other classes of substances—including cannabis and tobacco (McCabe et al., 2018). Left unconstrained, these risky substance use behaviors can deepen in severity to the point they require professional intervention.

**Substance Use Treatment**

Emerging adults in the United States—despite having higher rates of substance use disorders and risky substance use behaviors—do not engage in treatment more often than older adults (Center for Behavioral Statistics and Quality, 2019). Moreover, financial barriers do not appear to play much of a role in terms of accessing treatment. According to SAMHSA’s Center for Behavioral Health Statistics and Quality (2016), only 1.9% of EAs in the United States without health insurance received substance use treatment during the past year. The numbers for insured EAs are only slightly higher, with 2.3% receiving substance use treatment during the past year (2015). Adams et al. (2014), in their nationally representative sample of emerging adults (n = 19,312), found 11% of those who had been diagnosed with a substance use disorder received related treatment. This population’s increased vulnerability and lack of access to age-appropriate
treatments compared to other age groups is supported by prior studies as well (Mulye et al., 2009). Furthermore, contemporary research suggests Latinx individuals in the United States may be at a significant disadvantage when it comes to insurance coverage, and thus treatment access (Alcalá, Chen, Langellier, Roby, & Ortega, 2017; Sanchez, Vargas, Juarez, Gomez-Aguinaga, & Pedraza, 2017). This may be due to the Patient Protection and Affordable Care Act’s (PPACA) exclusion of undocumented migrants from a majority of its provisions (Sanchez et al., 2017).

Emerging adults represent 34 percent of treatment admissions in the United States (SAMHSA, 2014). While this may seem positive at first glance, EA treatment outcomes are typically worse than older adult (Davis, Bergman, Smith, & Kelly, 2017) or adolescent outcomes (Smith, Godley, Godley, & Dennis, 2011). A majority of research regarding substance use interventions with EAs comes from college samples, which are comprised of predominantly Caucasian individuals from higher SES backgrounds (Arnett, 2016; Schwartz, 2016). Many individuals who meet the diagnostic criteria for substance use disorders do not fit that description. For example, an estimated 59% of EAs in the U.S.—or about 18.3 million EAs—are not college students (Davis, Smith, & Briley, 2017). This same systematic review found treatment studies with more college students had, on average, better outcomes than treatment studies with more non-college students (Davis et al., 2017). On average, these individuals with no college experience report lower rates of high school graduation (30 percent) as well as higher rates of unemployment (78 percent; SAMHSA, 2014). This finding is telling, as assimilation researchers associate the lack of educational and occupational success with more negative health and socioeconomic outcomes for Latinx EAs (Portes, Fernández-Kelly, & Haller, 2009).

According to the National Survey on Drug Use and Health (NSDUH; SAMHSA, 2019), around 8.1 million emerging adults in the United States needed substance use treatment in 2018.
Of those individuals, less than 7% received substance use treatment in the past year (SAMHSA, 2019). Again, estimates suggest anywhere from 4.5% to 11% of emerging adults in the United States receive substance use treatment (Adams et al., 2014, SAMHSA 2016, 2019). Possibly exacerbating this under-representation of emerging adults in substance use treatment is the lack of tailored, developmentally appropriate prevention and intervention strategies. Many advanced clinical trials have been conducted with adolescents in the past decade (Becker & Curry, 2008; Becker, Jones, Hernandez, Graves, & Spirito, 2016; Kaminer, Ohannessian, & Burke, 2017; Waldron & Turner, 2008), but similar large-scale approaches to prevention and intervention have largely not extended to EAs (Arnett, 2000; Davis et al., 2017; Smith, Godley, Godley, & Dennis, 2011).

Although little research explicitly defines how to improve treatments and treatment outcomes for emerging adults, we have a plethora of statistical evidence suggesting a need to do so (SAMHSA, 2014, 2018, 2019). Specifically, there have been numerous studies showing EAs have inferior treatment outcomes when compared directly to older adults or adolescents (Satre, Mertens, Arean, & Weisner, 2003; Satre et al., 2004). One such study found 14% fewer emerging adults receiving the Adolescent Community Reinforcement Approach were abstinent, in early remission, and living in the community (vs. prison or another controlled environment) at follow-up (Smith, Godley, Godley, & Dennis, 2011) compared to adolescents. Other studies indicated emerging adults had poorer substance use related outcomes compared to older adults at both one and five years following treatment entry (Satre et al., 2003, 2004). Compared to older adults (59%), fewer emerging adults (50%) were abstinent at one year (Satre et al., 2003). The researchers replicated a majority of these findings at five-year follow-up, with 40% of younger adults and 52% of older adults achieving abstinence from substances (Satre et al., 2004). Finally, one large
randomized study of drug courts suggested emerging adult treatment outcomes were worse than those of older adults. In this sample, younger individuals in drug courts used drugs on more days per month relative to older individuals at follow-up (Rossman, Roman, Zweig, Rempel, & Lindquist, 2011). Considering these worse treatment outcomes, some researchers cite emerging adulthood theory in an effort to enhance understandings of both antecedents and outcomes relating to substance use with EAs.

**Latinx Substance Use & Treatment**

Overall, Latinx individuals engage in more frequent heavy episodic drinking and experience adverse health and social consequences of alcohol use more frequently than other racial/ethnic groups (Field et al., 2010). At younger ages—according to Monitoring the Future data—Latinx adolescents reported higher rates of alcohol and cannabis use than Caucasian or Black adolescents (Zamboanga et al., 2009). Additionally, Latinx EAs use alcohol and some illicit substances at greater rates than EAs from other racial categories (SAMHSA, 2018). For example, 5.1% of Latinx EAs reported past year cocaine use, compared to only 2.5% of Asian EAs and 2.0% of Black or African-America EAs (SAMHSA, 2018). The prevalence of lifetime cocaine, cannabis, tobacco, inhalant, and alcohol use are significantly higher with Latinx youth compared to other racial/ethnic groups (Kann et al., 2018). Additionally, on average Latinx youth report higher levels of illicit substance use, especially cannabis, compared to both Caucasian and African American youth (Johnston, O’Malley, Miech, Bachman, & Schulenberg, 2017).

In conjunction with some riskier substance use behaviors, Latinx individuals in the United States underutilize existing substance use treatments and have poorer responses to treatments compared to other ethnic populations (Fish, Maier, & Priest, 2015). Compared to
U.S.-born Caucasians, Latinx individuals are less likely to seek out substance use treatment, let alone complete it (SAMHSA, 2019; Guerrero, Marsh, Khachikian, Amaro, & Vega, 2013). These lower rates of treatment completion may be due to shorter stays in substance use treatment as well as lower levels of treatment satisfaction overall (Guerrero et al., 2013). Considering the chronic stressors associated with immigration and renegotiations of self and place that many immigrants and their children experience (Cano et al., 2017), treatment providers could be helpful allies in combating the damaging effects of substance use on Latinx individuals and their families.

Prior research with Latinx youth suggests higher levels of acculturative stress are associated with poorer substance use outcomes, such as earlier onset of alcohol and tobacco use (Perreira et al., 2019). Further, younger immigrants often experience these immigration-related stressors most strongly (Li & Wen, 2015). The processes of social “othering” (Viruell-Fuentes, 2007, p. 1524), “cumulative vulnerabilities” (Quesada, 2012, p. 895), and identity reorganization can lead to externalizing behaviors including excessive alcohol use and experimentation with other substances (Gonzales, Suárez-Orozco, & Dedios-Sanguineti, 2013). Prior research reveals correlations between low socioeconomic position and multiple negative health outcomes, including substance use (Phelan, Link, & Tehranifar, 2010). Furthermore, lower socioeconomic position is significantly and negatively correlated with social isolation (Phelan et al., 2010), which can lead to the development of risky alcohol-use behaviors and substance-use disorders as well (Castañeda et al., 2019; Zemore et al., 2016). All these factors—combined with risks inherent to emerging adulthood—place some Latinx EAs at even greater risk for substance use issues and in even greater need of accessible and appropriate treatments.
Despite growing concerns over health disparities between ethnic subgroups in the United States, research evidence focusing on substance use treatments within Latinx populations remains limited (Field, Cochran, & Caetano, 2013; Marsiglia et al., 2019; Serafini, Wendt, Ornelas, Doyle, & Donovan., 2017). Research evidence with Latinx EAs is even scarcer (Bernstein et al., 2017; Cherpitel et al., 2016). Again, mounting evidence suggests Latinx individuals experience greater substance use related problems (Lee et al., 2016) and more barriers to accessing and engaging in traditional substance use treatment services (Guerrero, Marsh, Khachikian, Amaro, & Vega, 2013; Marsh, Cao, Guerrero, & Shin, 2009). According to SAMHSA (2018), 15.5% of emerging adults ages 18-25 demonstrated a need for substance use treatment in the past year, and in 2018 over one million Latinx EAs met past year diagnostic criteria for an alcohol use disorder (Center for Behavioral Statistics and Quality, 2019). Of those, fewer than 8% received alcohol use treatment, which is lower than receipt of treatment estimates for emerging adults overall (10.3%) and Caucasian EAs (9.6%) from that same year (Center for Behavioral Statistics and Quality, 2019). These numbers, along with other statistics citing higher propensities towards risky drinking behaviors and levels of adverse consequences resulting from substance use (Caetano, 2003; Fish, Maier, & Priest, 2015), demonstrate a need for more substance use research with Latinx EAs.

(Tailored) Interventions for Latinx Substance Use

Research literature is relatively rife with studies targeting Latinx populations with culturally and developmentally tailored prevention and intervention strategies. For example, Familias Unidas is a family-centered intervention program targeting risky behaviors in Latinx adolescents (Coatsworth, Pantin, & Szapocznik, 2002). While not entirely focused on substance use but rather risky behaviors more broadly (e.g. conduct problems, sexual behaviors, and
substance use), *Familias Unidas* employs an eco-developmental approach in order to understand adolescent’s behaviors within unique socio-ecological contexts (Szapocznik & Coatsworth, 1999). Central to these contexts, the authors argue, are ethnic and cultural themes, empowerment principles, and ecological-developmental factors (Szapocznik & Coatsworth, 1999). From an eco-developmental perspective then, these variables highlight adolescent’s tendencies towards or protections from substance use, as well as interrelations between themselves. Limitations notwithstanding, *Familias Unidas* is a prominent example of a culturally-focused intervention which takes into account unique and complex personal contexts as part of its intervention design.

Within research literature, there are other examples of substance use interventions with exclusively Latinx samples. Of these, studies examining the use of *promotores* have demonstrated some positive preliminary findings. These community health advocates—or *promotores* in Latinx communities—serve as important and empowering resources for the delivery of health education in their communities. In addition, *promotores* inform health providers about their respective community’s health needs as well as useful insights regarding the cultural relevancy of substance use interventions (Ramos et al., 2018). In their randomized clinical trial (RCT) using *promotores* in emergency departments, Cherpitel et al. (2016) found greater reductions in all measures of alcohol consumption at 12 months for the intervention condition (i.e. brief motivational information with *promotores*) relative to control conditions (i.e. screening or assessment only). There were, however, no significant reductions in negative consequences or problems due to alcohol use. A similar study using *promotores* to conduct screening, brief intervention, and referral to treatment (e.g. SBIRT, an evidence-based practice used to prevent problematic substance use) in emergency rooms found intervention recipients
reported high perceived levels of quality of care, although there was no comparison group (Ramos et al., 2018).

Along with the use of *promotores*, several examples of culturally adapted interventions have proven effective when working with Latinx populations. In one such case, researchers developed a culturally adapted brief motivational intervention (CA-BMI) to reduce alcohol-related health disparities among Latinx individuals and to inform interventions in medical settings (Field et al., 2015). Furthermore, analyses of these CA-BMIs suggest patterns of acculturation may have an impact on BMI efficacy among Latinx patients (Field, Ramirez, Juarez, & Castro, 2019). In addition to motivational interventions, studies using culturally adapted SBIRT indicate the brief intervention can be delivered to patients from a wide variety of backgrounds and ethnicities, especially when clinicians possess understandings of cultural differences and values that in turn inform their practice (Satre, Manuel, Larios, Steiger, & Satterfield, 2015). Manuel et al. (2016) report use of SBIRT and culturally-tailored SBIRT methods are feasible with Latinx subpopulations, although with some caveats. For example Spanish language services and providing care in community service environments are likely needed for recent immigrants. Likewise, service providers should consider variations in drinking norms based on an individual’s histories of immigration and/or acculturation (Manuel et al., 2016).

In addition to culturally adapted SBIRT and BMIs, researchers have developed specific brief-intervention programs incorporating the use of *promotores*. *Vida Pura* is a substance use intervention wherein *promotores* provide BMIs to Latinx day laborers. Findings suggest not only a demonstrated need for substance use treatment with this population, but treatment fidelity was high within providers (as measured by motivational interviewing treatment integrity (MITI 4.1)
scores), suggesting the provision of BMIs via *promotores* could be done effectively with ongoing supervision and address important treatment gaps (Ornelas, Allen, Vaughan, Williams, & Negi, 2015; Serrano et al., 2017). Other prominent researchers have demonstrated the effectiveness of BMIs for problematic alcohol use with Latinx populations as well (Field, Caetano, Harris, Frankowski, & Roudsari, 2010).

Similarly, a replication of the Quit Using Drugs Intervention Trial (QUIT) via an RCT with Latinx patients in primary care demonstrated promising findings as well. Gelberg et al. (2017) administered the intervention via a single-blind, two-armed RCT of patients at a federally qualified health center (FQHC) in East Los Angeles. Patients assigned to the intervention condition received brief clinical advice to reduce or quit their risky substance use, a video-recorded doctor’s message reinforcing that clinical advice, health education materials, and two separate 20-30 minute follow-up harm-reduction coaching sessions via telephone. A reduction in the number of past 30 days of substance use of the highest scoring substance on the baseline ASSIST from baseline to 3-month follow-up was the primary dependent variable. Results indicated members of the intervention condition reported reductions in substance use of 40%, while members of the control condition reported no changes in their use (Gelberg et al., 2017). Their work, along with many of the aforementioned studies, did not examine the effects of immigration or patterns of acculturation on substance use outcomes. As such, substance use interventions targeting Latinx populations should consider these factors in the future.

Finally, religiosity and faith-based interventions with both general population and Latinx samples have demonstrated effectiveness at protecting against lifetime substance use and/or reducing problematic substance use (Jankowski, Meca, Lui, & Zamboanga, 2018; Kirk & Lewis, 2013; Meyers, Brown, Grant & Hasin, 2017; Palamar, Kiang, & Halkitis, 2014; Sanchez, Dillon,
Concha, & De La Rosa, 2015; Yonker, Schnabelrauch, & DeHaan, 2012). Studies with general population (i.e. not exclusively Latinx) samples suggest greater religious service attendance and frequency of prayer/meditation are associated with lower levels of substance use and other risky behaviors (Kirk & Lewis, 2013). Meta-analyses support these findings, indicating religiosity attenuates risky substance use behaviors in both adolescents and emerging adults (Yonker et al., 2012). With exclusively Latinx samples, findings are similar. For instance, among a sample of Mexican and Mexican-American youth, religiosity protected against lifetime alcohol, tobacco, and cannabis use (Marsiglia Kulis, Nieri, & Parsai, 2005). Altogether, these findings suggest religiosity and faith-based interventions may play significant roles within the contexts of emerging adulthood, acculturation, and substance use with Latinx EAs.

**Contemporary Substance Use Research with Latinx EAs**

Historically, research on substance use with Latinx samples focuses on older adults, adolescents, or does not target emerging adulthood specifically (Acosta, Hospital, Graziano, Morris, & Wagner, 2015; Caetano, 1987; Caetano & Kaskutas, 1996; Coatsworth et al., 2002; Gil, Wagner, & Vega, 2000; Martinez, 2006; Prado & Pantin, 2011; Vega & Gil, 2008). A majority of the few existing treatment studies looking exclusively at Latinx EAs samples college students (Cano et al., 2015; Skewes, Dermen, & Blume, 2011), which again is common throughout EA literature in general. This limitation is problematic considering a recent meta-analysis found studies with samples containing higher proportions of college students reported better substance use outcomes overall (Davis, Smith, & Briley, 2017). Similarly, this finding suggests outcomes are worse for samples with greater numbers of non-college attending EAs.

In academia, Latinx enrollment in post-secondary education has grown significantly over the past several decades. According to Gramlich (2017), fewer Latinx students dropped out of
high school in 2016 (10%) than 20 years prior (34%), and college enrollment over that same period is up as well (47% vs. 35%). Consequently, Latinx students represent roughly 17% of enrollments at U.S. colleges and universities (Cano et al., 2015). As emerging adulthood is a time marked by significant upticks in risky substance use behaviors, the increasing proportion of Latinx students in academic settings demands more attention. Past research suggests nearly half of Latinx college students reported engaging in heavy episodic drinking at least once per week (Cano et al., 2015; Venegas, Cooper, Naylor, Hanson, & Blow, 2012). Moreover, Latino/x male students consume alcohol at higher rates than their female colleagues (Cano et al., 2015). Both inside and outside post-secondary education, Latinx EAs may have the added burdens of navigating contrasting cultural expectations of their country of origin and their current contexts in the United States. Previous research indicates emerging adults who do not attend college have overall higher rates of substance use than their college-attending peers (Davis, Smith, & Briley, 2017). It is unclear whether that finding is the same across racial/ethnic lines.

Outside of U.S. colleges and universities, prior research with Latinx EAs is limited to emergency departments and/or to communities along the U.S. border with Mexico (Bernstein et al., 2017; Cherpitel et al., 2016; Nayak et al., 2015; Unger, 2014; Unger, Schwartz, Huh, Soto, & Baezconde-Garbanati, 2014). Findings from these studies are not necessarily generalizable either, considering the greater geographic dispersal of new Latinx immigrants in the United States over the past decade (Farrell, 2016). Nayak et al. (2015) examined readiness to change and accept help within a sample of Mexican origin young adults (ages 18-30). They also included cultural values like *respeto* (respect for others, elders), *simpatia* (harmony in relationships, families, societies) and *personalismo* (emphasis on relationships) as potential mediating variables explaining why these Mexican-origin young adults were more willing to change their
drinking behaviors compared to other groups. Past research indicates these covariates are critical components of appropriate client care for Latinx individuals (Juckett, 2013). Further, higher rates of *respeto, personalismo, and simpatia* may be associated with greater willingness to accept help and adhere to professional treatment recommendations (Field & Caetano, 2010). Skewes et al. (2011) conducted a similar study examining associations between readiness to change and post-intervention alcohol use, but again that was with a sample of Latinx college students. The work of Unger and colleagues (2014) focused more on links between substance use and perceived discrimination among Latinx adolescents and young adults in Southern California. None of the aforementioned studies, save Unger (2014), involved a developmentally or culturally tailored intervention or prevention model targeting substance use behaviors.

Finally, a few previous studies focused on exploring associations between religiosity and rates of substance use with Latinx EAs (Escobar & Vaughan, 2014; Porche, Fortuna, Wachholtz, & Stone, 2015). One such study with Latinx EAs suggested higher levels of EA religious attendance often protects against substance use, but those protective effects diminish when controlling for exposure to substance users (Palamar et al., 2014). Still others suggest public religion, or the affiliation with a specific religion and engagement with or attendance at practices/services, is the only faith-based protective factor against various types of substance use with Latinx EAs (Escobar & Vaughan, 2014). Finally, one study found negative associations between religiosity during childhood and early onset alcohol use, but no associations between religiosity and early regular use or lifetime substance use disorders with Latinx EAs (Porche et al., 2015). Given these suggested protective effects of religiosity against substance use, religious contexts should be considered when designing or tailoring substance use interventions for EA Latinx populations.
Emerging Adulthood Theory

Emerging adulthood (EA) is a demographically distinct period where individuals between the ages of 18 and 29 undergo unique biological, emotional, cultural, and developmental changes. Building off the work of prior theorists like Erik Erikson (1968), Daniel Levinson (1978), and Kenneth Keniston (1971), Arnett’s (2000) EA theory is unique in that he more clearly defined, and most importantly named this period during which distinct demographic changes occur. Included in his definition of emerging adulthood are five discrete characteristics, which this paper will address later in detail. A deeper exploration of EA theory will uncover some gaps in existing research, specifically how researchers and practitioners can apply tenets of emerging adulthood theory to specific subpopulations (e.g. Latinx EAs).

Considering emerging adulthood as a distinct life period, it is important to discuss previous theorists whose work helped create the construct, albeit indirectly. Erik Erikson’s (1950, 1968) work regarding the human life course, specifically with prolonged adolescence and young adulthood, seemed to be distinguishing post-adolescent years. Arnett (2000) is quick to point out Erikson never named this period directly, thus suggesting the influential psychologist ultimately never considered emerging adulthood a distinct developmental period. The term “young adulthood” is problematic as well. It implies someone has reached adulthood already, and emerging adulthood theory does not corroborate that notion. Emerging adulthood is not a quickly occurring transition, as one may assume given Erikson’s notions of prolonged adolescence and young adulthood. Emerging adulthood theory attempts to explain the complicated progression individuals undergo after leaving adolescence but before reaching full adulthood.
EA theory developed as researchers realized people were pushing back many notable life milestones—those often realized earlier in previous generations—until their late twenties or early thirties. Research shows people are marrying later in life on average compared to earlier generations, as well as waiting longer to commit to life-altering responsibilities (Arnett, 2005). In 1950, for example, the median age of marriage was 20 for women and 22 for men. In 2000, those numbers had ballooned to 25 years of age for women and 27 for men (Arnett, 2005). Furthermore, in 2018, the median age for first marriages in the United States was 30.1 years for men and 28.3 years for women (U.S. Census Bureau, 2018). Similarly, for Latinx men the median age for first marriage was 29.8 years, and for Latinx women the median age was 27.9 years (U.S. Census Bureau, 2018). Furthermore, EA’s also spend more time in postsecondary education compared to previous generations, which tends to delay marriage and nuclear family creation (Arnett, 2005). Previous reports suggest that of individuals who graduated high school the previous academic year, almost 70% went straight to either a two-year or four-year college (Bureau of Labor, 2016). In addition, recent data suggests as much as 39% of bachelor’s degree recipients will enroll in a graduate degree program within 4 years of finishing undergraduate studies (Cataldi et al., 2011). Similar findings arise from analyses of post-secondary enrollment with Latinx EAs. Specifically, in 2014 over 35% of Latinx EAs enrolled in two- or four-year colleges and universities, up over 13% from 1993 (Krogstad, 2016).

These generational patterns relate to how emerging adulthood embodies freedom, fewer societal constraints, and more flexibility to focus on one’s self rather than committing to life-altering roles at an earlier age (Arnett, 2005). As such, many researchers recognize emerging adulthood as a metaphorical bridge connecting adolescence to full adulthood. Defining this period as Arnett did has influenced more focused and apposite research concerning emerging
adulthood as a unique developmental stage. Again, multitudes of changes as well as uncertainty about the future often characterize this critical life stage. This uncertainty often gives rise to potentially deleterious emotions like stress and anxiety, both of which can lead to risky substance use behaviors.

Research has detailed quite clearly the harmful effects of stress and anxiety on those who lack sufficient supports or coping skills. For example, those without the necessary supports and skills may resort to more maladaptive means of coping like self-medication (Shadur, Hussong, & Haroon, 2015). Essentially, self-medication is when one resorts to substance use as a maladaptive mechanism of negative reinforcement, or as a means to rid themselves of negative emotions or pain. The persistent substance use then becomes more of an issue through the passage of time and increases in both frequency and intensity of use. The underlying premise is those with more negative affect will be at greater risk for developing risky substance use behaviors or even full-blown substance use disorders over time, because they tend to resort to substance use as a way to manage their negative emotions and pain (Cooper, 2002). While healthy maintenance of mental health is a priority for many, EA’s may have a more difficult time coping with the added instability and stressors so often integrated into this time. In spite of unique protective factors such as strong cultural identities and familism (Stone & Meyler, 2007), additional challenges more unique to Latinx individuals (e.g. acculturative stress, discrimination) may make emerging adulthood an even more tumultuous time (Perreira et al., 2019; Unger et al, 2014).

Dimensions of Emerging Adulthood Theory

Emerging adulthood consists of five dimensions: identity exploration, instability, self-focus, feeling “in-between”, and possibility (Arnett, 2000). Further, Arnett proposed every EA who lives in an industrialized society experiences these five dimensions in various degrees
Theoretically and empirically, these five features distinguish adolescence from adulthood and serve as the foundation for an individual’s development into a fully mature adult.

**Identity exploration.** The age of identity exploration defines EA’s as people who spend more time focusing on themselves as a means to understand who they truly are and what they want out of life (Arnett, 2000). As part of this exploration, EA’s often experiment more with their sexuality, their vocational options, and substance use. Other explorations occur within college-attending EA’s specifically, who may experiment with new courses and majors, or travel via study abroad programs. All of these often assist with the formation of EA core values and beliefs. In addition, the focus of identity exploration resides largely in love and work which both begin forming in adolescence, but intensify and become more fully realized during emerging adulthood. In other words, more consequential and focused exploration during emerging adulthood replaces the tentative and transient nature of exploration during adolescence. All this coupled with the challenges of navigating cultural dualities and ethnic identities may make identity exploration even more extraordinary for 1st and 2nd generation Latinx EAs. Past research suggests strong links between ethnic identity exploration—the degree to which an individual identifies with their ethnic group—and positive psychological well-being and functioning (Syed & Mitchell, 2013).

**Instability.** During emerging adulthood, individuals experience challenging and life-course altering situations (Arnett, 2014). This period of instability often comprises working various jobs, exploring new cultures, examining numerous career paths, leaving childhood homes, and associating with numerous romantic partners. Furthermore, this domain relates to the uncertainty and unpredictability many EAs feel as a result of their newfound independence and ability to make more autonomous decisions. For example, many EAs experience different living
situations, which in turn generate new friendships and relationships. These may present challenges due to complex intersections between domestic systems and academic ones. For example, Latinx EAs who perceive greater cultural incongruities (e.g. instability) between their familial environments and their new ones may be more at risk for experiencing increased family conflict and adverse mental health outcomes (Cano, Castillo, Castro, de Dios, & Roncancio, 2014; Castillo & Hill, 2004). In addition, in some Latin American countries where adolescents enter labor markets, leave parental homes, and start families earlier on average, it may be that some Latinx EAs achieve psychological maturity at an earlier age. This advanced maturation may result in lower perceived levels of instability during emerging adulthood (Fierro Arias & Moreno Hernández, 2007). The concept of instability during emerging adulthood highlights the fluidity of many core components of life during this time which can have a significant effect on stress, anxiety, and the formation of negative emotions. Research has shown repeatedly that anxiety and stress are positively correlated with high-risk behaviors like substance use and misuse (Milosevic, Chudzik, Boyd, & McCabe, 2017; Kopak, Hoffmann, & Proctor, 2016; Lai, Cleary, Sitharthan, & Hunt, 2015). In addition, these correlations exist across cultures and racial/ethnic lines as well (Lai et al., 2015).

Self-focus. Similar to the concept of identity exploration, emerging adulthood theory’s emphasis on being more “self-focused” implies these individuals presumably focus on their ability to make autonomous decisions more frequently on average than younger populations. This nascent sense of autonomy bolsters EA’s confidence to explore new ideas and things that interest them, excite them, and arouse their senses (Arnett, 2014). EA’s expectedly spend more of their free time focusing on themselves as they are often no longer under the rules of a direct caregiver. As a result of this still budding independence, individuals have more time to focus on
their own needs and desires—often participating or engaging in activities they were unable to do before and/or were not permitted to do (Arnett, 2014). This period allows for EA’s to make their own decisions about a wider scope of topics. For example, prior to reaching emerging adulthood, adolescents have significantly fewer opportunities to make decisions without first consulting their direct caregivers. EA’s, in contrast, may consult close friends for advice or make important decisions all on their own. Consequently, peer associations can have a great effect on the intensity and frequency with which one engages in substance use. Latinx EAs specifically—because of their ongoing contact with broader social networks—may be more prone to engage in risky substance use behaviors once beyond parental protection (Kopak, Chen, Haas, & Gillmore, 2012).

Feeling “in-between”. During emerging adulthood, individuals are thought to not feel like a complete adult (Arnett, 2014). In other words, EA’s may perceive themselves as adults in some ways, but not in others. The definition of adulthood varies between studies, but three commonly agreed upon domains of adulthood include: making autonomous choices, accepting responsibility for one’s actions, and establishing financial independence (Arnett, 1997, 1998; Greene, Wheatley, & Aldava, 1992; Scheer, Unger, & Brown, 1996). The transition to adulthood after adolescence is one that often takes many years, during which a variety of gradual changes and an increase in maturity occur. These changes do not occur overnight. Over time, EAs shape their worldviews through their own individual contexts. EA theory posits these contexts exist distinctly within emerging adulthood, which then facilitate the development of EAs into fully mature adults. The terms emerging adult and adult, specifically how they are self-prescribed by the individual, are subjective in their applications. In Figure 1. Arnett (2000) illustrated how a sample (N=519) of emerging adults perceived their own subjective identification as “adults.” As
illustrated on the graphic, the percentage of people indicating they reached full adulthood increases over time, and reaches its peak after the age of 35. This pattern suggests clusters of subjective experiences help individuals define their own adult status over time. For example, a Latinx EA’s upbringing and the parental/social capital available throughout development can have a strong impact on how he/she choose to define him/herself. So too may navigating competing cultural norms and expectations. Overall, many elements determine how someone perceives their own developmental status, and all need to be analyzed in appropriate contexts when conducting research with EA populations.
**Figure 1. Subjective conceptions of adult status and feeling in-between.**

Arnett, J. (2000, p. 472). Figure 2. Subjective conceptions of adult status in response to the question, do you feel that you have reached adulthood.

**Possibility.** The domain of possibility suggests EAs have not fully decided on their futures (Arnett, 2014). In other words, EA’s have many ideas and options regarding what directions their life trajectories will take them. In general, a sense of buoyant optimism and hope with respect to the future characterizes possibility during emerging adulthood. Optimism is a recurring theme throughout the domains of emerging adulthood, because many EA’s feel they have ample time to accomplish their goals and succeed in life. This hopeful freedom compounds the fact many EAs are living more autonomously for the first time, which allows them greater
latitude when making decisions and forging paths in their lives. For example, if Latinx EAs perceive their primary caregivers and/or heritage culture as rigid and restrictive, they can “reboot” and make efforts to live more dynamic and experimental lifestyles. In contrast, they could choose to maintain the values instilled in them by their caregivers and heritage culture and pass them on to their close friends and/or romantic partners. In either case, the choice is up to the individual during this time. These choices take on added significance with many Latinx EAs, as experiencing significant cultural incongruities may place them at greater risk for experiencing decreased family cohesion and adverse mental health outcomes (Cano et al., 2015; Wagner et al., 2010). Since emerging adulthood often includes a sense of having few long-term obligations, individuals possess vast amounts of freedom within which to make decisions. Of note, however, is that these choices can have significant and lasting impacts during future years and upon future development. In this way, emerging adulthood serves as an important predictor and precursor for outcomes in adulthood, just as childhood factors can predict adolescent outcomes and so on. Thus, researchers and practitioners have a moral obligation to consider the life stage of emerging adulthood as distinct, and emerging adults as individuals possessing a unique set of characteristics.

**Developmental Strain**

As an additional component of emerging adulthood, a more recent concept coined “developmental strain” by researchers (Smith, Davis, & Shen, under review) may be associated with substance use outcomes with Latinx EAs. Stemming from inconsistent and sometimes weak findings regarding dimensions of emerging adulthood and substance use, developmental strain may be a more reliable predictor for substance use during this time. This notion of added strain during emerging adulthood maps onto Arnett’s (2005) hypotheses that pressures from various
transitions and anxiety about the futures would result in more negative substance use outcomes. The construct covers ideas about emerging adulthood as a period of transition and concepts relating to pressures associated with identity development. Furthermore, recent research demonstrated significant and positive correlations between developmental strain and substance use related consequences within a college sample of emerging adults (Clary, Goffnet, Bennett, & Smith, under review). Increased problems associated with substance use and higher endorsements of developmental strain with marginalized emerging adults suggest this construct may be a predictor of riskier substance use with Latinx EAs as well.

Latinx EAs may be more likely to endorse developmental strain (i.e. feeling “in between” and instability) as a reason for substance use. The added dual stressors of budding autonomy and managing different social systems such as work, school, and peer groups, while belonging to a more highly discriminated against and marginalized ethnic group may create an added layer of developmental strain for Latinx EAs (Cano et al., 2015). This extra strain may then lead to them self-medicating through substance use (Shadur, Hussong, & Haroon, 2015). Additionally, Latinx EAs may have more opportunities to cultivate their identities during this time, particularly in social contexts that more frequently normalize risky substance use. The incipient freedom to develop one’s multicultural identify during emerging adulthood, juxtaposed with added stress that blossoms during these formative years due to added responsibilities and expectations, may contribute to developmental strain. The period of emerging adulthood is when much identity development occurs, but since traditional adulthood yields expectations of individuals as being mostly developed, this may cause Latinx EAs (and EAs in general) to feel uncertain of their adult status (Erikson, 1968). Springing from these feelings of uncertainty, coupled with
additional stress and social stigma, Latinx EAs may feel overwhelmed by the strain on their development and thus increase their use of substances as a means to cope.

**Summary & Limitations of Emerging Adulthood Theory**

EA theory is an empirically supported framework for understanding the epidemiology of substance use among 18 to 29 year olds (Arnett, 2000). Due to controversies surrounding the generalizability of EA theory across numerous social contexts, cultures, and subpopulations, however, assessments of this approach should delve more deeply into discussions of the benefits and potential pitfalls of establishing a new life stage theory. Most research conducted with EAs in the U.S. focuses on college students. This leaves a significant gap in the research literature, although there are some examples of EA Latinx research in the Americas outside of the United States (Dutra-Thomé & Koller, 2017; Facio, Resett, Micocci, & Mistririgo, 2007). Worth noting, however, is much of the extant EA research outside of the United States focuses on student and higher SES samples as well (Facio et al., 2007; Fierro Arias & Moreno Hernández, 2007). There are many different life trajectories for people in their late teens and twenties—many of which that do not include postsecondary education.

First and second-generation Latinx individuals experience different developmental challenges not normally associated with U.S.-born, non-Latinx individuals. Processes of acculturation create a unique trajectory that differs greatly from a majority of college students, the subpopulation to which EA theory is most often applied. In addition, Latinx individuals experience different levels of risk for problematic substance use due to various factors including intergenerational patterns of conflict and acculturation, as well as the stress often associated with such processes (Lorenzo-Blanco et al., 2016; Perreira et al., 2019; Zamboanga et al., 2009). For
example, several past studies with Latinx adolescents found associations between intergenerational differences in acculturation and both lifetime and past month alcohol and cannabis use (Unger, Ritt-Olson, Soto, & Baezconde-Garbanati, 2009; Unger, Ritt-Olson, Wagner, Soto, & Baezconde-Garbanati, 2009).

**A Brief, Recent History of U.S.-Latin American Immigration Policy**

The Pew Research Center (2013) suggests immigration directly affects over 80% of 1st and 2nd generation Latinx individuals in the United States. In other words, a large majority of 1st and 2nd generation Latinx EAs in the United States meet resistance in the form of restrictive policies and other immigration-control measures seeking to limit the number of individuals who gain entry into the country or dissuade people from entering via unapproved avenues. For example, the Immigration Reform and Control Act of 1986 established criminal penalties for hiring individuals without legally recognized documentation and expanded funding for border control agencies (Massey & Pren, 2012). Other acts and amendments established visa limits for spouses and children of U.S. residents, while others authorized forced deportations of violent criminals or expedited withdrawals of individuals living in the country without legally recognized documentation. In 1996 the federal government passed the Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA) which enhanced funding for border enforcement agencies, restricted criteria for asylum-seekers, and increased the income threshold necessary to sponsor immigrants. In addition to IIRIRA, the Personal Responsibility and Work Opportunity Act (PRWORA) imposed under President Clinton restricted the types and quantities of benefits available to individuals with and without legally recognized documentation (Massey & Pren, 2012; Woo, 2008). These policies, however, are simply the most recent examples of a centuries-long pattern of legislation that has all-too-often marginalized individuals attempting to
migrate to the United States. Ultimately, the specters of colonialism still function today, albeit in more clandestine ways.

September 11, 2001 marked the beginning of a new era in U.S. immigration policy. The attacks in New York City and the failed attack on Washington D.C. spurred public support for restrictive and punitive immigration and deportation policies. The Federal government proceeded in kind by issuing some of the most restrictive and discriminatory immigration policies in the history of the United States. According to Yoo (2008), through political discussions and debates, elite power-holders often portray members of immigrant populations as “undeserving” and “fraudulent”. These portrayals become more frequent especially during times of social service cutbacks (Chunn & Gavigan, 2004; Yoo, 2008) and help expedite policies restricting or eliminating access to social service programs for Latinx migrants and their families (Yoo, 2008). Political discourse in the aftermath of the 9/11 attacks led to the creation of the Patriot Act, which among other things increased funding for the surveillance and deportation of U.S. residents. The legislation authorized these deportations without due process for undocumented residents as well (Massey & Pren, 2012). In addition, the new policy attempted to justify the profiling, detaining, and indefinite holding of individuals based solely upon their nation of origin in a misguided attempt to combat global terrorism (Cappiccie, 2011; Frederking, 2012).

Shortly after the implementation of the Patriot Act, the National Intelligence Reform and Terrorism Protection Act in 2004 and the Secure Fence Act in 2006 expanded funding for tangible anti-immigration measures in areas like detection (aircraft and technology), enforcement (border patrol agents, immigration investigators, detention centers), and prevention (fences, walls, cameras, drones). More recently, the federal government implemented policies like the 2010 Border Security Act, which funds the hiring of more border patrol agents and increases the
overall border patrol budget (Frederking, 2012). These new immigration policies and measures—which have little if any association with the events of 9/11—do little to restrict migration from Latin America to the United States (Migration Policy Institute, 2018, Zong & Batalova, 2019) and cost the United States significant sums of money and cultural capital (Kalhan, 2010; Mountz, Coddington, Catania, & Loyd, 2013). Furthermore, these policies can produce adverse effects in the form of exclusion, discrimination, and/or stress for Latinx EAs (Philbin, Flake, Hatzenbuehler, & Hirsch, 2018; Sabo & Lee, 2015).

The Deferred Action for Childhood Arrivals (DACA) Act provided a brief respite from the deportation and separation of families in the United States for Latinx EAs accepted into the program. In addition, the policy opened up access to new employment opportunities, higher earnings, health care, banking capabilities, and other forms of legally recognized documentation for Latinx EAs and others (Gonzales, Terriquez, & Ruszczyk, 2014). Policy analyses revealed short term benefits for DACA recipients in the form of reductions in some systemic barriers that previously undocumented EAs needed to overcome in order to achieve higher levels of socioeconomic incorporation into the mainstream (Gonzales et al., 2014). The precarious nature of the policy in general, and its subsequent rescindment under the current administration, have returned most Latinx EAs to the situations they were in prior to DACA’s enactment in 2012. Moreover—at risk for higher levels of social isolation and immigration stress—individuals from this population are at higher risk on average for exhibiting risky substance use behaviors (Cano et al., 2018).

Presently, or since the 2016 presidential election, anti-migrant and anti-Latinx ideologies and policy proposals further illustrate the complex and persistent contexts of the racializing of and discrimination against Latinx individuals in the United States. In the months immediately
after the election, public hate incidents spiked, with 29% classified as anti-immigration and 14% of classified as anti-Latinx (LeBrón & Viruell-Fuentes, 2020). Furthermore, in 2016, over half (52%) of Latinx individuals reported chronic or occasional discrimination associated with their race or racial status (LeBrón & Viruell-Fuentes, 2020). In addition, past research indicates younger Latinx individuals report more frequent discrimination than older Latinx individuals (LeBrón et al., 2014, 2017) even after controlling for other demographic factors (e.g. gender, SES, length of time in U.S.). This finding suggests Latinx EAs may be more at risk for experiencing discrimination than older adults, perhaps due to structural patterns of their daily lives, or to stigma associated with both their age and their racial/ethnic identities (LeBrón & Viruell-Fuentes, 2020). Consequently, Latinx EAs may be at greater risk for engaging in substance use due to increased experiences with discrimination, as previous research has linked discrimination and alcohol use susceptibility with Latinx youth (Perreira et al., 2019).

In addition to these risks, newly arrived migrants from the Americas often experience high degrees of stress associated with U.S. popular opinions regarding immigration. These opinions are frequently fueled by media portrayals of the issue, which often center on highly selective economic and labor market impacts of immigration on U.S.-born workers (Bleich, Bloemraad, & de Graauw, 2015; Jacobs, Hooghe, & de Vroome, 2017). Following a trend of “cognitive bias” in media studies and mass communication, recent studies demonstrate effects of news framing depend significantly on the emotional responses of the news audience to the issue being framed (Aarøe, 2011; Lecheler, Bos, & Vliegenthart, 2015). For example, negative emotions tend to dominate immigration debates in the United States. These negative emotions are due at least in part to both recent and historical media conflations of American migration and terminologies like “Latino threats” or “bad hombres” (Silber Mohamed & Farris, 2019).
To this point, previous research examining public discourse around migration found these discussions often focus on media-portrayals of migrants in terms of societal fears as to the perceived negative personal and economic consequences of migration (Boomgaarden & Vliegenthart, 2009). While some studies evaluating public discourse have focused on immigrants as victims within the context of fearful and intolerant societies, most focus on post-9/11 contexts where media portrays immigrants as threats to societies (Lecheler et al., 2015). In addition, the recent trends in anti-immigrant sentiments across many Western nations correlates positively with the political successes of nationalist, anti-immigrant movements and parties (Lecheler et al., 2015). Overall, these negatively framed policy issues and media portrayals of Latinx individuals do little but further marginalize a large segment of the population who would benefit from less restricted access to healthcare and substance use related resources. Furthermore, how and with what supports Latinx individuals navigate these environments often dictates how they will assimilate into U.S. culture, which in turn may predict a variety of health related outcomes during emerging adulthood (Akresh, Do, & Frank, 2016; Portes et al., 2009).

**Segmented Assimilation Theory**

In the past 25 years, there has been considerable scholarship and debate regarding the well-being of Latinx immigrants and their children (Flórez & Abraído-Lanza, 2017; Hernandez, 1999; Kroneberg, 2008; Xie & Greenman, 2005). Some researchers suggest new immigrant populations from the Americas face a unique set of circumstances and challenges that qualitatively differentiate them from earlier generations of European migrants. Others posit new immigrants face a more hopeful process of gradual assimilation into U.S. culture. One notable theory that emerged from the scholarship and debate is segmented assimilation theory (Portes & Zhou, 1993; Portes & Rumbaut, 2001).
In contrast to “straight-line” assimilation theory, which assumes with each succeeding generation migrants become more similar to the mainstream culture and more economically successful, segmented assimilation theory takes a more nuanced approach to analyzing trajectories of new and established immigrant populations. Its framers built segmented assimilation theory upon the foundation of an extremely diverse and segmented American society, with lower-class communities existing in both central cities and sparsely populated rural areas where immigrant families often settle upon arrival to the United States. Essentially, different patterns of assimilation into U.S. society have various consequences for migrants and their families. The argument then is divergent pathways are available through which immigrants and their families may assimilate into mainstream culture. According to Portes & Rumbaut’s (2001, 2006) research, segmented assimilation is a process by which outcomes vary across immigrant minority populations and where rapid integration and conventional acceptance into the mainstream culture represents just one potential outcome. Prior research, however, invokes this theoretical framework to test for relationships between assimilation and other health outcomes, but never with substance use (Akresh et al., 2016; Portes, Fernández-Kelly, & Haller, 2005, 2009). A major purpose of this literature review is to lay the groundwork for future examinations of associations between divergent acculturative pathways and substance use outcomes with Latinx emerging adults.

**Correlates of Acculturative Patterns**

Built into Portes & Rumbaut’s (2001) theory of segmented assimilation are distinct acculturative patterns between children and their primary caregivers. Segmented assimilation theory posits that 2nd generation Latinx immigrants experience various obstacles (e.g. discrimination) and that how they navigate those obstacles (e.g. use of social capital/supports)
predicts different life course trajectories. While initially conceptualized to explain the outcomes of children of immigrants (i.e. the 2\textsuperscript{nd} generation), other research invokes the theory to describe these assimilative trajectories among other groups, including 1\textsuperscript{st} generation immigrants who immigrated with family members (Akresh et al., 2016; South, Crowder, & Chavez, 2005). Each unique trajectory links to a diverse array of key correlates associated with caregivers and community contexts, specifically: 1) family composition, 2) levels of parental human capital, and 3) modes of incorporation into communities/cultures (Figure 2.). All three correlates play an important role in determining, at least in theory, the distal life course trajectories of 1\textsuperscript{st} and 2\textsuperscript{nd} generation immigrants.
Figure 2. The process of segmented assimilation: A model.

Portes, A., & Rumbaut, R. G. (2006, p. 63). Figure 3.1. The process of segmented assimilation: A model
**Family structure.** Historically, family structure plays a significant role in human development and is especially prominent in Latinx families. Considering the intersections of migration, employment, and immigration policy one can imagine the myriad challenges associated with maintaining many nuclear families. Prior research suggests Latinx households with both primary caregivers experience higher levels of family cohesion, communication, parental monitoring, and lower levels of family conflict (Wagner et al., 2010). Furthermore, adolescents living in arrangement other than with both biological caregivers may be at greater risk for developing substance use issues (Wagner et al., 2010). Lower levels of parental monitoring may mediate these associations between family composition and substance use (Wagner et al., 2010). Since risky substance use frequently begins while still residing with caregivers during adolescence or emerging adulthood, it is important to consider the roles of family composition and context in the development of substance use issues with Latinx EAs.

**Parental human capital.** In conjunction with family composition, parental human capital plays a critical role in Latinx emerging adults’ adaptations to new environments. Some families lack means to combat threats presented by discrimination, negative peer influences, and other obstacles inherent within U.S. culture. Those with sufficient human capital, however, are more adequately equipped to integrate successfully into mainstream society. Here human capital refers to job experience, language knowledge and proficiency, and education among other things. On average, immigrants to the United States who are less educated tend to be in less competitive positions in general, which in turn lowers their levels of personal human capital. The same holds for those who arrive in the United States with relatively less occupational experience as well (Portes & Rumbaut, 2001). In contrast, parents with higher levels of education may better support their children’s education, which in turn increases the likelihood the 2nd generation (i.e.
their children) will ascend to middle-class status (Portes et al., 2005). This increased support often stems from having more information about risks and opportunities in their immediate contexts, as well as earning higher incomes on average than their less educated peers. Furthermore, these higher incomes also grant access to strategic goods like better schools, more preferable housing, and trips back to countries of origin to visit family and reinforce kinship ties (Portes et al., 2005). These strategic goods may have buffering effects against substance use, as prior research suggests higher perceived levels of neighborhood safety correlates negatively with substance use disorders, despite controlling for individual SES (Alegría et al., 2008).

In addition to education and income, English language acquisition can be a significant source of human capital for Latinx immigrants and their families. Recent research suggests between 20% and 30% of low-income Latinx individuals live in a linguistically isolated home, or a home where neither parent spoke English well (Gándara & Mordechay, 2017). In addition, Perreira et al. (2019) highlights these linguistic conflicts as a source of stress for many 1st and 2nd generation Latinx immigrants. These language gaps, coupled with lower levels of parental education almost inevitably result in Latinx youth living in more impoverished areas, attending underperforming schools, and finding themselves surrounded by other children like themselves (Gándara & Mordechay, 2017). They are isolated. Coupled with social capital (e.g. strong ethnic networks), familial human capital significantly affects the development of Latinx youth and EAs.

**Modes of incorporation.** Finally, modes of incorporation into mainstream society, such as the composition of the host society and its reception of immigrants play important roles in determining trajectories of immigrants and their families. Different variables relating to societal incorporation, such as the relative outlook of police authorities or strength of co-ethnic receiving communities, can influence pathways of acculturation. In addition, stronger co-ethnic enclaves
may reinforce cultural and linguistic norms, which can then serve as protective factors against some of the dangers associated with assimilation into mainstream U.S. culture.

While ethnicity is largely an external characteristic, it is linked inexorably to the prevailing values and beliefs of mainstream society. Often, members of the mainstream employ this social construct (i.e. ethnicity) to either accept or reject individuals. Consequently, Latinx individuals living in more welcoming communities where fear of external difference is less common may encounter fewer barriers when acculturating into U.S. society. According to Portes & Rumbaut (2001), validated sociological theory shows migrants who are more similar to their receiving communities in terms of language, physical traits, socioeconomic status, and religious beliefs tend to experience more rapid integration and positive receptions overall. Immigration researchers think this is a reason why more educated immigrants and families from Western European nations face significantly fewer barriers upon arrival to the U.S., and overall tend to ascend the socioeconomic ladder more swiftly (Portes & Rumbaut, 2001). Other research suggests that newly arrived immigrants simply mirror the lifestyle choices of those around them. These choices result in their acculturation being associated with positive or negative health outcomes, depending on their contexts (Akresh et al., 2016). Ultimately, all three of these correlates play a significant role in how Latinx parents/primary caregivers and their children acculturate into their host societies. The following pages outline the three distinct patterns of intergenerational acculturation as defined by Portes and Rumbaut (2001).

**Patterns of Intergenerational Acculturation**

**Dissonant acculturation.** Approximately 62% of Latinx children live near or below the poverty line, and nearly two-thirds (64%) of them live with at least one foreign-born parent (Wildsmith, Alvira-Hammond, & Guzmán, 2016). The latter statistic indicates family members
likely speak Spanish in the home (Wildsmith et al., 2016). Further, anywhere from 20% to 30% of these low-income Latinx children live in homes where neither parent speaks English well, or at all (Gándara & Mordechay, 2017). Due to decreased English proficiencies and lower SES statuses, Latinx immigrant parents often gain employment in the lower end of bifurcated labor markets (Portes et al., 2005, 2009; Portes & Rumbaut, 2001). While employed, their children typically attend school and acculturate more rapidly, and as a result learn English. This divergence between rates of acculturation can undermine the parent-child relationship and result in acculturative dissonance.

Dissonant acculturation occurs when children learn the host society’s dominant language and normative behaviors at significantly different—and typically faster—rates than their parents or primary caregivers. Oftentimes this process results in role reversals. For example, children learning English more quickly may assume the role of translator for their parents at doctor’s visits or appointments with social service agencies. Because of the dissonance between them and their parents, Latinx children may lose the support needed to navigate the significant societal obstacles they face. These obstacles may include racial discrimination, segmented labor markets, and intra-community subcultures (e.g. street gangs). With dissonant acculturation, Latinx children meet these challenges directly and oftentimes in isolation, without parental/caregiver support, without family capital and resources, and without a countervailing message to antagonistic attitudes or negative lifestyles (Portes & Rumbaut, 2001). The expected (although not universal) outcome for children in a pattern of dissonant acculturation is downward assimilation.

Downward assimilation here refers to the learning of normative lifestyles and behaviors that does not result in traditional upward mobility, but rather the opposite. On average, Latinx
EAs who come from less cohesive, lower SES families (i.e. less human capital), and who attended ethnically homogenous and underfunded schools are more likely to experience downward assimilation (Portes et al., 2009). Prior studies found associations between academic achievement and downward assimilation as well (Akresh et al., 2016; Portes et al., 2009). For example, in one sample of immigrant children and adolescents, a one-point increase in junior high school GPA was associated with a 30% decrease in likelihood of downward assimilation (Portes et al., 2009). Further, previous research links downward assimilation to a host of negative social outcomes (e.g. arrest, incarceration, adolescent pregnancy, and poorer academic achievement; Portes et al., 2005; Waters et al., 2010). Greater levels of downward assimilation may be marked by more maladaptive behaviors such as substance use among youth as well (Warner, Fishbein, & Krebs, 2010).

**Consonant acculturation.** In contrast to dissonant acculturation, consonant acculturation is the opposite, where learning the mainstream culture’s dominant language, normative behaviors, and lifestyles takes place at roughly the same pace for both second generation children and their parents. These learning processes occur in concert with the measured relinquishment of aspects of culture from their country of origin, and again, take place at a similar rate for members of both generations (i.e. parents and children). According to researchers, this process most frequently occurs when immigrant parents or caregivers possess sufficient human capital to guide their children’s cultural development and oversee it (Portes & Rumbaut, 2001). Acculturative consonance across generations does not guarantee the removal of obstacles faced by children in patterns of dissonant acculturation. Rather it increases the likelihood consonantly acculturating children will have more support from their family and caregivers because of their similar acculturative trajectories. For example, parents developing in
a similar way to their children are more likely to offer direct support when their children experience racial discrimination, or to offer family resources and capital when their children experience unequal economic opportunities. Family members may also reinforce important familial beliefs and values when negative subcultures creep into their children’s lives. Ultimately, general trends of upward assimilation into the mainstream society define this pattern, with discrimination being a primary downward force working in opposition.

**Selective acculturation.** The third and final pathway is selective acculturation. Here the learning processes of both first and second generations are rooted in sufficiently large, supportive, and diverse co-ethnic communities to halt total cultural shifts and to foster retention of language and normative values and behaviors from countries of origin. Relative to the other two patterns, selective acculturation is marked by less intergenerational conflict, greater diversity in the children’s peer groups, and the maintenance of full bilingualism for second generation children. Again, all these benefits do not exempt children from experiencing discrimination or bifurcated labor markets, rather they meet these obstacles with more holistic and positive support from their parents, caregivers, and communities. Greater levels of support and capital, on average, result in lower levels of acculturative stress which is a malady linked in previous research to increased symptoms of depression (Cano et al., 2015), nicotine use (Lorenzo-Blanco et al., 2016), and alcohol use (Gil, Wagner, & Vega, 2000). Conversely, prior studies found positive correlations between lower social capital (i.e. higher unemployment, lower education) and poorer health outcomes for Latinx individuals (Akresh et al., 2016). Furthermore, past research suggests English language acquisition and academic achievement, coupled with retaining parents’ language and having solid community-based foundations represent the best example of outcomes immigrant children may experience (Portes et al., 2005, 2009). The
community aspect of selective acculturation is paramount here. Ideally, community support and resources compound upon existing family supports and resources to produce a “wraparound” effect where children experience the greatest levels of support from the greatest amount of positive sources. A combination of general upward assimilation with maintained biculturalism or multiculturalism highlights this pattern of selective acculturation. To the best of my knowledge, no research examines Latinx EA substance use in the context of segmented assimilation, but these distinct pathways may have unique effects on Latinx EA substance use, and thus deserve attention.

**Gaps in Segmented Assimilation Research**

Despite still growing concern over health disparities between ethnic subgroups in the United States, research evidence focusing on substance use treatments within Latinx populations remains limited (Field, Cochran, & Caetano, 2013; Marsiglia et al., 2019; Serafini et al., 2017). Research evidence on substance use with Latinx EAs is even scarcer (Bernstein et al., 2017; Cano et al., 2015; Cherpitel et al., 2016; Unger, Schwartz, Huh, Soto, & Baezconde-Garbanati, 2014). Furthermore, as of 2019, no research examines how segmented assimilation theory’s patterns of intergenerational acculturation influence substance use outcomes with Latinx emerging adults. Additionally, past research with Latinx adolescents does not explicitly measure patterns of segmented assimilation, nor does it test for associations with substance use. If indeed there are correlations between patterns of intergenerational acculturation and substance use with Latinx EAs, practitioners and scholars alike can devise culturally responsive interventions that address this dynamic.

Discrepancies in findings within acculturation research has led to a closer examination of acculturation gaps, primarily between children and their parents. Of note, Unger and colleagues
(2009) found intergenerational discrepancies in acculturation were often a risk factor for substance use during adolescence. They found greater intergenerational discrepancies in Latinx orientation, a measure of one’s orientation towards traditional culture and values, significantly predicted higher rates of lifetime and past month cannabis and alcohol use (Unger et al., 2009). Furthermore, greater differences in acculturation between parents and children were associated with lower overall levels of family cohesion, which in turn predicted higher overall rates of substance use (Delker, Brown, & Hasin, 2016; Unger et al., 2009). The same study found child-specific Latinx orientation, irrespective of parent’s orientation, was a protective factor against substance use in general (Unger et al., 2009). Other studies corroborate this finding as well (Unger et al., 2014; Vaughan, Waldron, de Dios, Richter, & Cano, 2017).

Acculturation-based studies and acculturation-gap research revealed a perceived need to examine stress related to these acculturative disparities more closely. The acculturation gap-distress hypothesis (Lau et al., 2005) stems from the clash of preferences and values manifesting from gaps in intergenerational acculturation. Analogous to dissonant patterns of intergenerational acculturation (Portes & Rumbaut, 2001), acculturation gaps often give rise to family conflict that in turn correlates with child and adolescent maladjustment (Lau et al., 2005). Based upon this hypothesis, widely held assumptions suggest matched acculturation between parents and children is associated with lower risks for family conflict and correlates of conflict including risky substance use behaviors. Various studies support the idea that children who are more Anglicized than their parents are more likely to use substances like tobacco, alcohol, and cannabis during childhood and adolescence (Cox, Roblyer, Merten, Shreffler, & Schwerdtfeger, 2013; Martinez, 2006, Unger et al., 2009). In contrast, some researchers suggest no correlation between acculturation-gaps and increased parent-adolescent conflict (Lau et al., 2005), while others
indicate increased involvement in U.S. culture and norms may serve as a buffer against various negative health outcomes (Smokowski, Rose, & Bacallao, 2008). The latter study, however, provided evidence for the importance of matched acculturation patterns as well (Smokowski et al., 2008). These mixed findings in research over time demonstrate a need for closer examination of intergenerational patterns of acculturation, as well as contextualized, intrapersonal acculturation and how within-person change over time relates to changes in substance use. This project addresses a gap in current literature by examining three specific patterns of intergenerational acculturation within families, and how those patterns are associated with frequency and severity of substance use during emerging adulthood.

**Conclusion**

This study examines associations between emerging adulthood, segmented assimilation, and substance use outcomes with Latinx EAs. It is important to address this gap in the social science literature because Latinx EAs experience unique challenges and circumstances not present in the lives of other emerging adults. Acculturative stress, discrimination, marginalization—left unexplored and unaddressed these challenges could result in more negative outcomes for Latinx EA populations overall. For example, Latinx EAs stand to lose a potentially significant portion of their healthy lives if they engage in risky or problematic substance use for a long period of time (World Health Organization, 2016). Of the leading risk factors of premature mortality or disability between 1990 and 2010, alcohol and tobacco use/exposure were two of the five largest contributors to global disability-adjusted life years, or DALYs (Murray & Lopez, 2013). One DALY can be interpreted as one lost year of “healthy” life. Globally, alcohol use contributed to the loss of over 97 million years of healthy life, while tobacco use and exposure to second-hand smoke contributed to the loss of over 156 million more (Murray & Lopez, 2013).
More extensive research with Latinx EAs could prevent much of these losses by serving as a bridge toward more effective and accessible intervention designs. Furthermore, this research could inform existing practices targeting substance use behaviors that to date have not been tested exclusively on Latinx EA samples.

To that end, it is crucial to consider the myriad intersections between complex factors when exploring substance use with Latinx emerging adults. Intergenerational patterns of acculturation, family composition, community contexts, peer associations, levels of human and social capital, socioeconomics, structural barriers, and the ever-complex transition to adulthood all play important roles in the development of risky substance use behaviors and/or substance use disorders for Latinx EAs. By coupling these factors with culturally sensitive and humble practices, practitioners may be better equipped to address substance use issues facing Latinx EA communities. Moreover, culturally considerate and adapted interventions may increase rates of treatment engagement among Latinx EA groups, as they may be inherently more appealing than traditional interventions. Latinx EA rates of substance use disorders (14.1%) are higher than for almost every other racial/ethnic group, and comparable to rates of substance use disorders (15%) with Caucasian EAs (SAMHSA, 2019). These numbers demand greater attention. After combining Latinx EA rates of substance use disorders with lower access to and engagement with treatment, researchers and service providers are left with pressing challenges to address regarding substance use and Latinx EAs.

Practitioners have some research-based evidence to lean on when working with substance using Latinx EAs, but researchers have rarely applied culturally adapted interventions with this population. As previously stated, a significant literature gap exists when considering substance use with Latinx EAs. Existing substance use research with this subpopulation is often limited
geographically to the U.S. border with Mexico, or to emergency departments. Other studies expanding beyond these isolated clusters are themselves restricted to samples of Latinx college students. Further, no studies examine associations between substance use outcomes during emerging adulthood, dimensions of emerging adulthood, and patterns of intergenerational acculturation. Also unclear is how the dimensions of emerging adulthood function across racial/ethnic lines. This lays the foundation for future work examining Latinx EA substance use outcomes through the lenses of segmented assimilation and emerging adulthood theories. Establishing stronger associations between acculturative stress and substance use with Latinx EAs may foster solicitous social policies as well. By beginning to consider these constructs and their associations with one another, researchers can facilitate the development of more effective interventions and substance use treatments, as well as reduce structural barriers to these services for Latinx EAs.

This research project aims to improve understandings of current contexts of emerging adulthood and acculturation within which Latinx EAs engage in degrees of substance use. Online surveys fulfilled this aim and included questions about substance use and acculturation, as well as demographic items and questions relating to emerging adult development. Acculturation-focused questions included factors relating to categorical assignment to either dissonant, consonant, or selective acculturation groups. The following chapters contain more detailed descriptions of this study. This project aimed to provide detailed information regarding the contexts in which Latinx EAs may engage in substance use, and also to provide results outlining areas ripe for culturally responsive interventions that address EA Latinx substance use and health.
CHAPTER 3: STUDY METHODS

In an ever-globalizing world, research demonstrates consistently that moving from one country and culture to another is a significant life event with unique stressors (Cano et al., 2017; Falconier, 2016). Latinx individuals currently account for half of U.S. population growth and are the largest minority ethnic group in the nation (Pulvers et al., 2018). By 2050, the U.S. Latinx population will represent over 30% of the total U.S. population (Juckett, 2013). Thus, it is imperative to improve understandings of the complex mechanisms via which this population and their offspring adapt to their new, shifting environments. Recent research suggests parent-adolescent acculturation gaps are associated with decreased family functioning and poorer educational outcomes (Nair, Roche, & White, 2018), factors which coincide with problematic substance use. This study seeks to test whether distinct patterns of acculturation predict substance use outcomes among Latinx emerging adults (EAs). As discussed, literature on substance use with Latinx EAs is sparse, but broader Latinx substance use research depicts a troubling picture of elevated use among younger Latinx age groups (Marsiglia & Kiehne, 2019) and U.S.-born Latinx individuals (Lipsky & Caetano, 2009).
Research Questions & Hypotheses

Research questions for this study are theory-driven and based off gaps in relevant research literature. Research questions for this study are as follows:

**RQ 1:** What associations exist between patterns of acculturation and substance use outcomes during emerging adulthood with Latinx EAs?

**RQ 2:** How do levels of developmental strain and stress coping differ between patterns of acculturation?

**RQ 3:** What are the effects of developmental strain and stress coping on substance use, and do they differ across patterns of acculturation?

**RQ 4:** To what extent do these mediating variables account for associations between patterns of acculturation and substance use with Latinx EAs?

Similar to the research questions, a priori hypotheses for this project originate from theoretical considerations and careful examinations and syntheses of prior research studies (Akresh et al., 2016; Cano et al., 2015; Cooper, 1994; Hauck-Filho, Teixeira & Cooper, 2012; & Lorenzo-Blanco et al., 2016; Kuntsche & Kuntsche, 2009; Perreira et al., 2019; Portes et al., 2005; Smith et al., under review; Waters, Tran, Kasinitz, & Mollenkopf, 2010; Zamboanga et al., 2009).

**H1:** Scores on measures of substance use should be, on average, highest for those who experienced acculturative dissonance with their parents/primary caregivers. This hypothesis stems from previous research indicating negative correlations between dissonant pathways of
segmented assimilation and outcomes closely related to substance use such as poorer health and academic achievement (Akresh et al., 2016; Portes et al., 2005, & Waters et al., 2010).

Conversely, many past acculturation studies suggest maintenance of familial cultural heritage protects against some of the negative aspects of acculturation, such as engaging in risky substance use behaviors (Chartier, Thomas, & Kendler, 2017; Eitle, Wahl, & Aranda; 2009; Sauceda et al., 2018). Consequently, the proposal for this study hypothesized the selective acculturation group would have, on average, the lowest scores on measures of substance use and fewest substance use related problems of the three groups. Further, the proposal predicted stronger associations between the acculturative dissonance group and substance use problems than between the acculturative dissonance group and substance use frequency. This assumption flows from the work of Cooper (1994) and the development of the Drinking Motives Questionnaire (DMQ), which revealed stronger correlations between coping-related alcohol use and drinking problems than coping-related alcohol use and both alcohol use frequency and quantity.

H2: Individuals in the dissonant acculturation group will report higher levels of developmental strain and stress coping. These hypotheses arise from past work suggesting adolescents and college students who perceive greater cultural incongruities in their lives also have increased depressive symptoms (Cano et al., 2015). Theoretically, Latinx emerging adults who perceive greater cultural incongruities in their own lives may feel pressure to exhibit behaviors and values of both U.S. and Latinx cultural streams (Cano et al., 2015). Consequently, these pressures, expectations, and conflicts with family members stemming from these pressures and expectations may increase an individual’s level of developmental strain. Further, research demonstrates consistently that processes of assimilation and acculturation result in elevated
levels of stress for many (Lorenzo-Blanco, 2016; Perreira et al., 2019; Zamboanga et al., 2009). Without as many familial supports and decreased levels of human capital available at their disposal, the proposal for this project hypothesized Latinx EAs who experienced dissonant acculturation would have higher levels of stress, and thus use substances as a means to cope with stress more frequently. This hypothesis is based largely off segmented assimilation theory itself, wherein Latinx children who experience dissonant acculturation meet societal and interpersonal challenges directly and oftentimes in isolation, without parental/caregiver support, and without family capital and resources (Portes & Rumbaut, 2001). This acculturative dissonance often results in downward assimilation (Portes & Rumbaut, 2001). Previous research links downward assimilation to a host of negative social outcomes such as arrest, incarceration, and poorer academic achievement (Portes et al., 2005; Waters et al., 2010).

**H3:** Developmental strain and stress coping will be positively and significantly associated with all substance use outcomes, although expected differences in effects between groups remains unclear. This hypothesis emanates from extensive previous research documenting associations between these variables. For example, Smith et al. (under review) found significant, positive correlations between their developmental strain subscale and AUDIT scores ($r=.29, p=.006$). Furthermore, multiple examples of prior research detail consistently the associations between stress coping and substance use (Cooper, 1994; Hauck-Filho et al., 2012; Kuntsche & Kuntsche, 2009).

**H4:** Finally, this project’s proposal predicted the inclusion of stress coping and developmental strain would mediate partially the associations between segmented assimilation and substance use with Latinx emerging adults. In other words, preliminary hypotheses predicted significant
associations between patterns of acculturation and substance use both before and after the inclusion of developmental strain and stress coping as mediating variables.

**Sample and Survey Methodology**

The Institutional Review Board (IRB) at the University of Illinois Urbana-Champaign approved all research procedures on December 10th, 2019, prior to full-survey data collection. This research project tested associations between segmented assimilation, stress coping, development, and substance use with Latinx EAs. In theory, divergent pathways of assimilation comprise varying levels of stress, which in turn predict various substance use outcomes (Akresh, et al., 2016; Ibañez et al., 2015; Lorenzo-Blanco et al., 2016; Perreira et al., 2019; Waters et al., 2010). Similarly, increased developmental strain during emerging adulthood may be associated with increased levels of substance use (Clary et al., under review).

As outlined in the IRB protocol, there were no significant risks associated with participation in this study. The greatest risk posed to participants was the possibility malfeasant third parties could identify participants’ responses by using Amazon MTurk worker IDs. To minimize this risk, this study used REDCap, a Health Insurance Portability and Accountability Act (HIPAA) compliant online survey environment to distribute surveys and store data. Other risks included feelings of discomfort associated with answering sensitive questions pertaining to substance use or documentation status, but again, all responses came with a “prefer not to answer” option to empower respondents to skip questions they deemed particularly distressing. Furthermore, the consent form and full survey provided contact information for local and national mental health and social services, trauma support groups, and legal and financial services. Regarding the electronic survey and screening, only the primary researcher had access to password-protected data, thus enhancing confidentiality and security. The primary researcher
deleted any identifying information received from MTurk from the final dataset. Finally, at multiple times throughout the research process, participants received encouragement to complete their surveys in private locations. This study produced only aggregate-level data from survey responses and password-protected university servers stored all electronic data.

**Research Design**

This analytical project used a cross-sectional, dual-mediation research design (Figure 3.) with a sample size of \( n=534 \) individuals. Bentler & Chou (1987) recommend a 5:1 ratio of sample size to free parameters, so a sample size of \( n=534 \) exceeded this recommendation. Cross-sectional data were useful as it allowed for relatively quick collection while measuring prevalence for all variables under investigation. Further, cross-sectional data allowed for the analysis of multiple outcomes and generated deep descriptive analyses. In this case, a retrospective cohort study allowed for examination of historic, underlying factors associated with current substance use patterns with Latinx EAs. Furthermore, since there was no analysis of longitudinal associations between variables, there was no sample loss or attrition. Along with the benefits of conducting cross-sectional research, there were implicit limitations as well. The limitations portion of this paper addresses these in more detail, but some considerations are as follows. Firstly, this data was only a snapshot in time of participants. This project examined variables relating to acculturation and family dynamics from participant’s childhood/adolescent years spent with parents/primary caregivers. Further, respondents answered questions about the current state of their development, the extent to which they currently use substances, and whether or not their substance use is a means to cope with stress. With cross-sectional designs, one cannot make causal inferences. This study has a clear temporal order, however, so although this project did not determine causes of Latinx EA substance use per se, analytical output reflect
relatively clear, standardized effects between variables (i.e. substance use, developmental strain, stress coping, and intergenerational patterns of acculturation).
Figure 3. Multiple mediation model with single, categorical predictor

$M_1 = \text{Developmental Strain (EARS)}$

$X_1 = \text{Dissonant}$

$X_2 = \text{Consonant}$

$X_3 = \text{Selective}$

$Y = \text{Substance Use}$

$M_2 = \text{Stress Coping (DMQ-R)}$

$X_1 a_1 / X_2 a_1 / X_3 a_1$

$X_1 b_1 / X_2 b_1 / X_3 b_1$

$X_1 c / X_2 c / X_3 c$

$X_1 c' / X_2 c' / X_3 c'$

$X_1 a_2 / X_2 a_2 / X_3 a_2$

$X_1 b_2 / X_2 b_2 / X_3 b_2$
Similar to cross-sectional data collection, using dual-mediation analyses allowed for richer description of relationships between segmented assimilation and substance use with Latinx EAs. As seen in Figure 3, two mediators (stress coping and developmental strain) operate in parallel. With a path analysis using structural equation modeling (SEM) and bootstrapped confidence intervals, *Mplus* estimated the between-group effects of developmental strain and stress coping on multiple indicators of substance use and substance use related problems (Rosseel, 2012; Schoemann, Boulton, & Short, 2017). Bootstrapped confidence intervals allowed for the empirical generation of a sampling distribution for testing indirect effects (Schoemann et al., 2017). Previous literature links stress to both pathways of acculturation and substance use outcomes (Cooper, 1994; Ibañez et al., 2015; Lorenzo-Blanco et al., 2016; Zamboanga et al., 2009). Effects of stress coping on substance use outcomes with Latinx EAs is a relationship bearing further examination, however, as no present research tests these relationships. Similarly, prior research links developmental strain to increased substance use during emerging adulthood (Clary et al., under review), but we know nothing about associations between segmented assimilation and developmental strain. Consequently, this project addresses gaps in EA substance use literature by testing for effects of developmental strain on substance use outcomes with differentially assimilated Latinx EAs.

**MTurk**

Crowdsourcing as both a concept and practical tool is a recently emerged Web 2.0 based phenomenon that has garnered increasing attention from scholars and practitioners over the past decade. Given the complex intersections of people, technology, societal systems, and information in crowdsourcing systems, there is great potential for research design (Zhao & Zhu, 2014). With MTurk specifically, researchers have access to a large population of potential
participants. Recent attempts to measure the size of the MTurk worker pool have been strictly exploratory but estimate upwards of 750,000 unique individuals may visit the site within a given month (Sheehan, 2017). In addition to overall size, MTurk workers represent a more diverse array of people than student samples often utilized in many research studies (Sheehan, 2017). For instance, a recent study of the demographics of samples of U.S. parents collected from MTurk and other online “communities” showed MTurk and other social media platforms recruited more socioeconomically diverse parents than traditional convenience samples obtained via conventional recruitment methods (Dworkin, Hessel, Gliske, & Rudi, 2016). In addition, MTurk samples tend to be younger (roughly 88% of MTurk workers are under 50, compared to 66% of working U.S. adults) and more geographically representative of the U.S. population (Buhrmester, Kwang, & Gosling., 2016; Sheehan, 2017). Additionally, social science researchers employ MTurk with comparable results to other more traditional sampling methods, especially when they include validity checks in their research designs (Casler, Bickel, & Hackett, 2013; Mason & Suri, 2012; Muench, van Stolk-Cooke, Morgenstern, Kuerbis, & Markle, 2014). Finally, researchers from a variety of disciplines using MTurk have successfully replicated previous studies that used more traditional sampling methods (Berinsky, Huber, & Lenz, 2012; Berinsky, Quek, & Sances, 2012; Heer & Bostock, 2010; Simons & Chabris, 2012; Suri & Watts, 2011). Thus, MTurk can be an excellent data collection tool for emerging adult researchers looking to expand the generalizability of projects beyond the historical trend of EA research involving predominantly Caucasian, affluent, undergraduate students. Mturk, however, is not without limitations.

Past research suggests MTurk workers possess some fundamental differences when compared to the general population. They tend to be, on average, less religious, more educated,
and have higher rates of unemployment or underemployment than the general population (Goodman, Cryder, & Cheema, 2013, Ipeirotis, 2010). Higher rates of unemployment or underemployment among MTurk workers may be attributable to the use of MTurk by many workers in the United States as a significant or primary source of income (Ipeirotis, 2010). The overall lack of religiosity can be problematic considering research demonstrates consistently the negative associations between religiosity and substance use outcomes with Latinx samples (Jankowski et al., 2018; Kirk & Lewis, 2013; Meyers et al., 2017; Sanchez et al., 2015; Yonker et al., 2012). This research has extended to Latinx EA samples as well (Escobar & Vaughan, 2014; Palamar et al., 2014; Porche, Fortuna, Wachholtz, & Stone, 2015). In contrast to less religiosity, however, having greater representation from unemployed emerging adults would differ from the significantly higher employment rates seen in samples from many clinical trials, and thus contribute to existing research literature (Susukida, Crum, Ebnesajjad, Stuart, & Mojtabai, 2017). Finally, the ranges of SES and ages of MTurk workers could be less diverse than the general population (McDuffie, 2019). While age is not a concern since this project sampled exclusively from emerging adults ages 18-29, decreased variance in SES could affect results. We might expect higher rates of alcohol and cannabis use than in the general population if indeed the sample trends higher in terms of average SES. Past research found positive associations between higher childhood family SES and both alcohol and cannabis use during young adulthood (Patrick, Wightman, Schoeni, & Schulenberg, 2012).

In addition to demographic differences, there are concerns about poorly performing workers or “spammers.” In some cases, these spammers cheat, submit incomplete surveys, or use computer software to generate acquiescence responses in order to receive payment (Chan & Holosko, 2016). Currently, Amazon maintains a program wherein information requesters can
track the online reputation of MTurk workers, and there are methods with which requesters can
guard against spammers. Scattering multiple validity check questions throughout the survey and
screening potential participants are two such ways of ensuring a sample meets various
demographic criteria and participants are satisfactorily completing surveys. These considerations
aside, MTurk has the potential to advance social work research effectiveness. In similar fields,
researchers have used MTurk data to validate instruments, facilitate interventions, recruit
comparison groups for psychological studies, and conduct surveys (Chan & Holosko, 2016).
There are currently very few examples of the use of MTurk or crowdsourcing in the social work
literature (Chan & Holosko, 2016; Litman, Robinson, & Abberbock, 2017), so this study will
further the use of technology within the profession.

**Sampling Methods**

This project recruited an online, non-probability convenience sample of self-selected
Latinx EAs from Amazon’s MTurk, a crowdsourcing marketplace consisting of online “workers”
who complete tasks virtually. Amazon maintains a large database of registered workers who
complete surveys for remuneration. Outside entities contract these workers to complete “human
intelligence tasks” (HITs), such as beta testing software or participating in simple data validation
and research studies. HITs on MTurk range in demand from 1 minute to 30 minutes or more.
Upon completion of a HIT, publishers of the specific task—“requesters”—compensate the
worker. Via this system, self-selected and eligible research participants completed a survey
containing various scales relating to substance use, acculturation patterns, and emerging
adulthood. More specifically, this study directed first or second generation Latinx participants
between the ages of 18 and 29 to complete various substance use and acculturation measures.
Qualifying individuals emerged from a pool of MTurk “workers”. To be included in this study,
participants reported: 1) being U.S. residents between the ages of 18 and 29 willing to participate in an online survey research study, 2) an ability to complete the required surveys in English, 3) consuming at least one alcoholic beverage in the past year, and 4) identifying as 1st or 2nd generation Latinx, Hispanic, Chicanx.

From the outset, this project employed a qualification comparator from the MTurk application-programming interface (API). A comparator is part of the qualification requirement data structure embedded within MTurk, where requesters can limit HITs to workers who meet certain criteria. For example, this project used the “in” comparator to ensure workers would be in the United States prior to completing the initial screening. The initial screening HIT—titled “Let us know a little about you. If eligible, we will send you a link to our full survey!”—consisted of four open-ended questions: “When is the last time you had a drink containing alcohol?”, “Please enter your current age (in numbered years).”, “Are you or could you be considered Hispanic, Latino/a/x, and/or Chicano/a/x?”, and “If yes, are you a 1st or 2nd generation U.S. Latino/a/x?” Asking potential participants to self-identify before they know the purpose of a study is a novel way to ensure respondents are not lying about their membership to a particular group (Smith, Sabat, Martinez, Weaver, & Xu, 2015). The intention behind using open-ended questions centered on reducing the risk screening participants would “luck” into survey eligibility by answering questions “correctly” from a limited set of response options. In other words, the belief was that open-ended questions would screen out ineligible participants more effectively. According to the Amazon Requester account tied to this project, respondents took an average of 64 seconds to complete the screening HIT, and they received $.01 for their time and work. The initial request for screening HITs submitted to MTurk was large (n=5,000), with the hope of recruiting the entire sample in one batch. This turned quickly to requesting and publishing
smaller batches after seeing screening completion rates drop significantly after around seven to 10 days. This phenomenon is likely due to HITs losing prominence rapidly over time and MTurk eventually relegating HITs to more obscure locations where only diligent workers looking specifically for a survey like this one may find it (i.e. using keywords like “survey” or “alcohol use”; Kapelner & Chandler, 2010). Further, it was believed that publishing smaller batches created an illusion of scarcity, which may have motivated some workers to accept and complete the screening HIT more quickly. Between December 10, 2019 and March 2, 2020, this project screened 12,297 workers.

After publishing screening HITs, this study employed various qualification types to minimize the chances of having duplicate respondents. For example, respondents who completed the screening HIT received a “Prior EXP” qualification, indicating they had completed the screening HIT previously. Furthermore, based off responses to screening questions, eligible participants received an “Eligible Worker” qualification. This qualification ensured only workers who met eligibility criteria would be able to accept and complete the full survey HIT. Finally, it is possible, although extremely unlikely one person would have multiple accounts and complete the full survey multiple times. Amazon requires workers to provide a valid social security number (among other things) when setting up a new account to prevent one person from registering multiple times. Eligible workers who completed the screening received the “eligible worker” qualification, and only they could accept the HIT for the full survey.

The full survey—titled “Substance Use & Acculturation Study”—prompted interested workers to complete a short 15-20 minute survey on substance use and acculturation. Within roughly the same period as workers completed screening HITs, MTurk would receive requests
for batches of full survey HITs on a rolling basis. In other words, this project submitted requests for full survey batches as more eligible workers completed screenings. Similar to initial screenings, initial requests for full survey HITs were larger \( (n=100) \) and then moved to smaller ones \( (n=25) \) in an effort to create an illusion of scarcity and encourage eligible workers to accept and complete the HIT more quickly. Additionally, publishing smaller batches allowed the HIT to remain at or near positions of prominence on the overall HIT menu (Kapelner & Chandler, 2010). Further, in an effort to encourage eligible workers who had not yet accepted the full survey HIT or completed the full survey, the author sent messages to workers using their worker IDs via Amazon Worker Services and the “NotifyWorkers” operation. Respondents who already completed the full survey received a “Prior Survey EXP” qualification, indicating they were ineligible to complete the full survey HIT a second time. All workers who completed the full survey received $2.00 for their work and time, and workers took, on average, 13.3 minutes to complete the full survey.

Of all Mturk workers screened \( (N=12,792) \), 92.8\% \( (n=11,871) \) were ineligible based off responses to screening questions (e.g. older, not 1\textsuperscript{st} or 2\textsuperscript{nd} generation Hispanic/Latinx, or no past year alcohol use). Of the 7.2\% of eligible workers \( (n=921) \), 41.7\% \( (n=384) \) did not accept the HIT or complete the full survey. Despite messaging eligible workers and encouraging participation, this 58.3\% completion rate is slightly below the 60 to 68\% completion rate reported by other studies (Berinsky et al., 2012; Buhrmester et al., 2016), and is likely due to the length and content of this project’s survey. At the close of data collection, 537 eligible workers had submitted surveys. Of those workers, 6.1\% \( (n=33) \) were removed from final analyses due to demonstrating excessive quickness (< six minutes) in completing the survey and/or missing validation questions embedded within the survey, resulting in a final sample of 504 surveys. This
sample loss is lower than in other studies (Dumas, Maxwell-Smith, Davis, & Giulietti, 2017, Smith et al., 2015), and speaks to the potential attentiveness of the MTurk worker pool as a whole (Hauser & Schwarz, 2015). This information is contained in the consort diagram under Figure 4.
Figure 4. Dissertation study consort diagram.

Participants Screened for Eligibility (N=12,792)

Eligible Workers (n=921)

Surveys Completed (n=537)

Final Survey Total (n=504)

92.8% (n=11,871) Excluded (ethnicity, generation, substance use, age)

41.7% (n=384) did not complete full survey

6.1% (n=33) corrupted responses (completed too quickly, missed validation items)
Data Analysis

Analyses with all data collected via MTurk and REDCap used either SPSS Statistics 25 (IBM Corp, 2017) or *Mplus* version 7.31 (Muthén & Muthén, 2017), a statistical modeling program providing researchers with a flexible and powerful tool for analyzing data. Missing data is a ubiquitous problem in research and mismanagement of it can greatly compromise the validity of a study’s findings (Lang & Little, 2016). In the past few decades, researchers and statisticians have developed multiple powerful methods for dealing with this exact problem. Multiple Imputation (MI, Rubin, 1978; 1987), multiple imputation with chained equations (MICE, Raghunathan et al., 2001; van Buuren & Groothuis-Oudshoorn, 2010), and full information maximum likelihood (FIML, Anderson, 1957) are all examples of principled treatments for missing data. Researchers and statisticians consider these techniques more robust methodologically speaking compared to more antiquated, insufficient missing data replacement techniques like single imputation and non-response weighting approaches (Lang & Little, 2016). As part of this study’s design, participants were not able to leave items empty if they wanted to move on to the next survey. As mentioned, surveys offered participants a “prefer not to answer” option for items deemed to be personally sensitive or invasive. Prior to conducting any formal analyses or tests of statistical assumptions, missing data analyses examined missing data patterns for all variables used in the models. To address missing data (between 0 to 1.7% at item level), analyses employed the FIML estimator in *Mplus*. FIML treats all observed predictors as one, single-item latent variable, and is a superior approach to listwise deletion and mean substitution approaches to managing missing data (Little & Rubin, 2002). Thus, every individual contributes to the data they have available for each scale, and listwise deletion does not remove any cases from the analysis. Assuming data were missing at random (MAR), parameter estimates and
standard errors for this project were unbiased by the small amount of missing data (Enders, 2011). Again, the percentage of missing, item-level data ranged from 0-1.7%, well under the 5-10% thresholds identified by some researchers as the points where statistical analyses are likely to be biased (Bennett, 2001; Dong & Peng, 2013; Schafer, 1999). As such, it is reasonable to assume the small amount of missing, item-level data had little to no effect on model estimates.

After accounting for missing data, analyses tested statistical assumptions regarding sampling distribution normality (e.g. skew, kurtosis, % of sample +/- 2 standard deviations, etc.) using Shapiro-Wilk’s W test, since the present study’s sample size was relatively small. Similarly, analyses tested for multivariate normality using Mardia’s tests of skewness and kurtosis, along with residual tests. For the latter, SPSS regressed each variable included in the model onto all other variables, then saved the residuals. If all residuals were not normally distributed, then the data did not meet the assumption of multivariate normality. As outliers emerged in the data via statistical tests of normality, the author windsorized the data so any extremely high or low observations (e.g. +/- 3 S.D. of the mean) were reset to the highest or lowest reliable levels observed within the data ( +/- 2 S.D. of the mean; Dixon, 1960). Along with testing for normal distributions and outliers, analyses tested for normally distributed standard errors as well. Statistical research demonstrates normal probability plots for standardized residuals and Shapiro-Wilk’s normality tests are sufficient for testing the assumption of residual normality (Garson, 2012). To test for homoscedasticity, SPSS constructed residual scatterplots. According to statistical literature, if data meet statistical assumptions of heteroscedasticity, residuals will form a random cloud of dots (Garson, 2012). To account for heterogeneity in variances between groups, analyses included Brown & Forsythe’s test of homogeneity of variances, which many researchers consider a more robust test when absolute deviation scores
are skewed (Brown & Forsythe, 1974; Garson, 2012). Analyses included similar scatterplots to check for assumptions of linearity in the data. Finally, to test for collinearity in the data, collinearity diagnostics in SPSS checked for problems with multicollinearity such as variance inflation factor (VIF) values greater than 5, multiple eigenvalues close to 0, and condition indices above 15 (IMB Corp., 2017).

Proceeding with formal data analyses according to model specifications, descriptive data analyses and between-group equivalency tests (ANOVAs) in SPSS explored mean differences between groups across various dependent and independent variables. Two dummy variables represented three acculturation profiles—with dissonant acculturation serving as the reference group—for all regression analyses. Again, if variances between groups were not equal based off tests of homogeneity of variances, analyses proceeded with Brown-Forsythe tests to calculate mean differences between groups. Brown-Forsythe tests are robust to violations of normality and are suitable alternatives to Bartlett’s tests for equal variances, which are sensitive to unbalanced research designs (Brown & Forsythe, 1974). As part of this step, a priori hypotheses projected some significant differences between groups (e.g. parental income as a continuous variable) which followed segmented assimilation theory. For example, Latinx EAs with parents who had greater resources (e.g. education, income) would tend to shift towards consonant or selective modes of intergenerational acculturation (Portes & Rumbaut, 2005). Second, *Mplus* version 7.31 performed parameter estimates, which are iterative processes whose result should be a set of parameters producing the best fit to data possible. Conducting analyses in *Mplus* enables researchers to obtain a complete reporting of model fit indices as well. For this project, structural models fit the data well if Confirmatory Factor Indices (CFI) were greater than .90 , Tucker-Lewis Index (TLI) relative fit indices were greater than .90, and the Root Mean Square Errors of
Approximation (RMSEA) and the upper bound of its 90% confidence interval (CI) were less than .08 (Hair, Black, Babin, & Anderson, 2013). Finally, maximum likelihood parameter estimation with robust standard errors and bootstrap confidence intervals (MLR) in Mplus tested structural equation models. These methods are asymptotically robust to non-normality and are superior to maximum likelihood (ML) and conventional robust standard error estimation (MLM; Lai, 2018). Again, Mplus allows for the analysis of latent variable, multi-group models (Muthén & Muthén, 2017). Using this package, analyses tested for between-group effects of developmental strain and stress coping on four indicators of substance use.

Mplus is especially suited for analyzing SEM models for multiple reasons. Firstly, since SEM models are essentially extensions of linear regression, Mplus can analyze several regression equations simultaneously. Second, as is the case in dual-mediation models, mediating variables will need to function as both independent and dependent variables (multiple regression), which this statistical package can account for. Third, Mplus can calculate any regression formulas containing latent variables (e.g. substance use). Finally, Mplus calculates intercepts for all observed and latent variables via simple regression formulas with a single-intercept predictor (Muthén & Muthén, 2017). Using these four types of formulas, Mplus can describe a wide variety of latent variable models, with this dual-mediation model being no exception. A multigroup model in SEM then, essentially asks if not just a single coefficient, but all coefficients are different between groups. The SEM approach will allow identification of which paths change based on the group (e.g. dissonant acculturation vs. selective acculturation) and which remain statistically the same. In addition, analyses constrained one path coefficient to be one in order to assign a metric to each variable in question. Further, initial Mplus syntax constrained analogous paths to be equal between groups and then relaxed constraints if by doing
so the $\Delta \chi^2 > 3.84$, which exceeds the $\Delta \chi^2$ by sacrificing one degree of freedom (at a 95% confidence interval). Similarly, analyses in *Mplus* allowed errors to correlate between items with similar wording for parsimony and to enhance model fit (see Appendix D.). Prior research suggests using cross products of latent variable factors as measures of latent products for use in testing structural equation models, as some cross-products likely share components, and thus their errors likely will correlate (Hermida, 2015). Furthermore, other statistical research suggests some nonrandom measurement errors that analysts should correlate with one another can stem from similarly worded survey or test items (Brown, 2015). Finally, error covariance pathways were omitted in the SEM diagrams for clarity (see Appendix E.), although readers may identify items allowed to co-vary in the *Mplus* syntax found in Appendix D.

In summation, analyses of variance in SPSS explored mean differences between acculturation profiles in various independent and dependent variables, such as AUDIT score and developmental strain (*RQ1 & RQ2*). Substance use outcomes will stem from multiple measures (e.g. AUDIT, CUDIT, SPS). As a result, multiple dependent variables will exist for measuring alcohol and cannabis use prevalence, as well as substance use problems for both alcohol and cannabis. Using *Mplus* and structural equation modeling, statistical analyses investigated between-group effects of developmental strain and stress coping on various indicators of substance use and substance use-related problems (*RQ3*). Finally, mediation analyses using the SPSS PROCESS macro (Hayes, 2017) assessed for indirect effects of intergenerational patterns of acculturation on substance use through two mediating variables (developmental strain and substance use-related stress coping; *RQ4*). The PROCESS macro combines parameter estimates across multiple equations in the relevant model in order to test for, among other things, relative indirect effects of, for example, intergenerational patterns of acculturation on substance use.
outcomes between groups. These indirect effects, along with output from structural equation models produced via *Mplus*, revealed significant intergroup effects of stress coping and developmental strain on substance use. More importantly, analyses of indirect effects determined to what extent, if any, the strain of development during emerging adulthood and substance use-related stress coping accounted for total effects of intergenerational patterns of acculturation on substance use outcomes with Latinx EAs.

**Measures**

For the purposes of this project, participants answered demographic items and completed nine scales in total. Four scales pertain to substance use frequency, quantity, and consumption, two relate to segmented assimilation and patterns of acculturation, one measures coping as reason for substance use, one measures emerging adult reasons for substance use, and one pertains to sociodemographic characteristics of participants. Detailed descriptions of the nine surveys follow here. Readers may find a detailed account of all items used in the full survey in Appendix C.

**Demographic Questions**

Respondents answered a variety of demographic questions as part of their participation in this project. Demographic variables included gender, age, race/ethnicity, employment status, academic enrollment, relationship status, and both personal and parental income. Further, respondents answered demographic questions unique for Latinx EAs, such as “Have you ever experienced discrimination because of your ethnicity?” and “Are you or were you ever a DREAMer or recipient of DACA?”
Youth Adaptation & Growth Questionnaire

As part of their theory of segmented assimilation, Portes and Rumbaut (2001) developed an extensive questionnaire designed to measure various dimensions of youth and adolescent development. Responses from key items within this questionnaire determined into which pattern of intergenerational acculturation respondents fell. In other words, segmented assimilation theory largely drove categorical assignment. For example, the two items: “How often did/do you prefer the American way of doing things?” and “How often did/do your parents (or adults with whom you lived/live) prefer the American way of doing things?” are 5-point Likert scale items (1=never, 5=always). Calculating the difference (range=0-4) between these two items created a variable reflecting intergenerational similarities or differences in acculturation. Similarly, calculating the difference (range=0-4) between scores for the first two items of the SASH-Y (“What languages do/did you usually speak at home?”, “In what languages did your parents/primary caregivers speak to you?”; 1=Only Spanish, 5=Only English) created a variable reflecting intergenerational similarities or differences in English language acquisition. These two new variables, combined with an item reflecting the degree to which respondent’s parents/primary caregivers encouraged them to maintain Spanish speaking, Latin American heritage, practices, and beliefs (1=never, 5=always), formed the basis for categorizing individuals into one of three intergenerational acculturation profiles (e.g. dissonant, consonant, or selective).

For example, this study categorized participants into the dissonant acculturation profile if they reported their parents/primary caregivers never (1) or rarely (2) encouraged them to maintain their cultural heritage, and reported intergenerational acculturation and English language acquisition differences of greater than or equal to two. Based off examinations of
response frequencies and distributions, differences of greater than or equal to two coincided with approximately one standard deviation from the mean for each item (Acculturation Difference, $M=.95$, $SD=1.18$; Language Difference, $M=1.13$, $SD= 1.11$). Further, preliminary analyses considered differential acculturation and language cutoff scores of greater than or equal to three for categorization into the dissonant acculturation profile, but the higher cutoff resulted in a significantly smaller group ($n=85$) which would have negatively affected statistical power. In the end, the acculturation and language difference cutoffs of two or more follow Portes and Rumbaut’s (2001) definition of dissonant acculturation:

Dissonant acculturation takes place when children’s learning of the English language and American ways and simultaneous loss of the immigrant culture outstrip their parents’. This is the situation leading to role reversal, especially when parents lack other means to maneuver in the host society without help from their children (pp 53-54).

Conversely, a participant whose parents/primary caregivers never or rarely encouraged them to maintain their cultural heritage but reported acculturation and English language acquisition differences of less than two was categorized into the consonant acculturation profile. Again, this follows Portes and Rumbaut’s (2001) definition of consonant acculturation:

Consonant acculturation is the opposite situation, were the learning process and gradual abandonment of the home language and culture occur at roughly the same pace across generations. This situation is most common when immigrant parents possess enough human capital to accompany the cultural evolution of their children and monitor it (p .54).
Finally, this study categorized respondents into the selective acculturation profile if they reported receiving frequent encouragement from parents/primary caregivers to maintain their cultural heritage, lived in a co-ethnic or non-segregated community growing up, and reported acculturation and English language acquisition differences of less than two. This, too, follows Portes and Rumbaut’s (2001) definition of selective acculturation:

Selective acculturation takes place when the learning process of both generations is embedded in a co-ethnic community of sufficient size and institutional diversity to slow down the cultural shift and promote partial retention of the parents’ home language and norms. This situation slows down the process while placing the acquisition of new cultural knowledge and language within a supportive context (p. 54).

More broadly, dimensions covered in the Youth Development & Growth Questionnaire include: demographic and background information, academic attitudes and beliefs, cultural practices and attitudes at home, cultural practices and attitudes outside the home, congruence of personal vs. parental values and beliefs, parental human capital (i.e. employment, social supports, education) and patterns of intergenerational conflict. As the theory’s developers constructed this questionnaire, this project operated under the assumption that each item has high face validity. In extant research literature, selected items for this study from the Youth Adaptation and Growth Questionnaire have not been used to predict substance use with Latinx emerging adults.

**Emerging Adult Reasons for Substance Use (EARS)**

Adapted from the Inventory of the Dimensions of Emerging Adulthood (IDEA; Reifmann, Arnett, & Colwell, 2007), the Emerging Adult Reasons for Substance Use (EARS; Smith et al., under review) scale developed in large part due to the modest and inconsistent
associations with emerging adult substance use resulting from the IDEA. In addition, Smith et al. (under review) found low internal consistency estimates in some studies with the IDEA. The original IDEA was comprised of 31 items, and after performing exploratory and confirmatory factor analyses, the final EARS included only 19 items spread across 3 subscales. Each subscale: subjective invulnerability ($\alpha=.82$), developmental strain ($\alpha=.94$), and normative expectancy ($\alpha=.83$) demonstrated good internal consistency and correlated with at least one of Arnett’s dimensions of emerging adulthood. For example, the developmental strain subscale of the EARS demonstrated acceptable construct validity via its moderate correlation with the Inventory of the Dimensions of Emerging Adulthood’s (IDEA) negativity/instability subscale ($r=.58$; Smith et al., under review). The EARS items score on a 1 to 5 Likert scale, with higher scores indicating greater endorsement of each subscale. This study used summed subscale scores to represent the degree with which each respondent endorsed each subscale.

Regarding descriptions of the subscales, subjective invulnerability (# of items = 3, range = 3-15) refers to hypotheses that emerging adults feel there are few to no consequences for engaging in substance use during their late teens through their 20’s. This feeling of invulnerability stems from high optimism as well as perceiving emerging adulthood as a time of experimentation and possibility. Higher scores on subjective invulnerability indicate an increased propensity towards using substances due to feelings that substance use will not derail or negatively affect one’s life. Developmental strain (# of items = 11, range = 11-55), in contrast, maps onto the IDEA’s notions of “feeling in-between” during emerging adulthood and perceiving the time as one of negativity and instability. Higher scores on developmental strain indicate increasing endorsement of feeling motivated to use substances due to perceived developmental pressures (e.g. “I use substances because things are changing so fast during this
time of my life.”). Finally, normative expectancy (# of items = 5, range = 5-25) refers to the idea that many emerging adults feel this period of life is one marked by normalized experimentation with substance use. While similar to subjective invulnerability in some ways, normative expectancy does not deal as much with freedom from consequences as much as it does thinking of substance use as a “rite of passage”. Higher scores on normative expectancy indicate increased endorsement of substance use due to feelings that emerging adulthood is precisely the time to engage in such behavior.

**Drinking Motives Questionnaire-Revised (DMQ-R)**

Researchers define drinking motives as the final decisions whether to consume alcohol and thus the most proximal factor involved with drinking (Kuntsche, Knibbe, Gmel, & Engels, 2005). The DMQ-R, developed by Cooper (1994) encapsulates reasons for alcohol use among adolescents and young adults (13-19 year olds), including: conformity (external/negative), social (external/positive), enhancement (internal/positive), and coping (internal/negative). Reliability scores for the DMQ-R range from α=0.82 (social subscale) to α = 0.88 (coping subscale). Furthermore, in prior research with EA and adolescent samples, drinking motives correlated positively with multiple measures of alcohol use severity, frequency, and quantity ($r=.30$ to $r=.51$; Cooper, Kuntsche, Levitt, Barber, & Wolf, 2016; Grant, Stewart, O’Connor, Blackwell, & Conrod, 2007). Of particular interest to this study is the coping subscale, a measure of alcohol use for reasons of managing negative affectivity. This subscale (# of items = 3, range = 3 to 15) includes items like, “How often do you drink because it helps you when you feel depressed or nervous?” and “How often do you drink to forget about your problems?” Higher scores indicate increasing endorsement of substance use as a means to cope with negative affect or to forget about problems. This study used mean scores to represent the degree with which each respondent
endorsed each subscale. Subscale means—calculated using SPSS—came from available data. In other words, if a respondent selected “prefer not to answer” for an item in the coping subscale of the DMQ-R, the denominator for their mean score calculation decreased by one.

**Alcohol Use Disorders Identification Test (AUDIT)**

The Alcohol Use Disorders Identification Test (AUDIT; Babor, de la Fuente, Saunders, & Grant, 1992), developed by researchers with the World Health Organization, is a 10-item substance use screening tool. Its goal is to assess alcohol-use related problems, alcohol use behaviors, and alcohol consumption (Saunders, Aasland, Babor, De la Fuente, & Grant, 1993). All item scores range from zero to four, and researchers and practitioners use summed scores frequently to paint an overall picture of risky or problematic alcohol use. Total scores range from zero to 40, and higher scores indicate greater problematic alcohol use and alcohol use severity. Cut points for problematic alcohol use historically are around eight. In addition, numerous studies have validated the AUDIT with various populations (sensitivity = 92%, specificity = 93%; Babor & Grant, 1989; Bohn, Babor, & Kranzler, 1995), and it has demonstrated good internal consistency (α = .88) with EA samples (Goldstein, Faulkner, & Wekerle, 2013). See Appendix C for specific items contained within the AUDIT screener. This study used mean scores to represent the degree with which each respondent endorsed each subscale.

**Cannabis Use Disorders Identification Test-Revised (CUDIT-R)**

The CUDIT-R is an abridged version of the original, 10-item CUDIT, containing four items from the original CUDIT as well as four new items. Researchers developed the CUDIT amid concerns cannabis use could be linked to impaired cognitive development and functioning, decreased educational achievement and engagement, driving accidents, poorer cardiovascular functioning, and to the use of more dangerous illicit substances (Adamson & Sellman, 2003).
The CUDIT-R identifies individuals using cannabis in harmful or problematic ways, similar to the AUDIT. In other words, it captures critical features of cannabis consumption patterns, cannabis problems, psychological features, and SUD symptoms. As such, the CUDIT-R has great potential as a brief outcome measure (Adamson et al., 2010). Unlike the AUDIT, however, the CUDIT-R measures a person’s cannabis use during the past six months rather than the past year. As a result, this study did not administer the CUDIT-R to participants who reported no cannabis consumption in the past six months. Scores on the cannabis-specific scale range from 0-32, with each individual item score ranging from 0-4, identical to the AUDIT. Previous validation studies with the CUDIT revealed good internal consistency ($\alpha=0.84$) and validity with sensitivity/specificity levels of 73% and 95% respectively for current cannabis use disorders (Adamson & Sellman, 2003). The CUDIT-R measures patterns of cannabis use as well as problems associated with use and performed similarly regarding validity, with optimal sensitivity (91.3%) and specificity (90%) levels at a cutoff score of 13 (Adamson et al., 2013). Furthermore, the CUDIT-R effectively distinguished between various levels of cannabis use and cannabis use disorders, suggesting it may be useful for rating problem severity (Adamson et al., 2010). Consequently, CUDIT-R scores could better facilitate matching of respondents to treatment intensity (Adamson et al., 2010). Finally, compared to the CUDIT, the CUDIT-R demonstrated superior internal consistency ($\alpha=0.91$).

**Substance Problem Scales—Alcohol & Cannabis (SPS)**

The Substance Problem Scale (SPS) is a subscale of the Global Appraisal of Individual Needs (GAIN; Dennis, Titus, White, Unsicker, & Hodgkins, 2003), a widely utilized, valid, and reliable biopsychosocial substance use assessment. The SPS (past month version, $\alpha = .85$) itself is a reliable and valid measure of self-reported consequences relating specifically to substance
use (Conrad, Dennis, Bezruczko, Funk, & Riley, 2007; Dennis, Chan, & Funk, 2006). The scale consists of 12 items for alcohol and 10 for cannabis, which include DSM substance use disorder diagnostic criteria and other indicators of substance use related problems. As with the AUDIT and CUDIT, higher scores indicate more issues with either alcohol or cannabis use. The entire sample of participants received the SPS for alcohol and cannabis as part of their surveys, as they both measure lifetime prevalence of problems associated with alcohol and/or cannabis use. With slight changes to item wording, the substance problem scale can measure substance use problems relating to both alcohol and cannabis separately. Finally, the SPS has demonstrated validity (sensitivity = 83%, specificity = 95%) and reliability ($\alpha = 0.85$) in predicting substance use disorders with a nationally representative sample of emerging adults (Smith, Bennett, Dennis, & Funk, 2017). This study used full-scale mean scores (range = 0-5) to represent the average degree with which each respondent endorsed each item on both the SPS Alcohol and SPS Cannabis. SPS means—calculated using SPSS—came from available data. In other words, if a respondent selected “prefer not to answer” for an item in either Substance Problem Scale, the denominator for their mean score calculation decreased by one. As such, higher mean scores represent greater recency and variety of alcohol or cannabis related problems.

**The Short Acculturation Scale for Hispanic Youth (SASH-Y)**

The SASH-Y (Barona & Miller, 1994) is an extension of the Short Acculturation Scale for Hispanics (SASH; Marin, Sabogal, Marin, Otero-Sabogal, & Perez-Stable, 1987). The SASH-Y allows researchers and practitioners the ability to identify—quickly and reliably—degrees of acculturation for Hispanic/Latinx youth. The original scale included 12 items split across three subscales: ethnic social relations, media, and language use. Responses to all items are on a 5-point Likert scale (1=Only Spanish, 5=Only English). Scale users may calculate
subsacle means to determine levels of acculturation, with higher scores indicating greater orientations towards U.S. culture. Prior studies with the SASH-Y demonstrate its excellent internal consistency (α=.94; Barona & Miller, 1994) and validity (Norris, Ford, & Bova, 1996). Regarding the latter, one validation study found positive correlations between respondent’s subjective acculturation scores and their overall ratings of closeness to U.S.-born Caucasians (r=.24) and African-Americans (r=.25), evincing associations between higher levels of acculturation and feelings of closeness with other U.S. ethnic groups (Norris et al., 1996). Example items from the SASH-Y include “What languages do/did you usually speak at home?” and “In what languages did your parents/primary caregivers speak to you?”

Power Analysis

A Monte Carlo Power Analysis for Indirect Effects program (Schoemann et al., 2017), performed statistical power analyses for sample size estimation prior to conducting any formal data collection. The analysis estimated pathway coefficients based on data from various studies reporting standardized parameter values and pathway coefficients. More specifically, the analysis used correlation estimates based off previous studies’ reported associations between acculturation gaps (i.e. cultural congruity), stress coping, or dimensions of emerging adulthood and substance use outcomes and impairment with youth and adolescents (Cooper, 1994; Cano et al., 2015; Lau et al., 2005; Martinez, 2006; Smith et al., under review). The standardized effect sizes and pathway coefficients in these studies ranged from .17-.33, so for the purpose of this smaller study, analyses used the highest reported correlations or pathway coefficients for the power analysis. These effect size estimates were all small to medium according to Cohen’s (1988) criteria. With a confidence level of .95 and target power of 0.8, the initially proposed
sample size of \( N=500 \) would prove more than adequate for detecting both direct and indirect effects. More specifically, using larger pathway coefficients to estimate the necessary sample size for testing direct and indirect effects, a sample of \( N=350 \) would be sufficiently powered. This was reassuring, since past research with MTurk recruited samples suggests up to 10% data loss due to participant’s failing to answer validation questions or completing the survey too quickly (Dumas et al., 2017; Smith et al., 2015).

**Ethical Considerations**

As outlined in the IRB protocol, there were no significant risks associated with participation in this study. The greatest risk posed to participants was the possibility malfeasant third parties could identify participants’ responses by using Amazon MTurk worker IDs. To minimize this risk, this study used REDCap, a Health Insurance Portability and Accountability Act (HIPAA) compliant online survey environment to distribute surveys and store data. Other risks included feelings of discomfort associated with answering sensitive questions pertaining to substance use or documentation status, but again, all responses came with a “prefer not to answer” option to empower respondents to skip questions they deemed particularly distressing. Furthermore, the consent form and full survey provided contact information for local and national mental health and social services, trauma support groups, and legal and financial services. Regarding the electronic survey and screening, only the primary researcher had access to password-protected data, thus enhancing confidentiality and security. The primary researcher deleted any identifying information received from MTurk from the final dataset. Finally, at multiple times throughout the research process, participants received encouragement to complete their surveys in private locations. This study produced only aggregate-level data from survey responses and password-protected university servers stored all electronic data.
CHAPTER 4: STUDY RESULTS

Missing data in this study were few (0 to 1.7% at item-level), and FIML accounted for any missing item-level data. Statistically significant ($p<.05$) Shapiro Wilk’s normality tests and Mardia’s tests of skewness and kurtosis suggested data for this project were not normally distributed across multiple independent and dependent variables. Thus, analyses proceeded with SEM using maximum likelihood parameter estimates (MLR) and bootstrap confidence intervals. These methods are asymptotically robust to non-normality and are superior to maximum likelihood (ML) and conventional robust standard error estimation (MLM; Lai, 2018). Upon viewing standardized residual versus standardized predicted value scatterplots, there appeared to be no violations of linearity or homoscedasticity in the final data. Similarly, there appeared to be no violations of multicollinearity as VIF values associated with predictor variables were mostly equal to one, and all were less than 2.03. Further, there were few cases of multiple Eigenvalues close to 0, and condition indices were always less than 15.

Demographics

From the full sample of 504 respondents, the author categorized 142 (28.2%) into the dissonant acculturation group, 134 (26.6%) into the consonant acculturation group, and 228 (45.2%) into the selective acculturation group. This categorical distribution aligns with existing research on segmented assimilation, suggesting selective acculturation is the norm within immigrant families and dissonant acculturation is more atypical (Waters et al., 2010). Readers may view sociodemographic comparisons between the full sample and dissonant, consonant, and selective acculturation groups in Table 1.
With respect to the full sample, descriptive analyses revealed the mean age of the full sample was approximately 24 years. Over 80% of the full sample identified as heterosexual, roughly 52% as female, and just over 37% as single. Over one in five participants reported having at least one child, and the average age of their eldest was 4.61 years. Regarding the economic situations of participants, average past year income was around $22,000. Given the nebuluous nature of measuring income during emerging adulthood (Williams et al., 2017), respondents answered questions about parental/primary caregiver income and support as well. In response to the question, “Using your best guess, what was the most money your parents/primary caregivers made in a year when you were growing up?” the average parental/primary caregiver annual income was just under $40,000. Further, respondents reported their parents/primary caregivers currently paid for approximately 24% of their living expenses. Also regarding capital, 92% of the full sample reported current full- or part-time employment, and just under 50% reported current school enrollment. As to immigration and ethnicity, 23.4% of the full sample indicated they are 1st generation U.S. residents or citizens. Of these, the average age of arrival to the United States was just over nine years. Only 9.3% of study participants reported being current or former DREAMers or recipients of DACA, and 88.3% indicated they are current legal permanent residents (LPR) or citizens of the United States. In other words, approximately 12% of the full sample are either nonimmigrants (e.g. temporary workers or students) or undocumented immigrants. This number is lower than national estimates suggesting almost a quarter (23%; Radford, 2019) of the U.S. foreign-born population are undocumented immigrants. Finally, 21.6% of the full sample reported arrest or incarceration at least once in their lives, and the average age of onset of substance use was almost 16 years.
Table 1. Sociodemographic data for Full MTurk Sample and Members of Dissonant, Consonant, and Selective Acculturative Groups.

<table>
<thead>
<tr>
<th>Descriptor</th>
<th>Full Sample (n=504)</th>
<th>Dissonant (n=142)</th>
<th>Consonant (n=134)</th>
<th>Selective (n=228)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n (M)</td>
<td>% (SD)</td>
<td>n (M)</td>
<td>% (SD)</td>
</tr>
<tr>
<td>Age</td>
<td>24.18</td>
<td>2.97</td>
<td>24.0</td>
<td>2.84</td>
</tr>
<tr>
<td>Gender (Female)</td>
<td>260</td>
<td>51.6%</td>
<td>67</td>
<td>47.2%</td>
</tr>
<tr>
<td>Sexual Orientation (Heterosexual)</td>
<td>424</td>
<td>84.1%</td>
<td>118</td>
<td>83.1%</td>
</tr>
<tr>
<td>Generation U.S. (1st Generation)</td>
<td>118</td>
<td>23.4%</td>
<td>45</td>
<td>31.7%</td>
</tr>
<tr>
<td>Age of Immigration</td>
<td>9.04</td>
<td>6.81</td>
<td>7.69</td>
<td>4.76</td>
</tr>
<tr>
<td>School Enrollment (Not Enrolled)</td>
<td>255</td>
<td>50.6%</td>
<td>86</td>
<td>60.6%</td>
</tr>
<tr>
<td>Relationship Status (Single)</td>
<td>187</td>
<td>37.1%</td>
<td>38</td>
<td>26.8%</td>
</tr>
<tr>
<td>Employed at Least Part-Time</td>
<td>460</td>
<td>92.0%</td>
<td>139</td>
<td>97.9%</td>
</tr>
<tr>
<td>Personal Income (Past Year)</td>
<td>21,784</td>
<td>14.173</td>
<td>17,943</td>
<td>7,320</td>
</tr>
<tr>
<td>Parental Income (Best Year)</td>
<td>39,167</td>
<td>42.864</td>
<td>16,093</td>
<td>13,602</td>
</tr>
<tr>
<td>Parental Support/Living Expenses (%)</td>
<td>23.9</td>
<td>31.6</td>
<td>10.1</td>
<td>17.4</td>
</tr>
<tr>
<td>Age of Onset – Substance Use (years)</td>
<td>16.02</td>
<td>3.32</td>
<td>13.87</td>
<td>1.91</td>
</tr>
<tr>
<td>DREAM/DACA (Yes)</td>
<td>47</td>
<td>9.3%</td>
<td>19</td>
<td>13.4%</td>
</tr>
<tr>
<td>Citizen/LPR (Yes)</td>
<td>445</td>
<td>88.3%</td>
<td>105</td>
<td>73.9%</td>
</tr>
<tr>
<td>Children (Yes)</td>
<td>109</td>
<td>21.6%</td>
<td>38</td>
<td>26.8%</td>
</tr>
<tr>
<td>Age of Eldest Child</td>
<td>4.61</td>
<td>3.08</td>
<td>4.39</td>
<td>1.99</td>
</tr>
<tr>
<td>Arrested/Incarcerated (Yes)</td>
<td>108</td>
<td>21.6%</td>
<td>57</td>
<td>40.1%</td>
</tr>
</tbody>
</table>
A majority of the full sample hailed from Mexico \((n=267, 53.9\%)\), with South America \((n=56, 11.3\%)\) and Puerto Rico \((n=46, 9.3\%)\) being the second and third largest providers of immigrants respectively. These findings are consistent with current demographic and immigration trends wherein a vast majority of immigrants to the United States come from Mexico, Puerto Rico, and South American nations like Colombia, Ecuador, and Peru (Flores, 2017). The only significant difference across acculturation profiles was that a significantly larger proportion of participants assigned to the dissonant acculturation profile reported Honduran descent compared to those assigned to the selective acculturation profile. Readers may view more detailed nationality or national origin data in Table 2.
Table 2.

<table>
<thead>
<tr>
<th>Descriptor</th>
<th>Full Sample (n=504)</th>
<th>Dissonant (n=142)</th>
<th>Consonant (n=134)</th>
<th>Selective (n=228)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Mexican</td>
<td>267</td>
<td>53.9%</td>
<td>76</td>
<td>53.5%</td>
</tr>
<tr>
<td>Puerto Rican</td>
<td>46</td>
<td>9.3%</td>
<td>10</td>
<td>7.0%</td>
</tr>
<tr>
<td>Salvadoran</td>
<td>22</td>
<td>4.4%</td>
<td>10</td>
<td>7.0%</td>
</tr>
<tr>
<td>Honduran</td>
<td>15</td>
<td>3.0%</td>
<td>7</td>
<td>4.9%ₐ</td>
</tr>
<tr>
<td>Guatemalan</td>
<td>21</td>
<td>4.2%</td>
<td>9</td>
<td>6.3%</td>
</tr>
<tr>
<td>Cuban</td>
<td>26</td>
<td>5.3%</td>
<td>6</td>
<td>4.2%</td>
</tr>
<tr>
<td>South American</td>
<td>56</td>
<td>11.3%</td>
<td>12</td>
<td>8.5%</td>
</tr>
<tr>
<td>Other Central American</td>
<td>23</td>
<td>4.6%</td>
<td>9</td>
<td>6.3%</td>
</tr>
<tr>
<td>Other Caribbean</td>
<td>19</td>
<td>3.8%</td>
<td>3</td>
<td>2.1%</td>
</tr>
</tbody>
</table>
In addition to full sample characteristics, descriptive analyses provided statistical information on sociodemographic differences between acculturation groups. Readers may view these data in Table 3. There were no statistically significant differences between acculturation groups in many sociodemographic variables (e.g. age, gender, sexual orientation, % with children). In contrast, age of onset of substance use and lifetime rates of arrest or incarceration differed significantly between the three groups. A significant Levene’s test of homogeneity of variances with the continuous variable “age of onset” \( (F(2,500)=23.77, p<.001) \) necessitated the use of the more robust Brown-Forsythe test of equality of means across acculturation groups. Results from this test revealed significant associations between acculturation group and age of onset of substance use, \( F(2,474)=77.09, p<.001 \). Results from Games-Howell post hoc multiple comparisons tests indicated participants in the dissonant acculturation group started using substances at significantly \( (p<.001) \) younger ages on average \( (M=13.87, SD=1.91) \) than their consonantly \( (M=15.87, SD=2.52) \) or selectively \( (M=17.46, SD=3.67) \) acculturating peers. Moreover, the difference in age of onset of substance use between consonant acculturation and selective acculturation groups was significant as well \( (p<.001) \). Finally, lifetime rates of arrest or incarceration were significantly associated with acculturation group too \( \chi^2(2, N=501) = 41.58, p<.001 \). Participants in the dissonant acculturation group represented the largest proportion of lifetime arrests \( (n=57, 40.1\%) \) relative to participants in consonant \( (n=23, 17.2\%) \) and selective \( (n=28, 12.3\%) \) acculturation groups. These elevated rates of involvement with U.S. legal systems in dissonantly acculturating emerging adults are consistent with past-segmented assimilation research with Latinx individuals as well (Portes et al., 2009).
Table 3. Descriptive Statistics, ANOVA, & Chi-Square Tests for Dissonant, Consonant, and Selective Acculturation Groups

<table>
<thead>
<tr>
<th>Descriptor</th>
<th>Dissonant (n=142)</th>
<th>Consonant (n=134)</th>
<th>Selective (n=228)</th>
<th>F or Chi-Square Test</th>
</tr>
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<tbody>
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<td>n (M)</td>
<td>% (SD)</td>
<td>n (M)</td>
<td>% (SD)</td>
</tr>
<tr>
<td>Age</td>
<td>24.0</td>
<td>2.84</td>
<td>24.43</td>
<td>2.77</td>
</tr>
<tr>
<td>Gender (Female)</td>
<td>67</td>
<td>47.2%</td>
<td>71</td>
<td>53.0%</td>
</tr>
<tr>
<td>Sexual Orientation (Heterosexual)</td>
<td>118</td>
<td>83.1%</td>
<td>112</td>
<td>84.2%</td>
</tr>
<tr>
<td>Generation U.S. (1st Generation)</td>
<td>45</td>
<td>31.7%ₐ</td>
<td>20</td>
<td>14.9%ₐₗₖ</td>
</tr>
<tr>
<td>Age of Immigration</td>
<td>7.69</td>
<td>4.76</td>
<td>9.28</td>
<td>6.02</td>
</tr>
<tr>
<td>School Enrollment (Not Enrolled)</td>
<td>86</td>
<td>60.6%ₐ</td>
<td>71</td>
<td>53.0%ₐₖₗₖ</td>
</tr>
<tr>
<td>Relationship Status (Single)</td>
<td>38</td>
<td>26.8%ₐ</td>
<td>47</td>
<td>35.1%ₐₖₗₖ</td>
</tr>
<tr>
<td>Employed at Least Part-Time</td>
<td>139</td>
<td>97.9%ₐ</td>
<td>125</td>
<td>94.0%ₐ</td>
</tr>
<tr>
<td>Personal Income (Past Year)</td>
<td>17,94ₐ₃</td>
<td>7,320</td>
<td>23,14ₐₖₖ</td>
<td>14,29ₖ</td>
</tr>
<tr>
<td>Parental Income (Best Year)</td>
<td>16,0ₐ₉₃</td>
<td>13,60₂ₙₖ</td>
<td>47,3ₐₖₖ</td>
<td>37,6ₐₖ</td>
</tr>
<tr>
<td>Parental Support/Living Expenses (%)</td>
<td>10.1ₐ</td>
<td>17.4</td>
<td>23.9ₖ</td>
<td>29.5₂ₙₖ</td>
</tr>
<tr>
<td>Age of Onset – Substance Use (years)</td>
<td>13.ₕ₉ₐₚ</td>
<td>1.₉₁</td>
<td>1ₕ₉ₖₖ</td>
<td>2.ₕ₂ₖ</td>
</tr>
<tr>
<td>DREAM/DACA (Yes)</td>
<td>19</td>
<td>13.4%</td>
<td>9</td>
<td>6.7%</td>
</tr>
<tr>
<td>Citizen/LPR (Yes)</td>
<td>10ₕₙₚₚ</td>
<td>7ₕₚ₉ₖ</td>
<td>1₂ₙₖₖ</td>
<td>9ₕₘₖₕ</td>
</tr>
<tr>
<td>Children (Yes)</td>
<td>3ₕₚ</td>
<td>2ₕₚₕₖ</td>
<td>2ₕₚₕₖ</td>
<td>2ₕₚₕₖ</td>
</tr>
<tr>
<td>Age of Eldest Child</td>
<td>4.ₕₙₚ</td>
<td>1.ₕₚₚ</td>
<td>4.₁ₙₕₖ</td>
<td>3.ₖₘₕ</td>
</tr>
<tr>
<td>Arrested/Incarcerated (Yes)</td>
<td>5ₕₙₚ</td>
<td>4.ₕₙₚₚ</td>
<td>2ₕₚₕₖ</td>
<td>1ₕₙₕₚₖ</td>
</tr>
</tbody>
</table>
Concerning immigration and citizenship status, the percentage of participants who reported being 1st generation immigrants in the United States differed significantly by acculturation group, $\chi^2(2, N=496) = 9.96, p=.007$. While the proportion of 1st generation immigrants differed significantly between acculturation groups, the average age at which these 1st generation immigrants arrived in the United States did not, $\chi^2(2, N=496) = 9.96, p=.007$. Also concerning immigration, the percent of respondents reporting being past or current DREAMers or recipients of support from the Deferred Action for Childhood Arrivals (DACA) program did not differ significantly by group, $\chi^2(2, N=495) = 3.96, p=.138$. In opposition to this non-significant finding, the percentage of participants who indicated they were legal permanent residents (LPRs) or citizens of the United States differed significantly by acculturation group $\chi^2(2, N=497) = 51.62, p<.001$. The dissonant acculturation group contained a larger proportion of non-U.S. citizens or LPRs ($n=37, 26.1\%$) compared to consonant ($n=6, 4.51\%$) and selective ($n=9, 4.05\%$) acculturation groups. Gaining citizenship is a convoluted and expensive process—especially under the current administration—and these levels of legal residence may be more difficult to ascend to for emerging adults coming from families that experienced dissonant acculturation (Misra, 2020; Piedra & Engstrom, 2009).

Regarding capital, statistically significant differences emerged between acculturation groups, school enrollment $\chi^2(8, N=501) = 56.34, p<.001$, and employment $\chi^2(4, N=500) = 20.10, p<.001$. For the former, school enrollment was highest within the selective acculturation group ($n=128, 57\%$) and lowest within the dissonant acculturation group ($n=56, 39.4\%$). This finding is consistent with segmented assimilation research and theory, wherein families with fewer resources tend to shift toward acculturative dissonance (Portes & Rumbaut, 2001). Similarly, familial resources and parental education significantly protect against dropping out of school.
(Waters et al., 2010). Regarding employment, those in the dissonant acculturation group reported the highest levels of employment ($n=139, 97.9\%$) while those in the selective acculturation group reported the lowest ($n=196, 87.1\%$). This finding likely coincides with familial access to capital and the ability of parents/primary caregivers to support their children. With regard to the continuous variable “parental support”, Levene’s test revealed the homogeneity of variances assumption was not met, $F(2,501)=90.32, p<.001$, so this portion of the analysis used a Brown-Forsythe test. Associations between acculturation group and level of parental support were significant, $F(2,437)=27.90, p<.001$. Games-Howell post hoc tests revealed respondents in the dissonant acculturation group reported significantly ($p<.001$) lower average levels of parental/primary caregiver support ($M=10.05, SD=17.44$) than those in the consonant ($M=23.88, SD=29.52$) and selective ($M=32.50, SD=36.31$) acculturation groups. Similar associations emerged between acculturation groups, personal, and parental incomes. Again, significant Levene’s tests for both personal income ($F(2,433)=40.51, p<.001$) and parental income ($F(2,496)=8.74, p<.001$) necessitated the use of Brown-Forsythe tests for equalities of means with heterogeneous variances. Significant associations surfaced between acculturation group, personal income ($F(2,347)=8.35, p<.001$), and parental income ($F(2,388)=40.02, p<.001$). Games-Howell post hoc tests of multiple comparisons indicated respondents in the dissonant acculturation condition reported earning a significantly lower income in the past year ($M=17,942.53, SD=7,320.48$) compared to those in consonant ($M=23,143.49, SD=14,294.32$) or selective ($M=23,790.05, SD=17,135.69$) acculturation conditions. Likewise, respondents in the dissonant acculturation condition reported lower levels of parental/primary caregiver income ($M=16,092.96, SD=13,601.74$) compared to those in consonant ($M=47,372.30, SD=37,669.51$) or selective ($M=48,922.18, SD=51,685.56$) conditions. These findings are all consistent with extant
research literature on segmented assimilation with, as those with reduced access to resources—economic status, higher education—trend towards patterns of dissonant acculturation more frequently (Portes & Rumbaut, 2001; Waters et al., 2010).

**RQ1: What associations exist between patterns of acculturation and substance use outcomes during emerging adulthood with Latinx EAs?**

This study assessed participants’ current substance use using the AUDIT, CUDIT-R, and Substance Problem Scales (alcohol & cannabis). After conducting Levene’s tests of homogeneity of variances, one-way analyses of variance (ANOVA) or Brown-Forsythe tests and appropriate post hoc tests detected significant differences in substance use outcomes between acculturation profiles. Readers may view results pertaining to AUDIT scores in Table 4 and Table 5. Through regression analyses with mean AUDIT score regressed on acculturation profile—relative to participants in the dissonant acculturation profile—average AUDIT scores were lower for participants in the consonant acculturation profile \((b=-10.49, t(489)=-12.02, p<.001)\) and selective acculturation profile \((b=-12.13, t(489)=-15.59, p<.001)\). Acculturation profile explained 34.5\% of the variance in AUDIT scores, adjusted \(R^2=.345, F(2, 489)=130.59, p<.001\). Given a significant Levene’s test of homogeneity of variance in AUDIT scores between acculturation groups \((F(2,489)=3.09, p=.046)\), these analyses employed Brown-Forsythe tests for more robust measures of equality of means between groups. Again, significant associations appeared between acculturation profile and AUDIT scores \((F(2,477)=140.53, p<.001)\). Games-Howell post hoc tests of multiple comparisons indicated participants in the dissonant acculturation profile reported higher mean AUDIT score \((M=19.88, SD=6.81)\) than their consonantly \((M=9.39, SD=6.20)\) or selectively \((M=7.75, SD=8.00)\) acculturating counterparts.
Table 4. Regression Results: AUDIT Score by Acculturation Profile.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>95.0% Confidence Interval for $b$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$b$</td>
<td>Std. Error</td>
<td>$\beta$</td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>19.88</td>
<td>.606</td>
<td></td>
</tr>
<tr>
<td>Consonant</td>
<td>-10.49</td>
<td>.873</td>
<td>-.521</td>
</tr>
</tbody>
</table>

Dependent Variable: AUDIT Sum

Table 5. Games-Howell Multiple Comparisons: AUDIT Score by Acculturation Profile.

<table>
<thead>
<tr>
<th>(I) Acculturation Profile 1</th>
<th>(J) Acculturation Profile 2</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dissonant</td>
<td>Consonant</td>
<td>10.49</td>
<td>.786</td>
<td>&lt;.001</td>
<td>8.633 - 12.340</td>
</tr>
<tr>
<td></td>
<td>Selective</td>
<td>12.13</td>
<td>.788</td>
<td>&lt;.001</td>
<td>10.278 - 13.987</td>
</tr>
<tr>
<td>Consonant</td>
<td>Dissonant</td>
<td>-10.49</td>
<td>.786</td>
<td>&lt;.001</td>
<td>-12.340 - 8.633</td>
</tr>
<tr>
<td></td>
<td>Selective</td>
<td>1.65</td>
<td>.765</td>
<td>.081</td>
<td>-.155 - 3.448</td>
</tr>
<tr>
<td>Selective</td>
<td>Dissonant</td>
<td>-12.13</td>
<td>.788</td>
<td>&lt;.001</td>
<td>-13.988 - 10.278</td>
</tr>
<tr>
<td></td>
<td>Consonant</td>
<td>-1.65</td>
<td>.765</td>
<td>.081</td>
<td>-3.448 - .155</td>
</tr>
</tbody>
</table>

Dependent Variable: AUDIT Sum; The error term is Mean Square(Errror) = .526.
Acculturation profile significantly predicted mean SPS Alcohol scores as well. On average, participants in the consonant acculturation ($b=-1.99$, $t(500)=-13.97$, $p<.001$) and selective acculturation groups ($b=-2.46$, $t(500)=-19.47$, $p<.001$) reported lower SPS alcohol scores than participants categorized to the dissonant acculturation group. Acculturation profile also explained 43.9\% of the variance in mean SPS Alcohol scores, adjusted $R^2=.439$, $F(2,500)=329.50$, $p<.001$. Given a significant Levene’s test of homogeneity of variance in mean SPS Alcohol scores between acculturation groups ($F(2,500)=17.49$, $p<.001$), analyses proceeded with Brown-Forsythe tests. Again, analyses indicated significant associations between acculturation profile and mean SPS Alcohol scores ($F(2,479)=221.82$, $p<.001$). Games-Howell post hoc tests of multiple comparisons indicated participants in the dissonant acculturation profile reported significantly higher mean SPS Alcohol scores ($M=3.54$, $SD=.89$) than their consonantly ($M=1.55$, $SD=1.10$) or selectively ($M=1.07$, $SD=1.38$) acculturating counterparts. Put another way, those in the dissonant acculturation group, on average, reported greater recency and variety of problems relating to alcohol use than those in consonant or selective acculturation groups. Furthermore, participants in the selective acculturation group reported significantly lower mean SPS Alcohol scores ($M=1.07$, $SD=1.38$) than those in the consonant acculturation group ($M=1.55$, $SD=1.10$). Table 6 and Table 7 contain statistical information pertaining to SPS Alcohol scores by acculturation profile.
### Table 6. Regression Results: SPS Alcohol Score by Acculturation Profile.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>95% Confidence Interval for $b$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$b$</td>
<td>Std. Error</td>
<td>$\beta$</td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>3.54</td>
<td>.099</td>
<td>.355</td>
</tr>
<tr>
<td>Consonant</td>
<td>-1.99</td>
<td>.142</td>
<td>-.558</td>
</tr>
<tr>
<td>Selective</td>
<td>-2.46</td>
<td>.127</td>
<td>-.777</td>
</tr>
</tbody>
</table>

Dependent Variable: SPS Alcohol Mean

### Table 7. Games-Howell Multiple Comparisons: SPS Alcohol Score by Acculturation Profile.

<table>
<thead>
<tr>
<th>(I) Acculturation Profile 1</th>
<th>(J) Acculturation Profile 2</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dissonant</td>
<td>1.990</td>
<td>.121</td>
<td>&lt;.001</td>
<td>1.706</td>
</tr>
<tr>
<td></td>
<td>Consonant</td>
<td>2.464</td>
<td>.118</td>
<td>&lt;.001</td>
<td>2.187</td>
</tr>
<tr>
<td></td>
<td>Selective</td>
<td>-1.990</td>
<td>.121</td>
<td>&lt;.001</td>
<td>-2.275</td>
</tr>
<tr>
<td></td>
<td>Dissonant</td>
<td>-.474</td>
<td>.132</td>
<td>.001</td>
<td>.164</td>
</tr>
<tr>
<td></td>
<td>Consonant</td>
<td>-2.464</td>
<td>.118</td>
<td>&lt;.001</td>
<td>-2.742</td>
</tr>
<tr>
<td></td>
<td>Selective</td>
<td>-.474</td>
<td>.132</td>
<td>.001</td>
<td>-.784</td>
</tr>
</tbody>
</table>

Dependent Variable: SPS Alcohol Mean; The error term is Mean Square(Error) = 1.400.
Scores from the CUDIT-R, much like scores from the AUDIT, were associated significantly with acculturation profiles as well. The sample size of participants (n=215) who answered the CUDIT-R was smaller due to skip logic embedded in the full survey, but overall associations between cannabis scale scores and acculturation profiles were similar. Here, on average, participants assigned to the consonant acculturation (b=-3.12, t(212)=-2.89, p=.004) and selective acculturation profiles (b=-2.76, t(212)=-2.73, p=.007) reported significantly lower CUDIT-R scores than those assigned to the dissonant acculturation profile. Acculturation profile only explained 4.1% of the variance in CUDIT-R scores, adjusted $R^2=.041$, $F(2, 212)=5.60$, $p=.004$. An insignificant Levene’s test of homogeneity of variances in CUDIT-R scores between acculturation groups allowed analysis to proceed with one way ANOVA. Again, analyses indicated significant associations between acculturation profile and CUDIT-R scores ($F(2,212)=5.60, p=.004$). Bonferroni post hoc tests of multiple comparisons indicated participants in the dissonant acculturation profile reported significantly higher CUDIT-R scores on average ($M=11.80$, $SD=5.85$) than their consonantly ($M=8.68$, $SD=1.10$) or selectively ($M=9.04$, $SD=1.38$) acculturating counterparts. Table 8 and Table 9 contain statistical information regarding CUDIT-R scores and acculturation profiles.
Table 8. Regression Results: CUDIT-R Score by Acculturation Profile.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>95% Confidence Interval for b</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>11.80</td>
<td>.671</td>
<td>17.59</td>
</tr>
<tr>
<td>Consonant</td>
<td>-3.12</td>
<td>1.079</td>
<td>-.212</td>
</tr>
<tr>
<td>Selective</td>
<td>-2.76</td>
<td>1.011</td>
<td>-.200</td>
</tr>
</tbody>
</table>

Dependent Variable: CUDIT Sum

Table 9. Bonferroni Multiple Comparisons: CUDIT-R Score by Acculturation Profile.

<table>
<thead>
<tr>
<th>(I) Acculturation Profile</th>
<th>(J) Acculturation Profile</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Dissonant</td>
<td>Consonant</td>
<td>3.12</td>
<td>1.079</td>
<td>.013</td>
<td>.5155 - 5.723</td>
</tr>
<tr>
<td></td>
<td>Selective</td>
<td>2.76</td>
<td>1.011</td>
<td>.021</td>
<td>.3162 - 5.194</td>
</tr>
<tr>
<td>Consonant</td>
<td>Dissonant</td>
<td>-3.12</td>
<td>1.079</td>
<td>.013</td>
<td>-5.723 - .5155</td>
</tr>
<tr>
<td></td>
<td>Selective</td>
<td>-.364</td>
<td>1.134</td>
<td>1.000</td>
<td>-3.101 - 2.373</td>
</tr>
<tr>
<td>Selective</td>
<td>Dissonant</td>
<td>-2.76</td>
<td>1.011</td>
<td>.021</td>
<td>-5.194 - .3162</td>
</tr>
<tr>
<td></td>
<td>Consonant</td>
<td>.364</td>
<td>1.134</td>
<td>1.000</td>
<td>-2.373 - 3.101</td>
</tr>
</tbody>
</table>

Dependent Variable: CUDIT Sum; The error term is Mean Square(Error) = .635.
Finally, associations remained significant between acculturation profile and mean SPS Cannabis scores. Here, on average, respondents assigned to the consonant acculturation ($b=-1.17, t(501)=-8.27, p<.001$) and selective acculturation ($b=-1.18, t(501)=-9.35, p<.001$) profiles reported higher mean SPS Cannabis scores than those assigned to the dissonant acculturation profile. Acculturation profile explained 16.5% of the variance in CUDIT-R scores, adjusted $R^2=.165$, $F(2, 501)=50.83, p<.001$. A significant Levene’s test of homogeneity of variance in mean SPS Cannabis score between acculturation groups necessitated the use of a more robust test of equality of means. Analyses of Brown-Forsythe tests indicated significant associations between acculturation profile and mean SPS Cannabis scores ($F(2,394)=50.86, p<.001$). Games-Howell post hoc tests of multiple comparisons indicated participants in the dissonant acculturation profile reported significantly higher mean SPS Cannabis scores ($M=1.81, SD=1.40$) than their consonantly ($M=.63, SD=.92$) or selectively ($M=.63, SD=1.16$) acculturating counterparts. In other words, individuals assigned to the dissonant acculturation condition reported a greater and more recent variety of problems associated with cannabis use than their peers assigned to consonant or selective acculturation conditions. Table 10 and Table 11 contain statistical information regarding mean SPS Cannabis scores and acculturation profiles.
Table 10. Regression Results: SPS Cannabis Score on Acculturation Profile.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>95% Confidence Interval for $b$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$b$</td>
<td>Std. Error</td>
<td>Beta</td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>1.81</td>
<td>.099</td>
<td>18.27</td>
</tr>
<tr>
<td>Consonant</td>
<td>-1.17</td>
<td>.142</td>
<td>-.402</td>
</tr>
<tr>
<td>Selective</td>
<td>-1.18</td>
<td>.126</td>
<td>-.455</td>
</tr>
</tbody>
</table>

Dependent Variable: SPS Cannabis Mean

Table 11. Games-Howell Multiple Comparisons: SPS Cannabis Score by Acculturation Profile.

<table>
<thead>
<tr>
<th>(I) Acculturation Profile</th>
<th>(J) Acculturation Profile 2</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dissonant</td>
<td>Consonant</td>
<td>1.17</td>
<td>.142</td>
<td>&lt;.001</td>
<td>.8377 - 1.5084</td>
</tr>
<tr>
<td></td>
<td>Selective</td>
<td>1.18</td>
<td>.141</td>
<td>&lt;.001</td>
<td>.8465 - 1.5091</td>
</tr>
<tr>
<td>Consonant</td>
<td>Dissonant</td>
<td>-1.17</td>
<td>.142</td>
<td>&lt;.001</td>
<td>-1.5084 - -.8377</td>
</tr>
<tr>
<td></td>
<td>Selective</td>
<td>.005</td>
<td>.111</td>
<td>.999</td>
<td>-.2655 - .2651</td>
</tr>
<tr>
<td>Selective</td>
<td>Dissonant</td>
<td>-1.18</td>
<td>.141</td>
<td>&lt;.001</td>
<td>-1.5091 - -.8465</td>
</tr>
<tr>
<td></td>
<td>Consonant</td>
<td>-.005</td>
<td>.111</td>
<td>.999</td>
<td>-.2651 - .2555</td>
</tr>
</tbody>
</table>

Dependent Variable: SPS Cannabis Mean; The error term is Mean Square(Error) = 1.387.
RQ 2: How do levels of developmental strain and stress coping differ between patterns of acculturation?

In conjunction with measures of substance use, this study examined relationships between segmented assimilation profiles and two potential mediating variables; developmental strain and stress coping. The former refers to the strain emerging adults are theorized to experience during their late teens and early twenties while the latter refers to substance use for reasons of managing negative affectivity. This paper presents regression results and between group differences in developmental strain in Table 12 and Table 13 respectively. Once more, higher developmental strain subscale scores represent higher degrees of instability, transition, and pressure in an EA’s life. Performing ANOVA with developmental strain subscale score regressed onto acculturation profiles highlighted significant associations between variables. On average, individuals assigned to the consonant ($b=-10.43$, $t(493)=-7.63$, $p<.001$) and selective ($b=-14.61$, $t(493)=-12.00$, $p<.001$) acculturation profiles reported significantly lower levels of developmental strain than those assigned to the dissonant acculturation profile. Acculturation profile explained 22.5% of the variance in developmental strain subscale score, adjusted $R^2=.225$, $F(2, 493)=72.89$, $p<.001$. Given a significant Levene’s test of homogeneity of variance in developmental strain subscale scores between acculturation groups ($F(2,493)=73.99$, $p<.001$), continued analyses used Brown-Forsythe tests for more robust measures of equality of means between groups. Again, significant associations appeared between acculturation profile and developmental strain subscale scores ($F(2,408)=74.38$, $p<.001$). Games-Howell post hoc tests of multiple comparisons indicated participants in the dissonant acculturation profile reported significantly higher developmental strain subscale scores ($M=43.17$, $SD=6.85$) than their
consonantly ($M=32.74$, $SD=12.28$) or selectively ($M=28.56$, $SD=12.91$) acculturating counterparts. In addition, participants in the consonant acculturation condition ($M=32.74$, $SD=12.28$) reported significantly higher developmental strain subscale scores than those in the selective acculturation condition ($M=28.56$, $SD=12.91$).
Table 12. Regression Results: Developmental Strain Subscale Score by Acculturation Profile.

<table>
<thead>
<tr>
<th>Model</th>
<th>Model</th>
<th>b</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>1</td>
<td>43.17</td>
<td>.950</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consonant</td>
<td></td>
<td>-10.43</td>
<td>1.37</td>
<td>-.359</td>
<td>-7.63</td>
<td>&lt;.001</td>
<td>-13.109</td>
<td>-7.740</td>
</tr>
<tr>
<td>Selective</td>
<td></td>
<td>-14.61</td>
<td>1.22</td>
<td>-.565</td>
<td>-12.00</td>
<td>&lt;.001</td>
<td>-17.005</td>
<td>-12.220</td>
</tr>
</tbody>
</table>

Dependent Variable: Developmental Strain Sum

Table 13. Games-Howell Multiple Comparisons: Developmental Strain Subscale Score by Acculturation Profile.

<table>
<thead>
<tr>
<th>(I) Acculturation Profile 1</th>
<th>(J) Acculturation Profile 2</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Selective</td>
<td>14.61</td>
<td>1.04</td>
<td>&lt;.001</td>
<td>12.161 - 17.064</td>
</tr>
<tr>
<td></td>
<td>Selective</td>
<td>4.19</td>
<td>1.37</td>
<td>.007</td>
<td>.951 - 7.425</td>
</tr>
<tr>
<td>Selective</td>
<td>Dissonant</td>
<td>-14.61</td>
<td>1.04</td>
<td>&lt;.001</td>
<td>-17.064 - 12.161</td>
</tr>
<tr>
<td></td>
<td>Consonant</td>
<td>-4.19</td>
<td>1.37</td>
<td>.007</td>
<td>-7.425 - .951</td>
</tr>
</tbody>
</table>

Dependent Variable: Developmental Strain Sum
In like fashion, an ANOVA of stress coping on acculturation profile revealed significant relationships between the variables. On average, survey respondents assigned to the consonant acculturation ($b=-1.63, t(501)=-12.83, p<.001$) and selective acculturation ($b=-1.87, t(501)=-16.58, p<.001$) profiles reported significantly lower levels of stress coping than those assigned to the dissonant acculturation profile. Acculturation profile also explained 36.8% of the variance in stress coping subscale score, adjusted $R^2=.368$, $F(2, 501)=147.50, p<.001$. A significant Levene’s test of homogeneity of variance in stress coping subscale scores between acculturation groups ($F(2,501)=36.32, p<.001$) necessitated the use of Brown-Forsythe tests. Again, analyses indicated significant associations between acculturation profile and stress coping subscale scores ($F(2,415)=160.90, p<.001$). Games-Howell post hoc tests of multiple comparisons indicated participants in the dissonant acculturation profile reported significantly higher stress coping subscale scores ($M=3.95, SD=.67$) than their consonantly ($M=2.32, SD=1.13$) or selectively ($M=2.08, SD=1.20$) acculturating counterparts. Put another way, those in the dissonant acculturation group, on average, reported more frequent use of substances as a means to cope with negative affectivity. Table 14 and Table 15 contain statistical information pertaining to stress coping subscale scores by acculturation profiles.
Table 14. Regression Results: DMQ Coping Subscale Score on Acculturation Profile.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>95% Confidence Interval for b</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b</td>
<td>Std. Error</td>
<td>Beta</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>3.95</td>
<td>.089</td>
</tr>
<tr>
<td></td>
<td>Consonant</td>
<td>-1.63</td>
<td>.127</td>
</tr>
<tr>
<td></td>
<td>Selective</td>
<td>-1.87</td>
<td>.113</td>
</tr>
</tbody>
</table>

Dependent Variable: Coping Mean

Table 15. Games-Howell Multiple Comparisons: DMQ Coping Subscale Score by Acculturation Profile.

<table>
<thead>
<tr>
<th>(I) Acculturation Profile 1</th>
<th>(J) Acculturation Profile 2</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dissonant</td>
<td>Consonant</td>
<td>1.63</td>
<td>.127</td>
<td>&lt;.001</td>
<td>1.3646</td>
<td>1.8956</td>
</tr>
<tr>
<td></td>
<td>Selective</td>
<td>1.87</td>
<td>.113</td>
<td>&lt;.001</td>
<td>1.6417</td>
<td>2.0983</td>
</tr>
<tr>
<td>Consonant</td>
<td>Dissonant</td>
<td>-1.63</td>
<td>.127</td>
<td>&lt;.001</td>
<td>-1.8956</td>
<td>-1.3646</td>
</tr>
<tr>
<td></td>
<td>Selective</td>
<td>.240</td>
<td>.115</td>
<td>.112</td>
<td>-.0564</td>
<td>.5362</td>
</tr>
<tr>
<td>Selective</td>
<td>Dissonant</td>
<td>-1.87</td>
<td>.113</td>
<td>&lt;.001</td>
<td>-2.0983</td>
<td>-1.6417</td>
</tr>
<tr>
<td></td>
<td>Consonant</td>
<td>-.240</td>
<td>.115</td>
<td>.112</td>
<td>-.5362</td>
<td>.0564</td>
</tr>
</tbody>
</table>

Dependent Variable: Coping Mean; The error term is Mean Square(Error) = 1.113.
RQ 3: What are the effects of developmental strain and stress coping on substance use, and do they differ between acculturation profiles?

The first, specified structural equation models comprise four latent factors: developmental strain, stress coping, the AUDIT, and the CUDIT. The appropriate EARS scale items loaded onto the latent developmental strain factor, DMQ-R Coping Subscale items loaded onto the latent stress coping factor, and the AUDIT and CUDIT-R items loaded onto their respective substance use factors. All factor loadings, save one with the CUDIT-R, were statistically significant (p<.05). Specified measurement models demonstrated satisfactory goodness-of-fit, RMSEA = .065 (90% CI = .06, .07); CFI=.92, TLI=.91 (Hair et al., 2013; Marsh, Hau, & Wen, 2004). Therefore, this model served as the final measurement model in the subsequent structural equation models with the AUDIT and CUDIT-R. All SEM pathways are standardized, and Appendix E contains final structural equation models. Reduced path models follow on subsequent pages for the sake of interpretability and parsimony. In this first model, the effect of developmental strain on AUDIT score was significant for the consonant (β=.412, p<.001) and selective (β=.327, p<.001) acculturation groups, although not for the dissonant acculturation group. In contrast, the effect of stress coping on AUDIT score was significant for dissonant (β=.576, p<.001), consonant (β=.488, p<.001), and selective (β=.581, p<.001) acculturation groups. Furthermore, developmental strain and stress coping were significantly correlated with one another in dissonant (r=.360, p=.038), consonant (r=.598, p<.001), and selective (r=.708, p<.001) acculturation groups. In addition, AUDIT and CUDIT-R scores were significantly correlated with one another in dissonant (r=.346, p=.023) and selective acculturation groups (r=.305, p=.036), although not in the consonant acculturation group. Figure 5 is a path diagram visually depicting these data.
Figure 5. Standardized Effects of Developmental Strain & Stress Coping on AUDIT Score by Group.

Dissonant/Consonant/Selective: *=p<.05, **=p<.01, ***=p<.001
This same model measured effects of developmental strain and stress coping on CUDIT-R scores. Again, this study reports standardized path effects for the sake of interpretability. Here, the effects of developmental strain on CUDIT-R score were non-significant across all three acculturation groups. Similarly, the effects of stress coping on CUDIT-R score were non-significant for dissonant and consonant acculturation groups, but significant for the selective acculturation group ($\beta=.485$, $p=.005$). Figure 6 contains the path diagram depicting these data.

Figure 6. Standardized Effects of Developmental Strain & Stress Coping on CUDIT-R Score by Group.
The second, specified structural equation models comprise four latent factors as well: *developmental strain, stress coping, and the Substance Problem Scales (Alcohol & Cannabis).*

Like the first models, the appropriate EARS scale items loaded onto the latent developmental strain factor, DMQ-R Coping Subscale items loaded onto the latent stress coping factor, and the SPS Alcohol and SPS Cannabis items loaded onto their respective substance use factors. All factor loadings, save two with SPS Cannabis, were statistically significant \((p<.01)\). Specified measurement models demonstrated satisfactory goodness-of-fit, \(\text{RMSEA} = .069\) \((90\% \text{ CI} = .065, .073)\); CFI=.91, TLI=.90 (Hair et al., 2013; Marsh, Hau, & Wen, 2004). Therefore, this model served as the final measurement model in subsequent SEM with the Substance Problem Scales.

Again, all SEM pathways are standardized, and Appendix E contains final structural equation models. Reduced path models follow on subsequent pages for the sake of interpretability and parsimony. In this second model, the effect of developmental strain on SPS Alcohol score was significant for the consonant \((\beta = .358, p<.001)\) and selective \((\beta = .276, p<.001)\) acculturation groups, although not for the dissonant acculturation group. In contrast, the effect of stress coping on SPS Alcohol score was significant for dissonant \((\beta = .705, p<.001)\), consonant \((\beta = .521, p<.001)\), and selective \((\beta = .661, p<.001)\) acculturation groups. Further, SPS Alcohol and SPS Cannabis scores were significantly correlated with one another in dissonant \((r = .539, p = .001)\), consonant \((r = .558, p < .001)\), and selective \((r = .384, p < .001)\) acculturation groups, suggesting individuals reporting issues with one substance were more likely to report issues with the other regardless of acculturation profile. Figure 7 is a path diagram visually depicting these data.
Figure 7. Standardized Effects of Developmental Strain & Stress Coping on SPS Alcohol Score by Group.

Developmental Strain (EARS)

SPS Alcohol

Stress Coping (DMQ-R)

$b_1 = .139^{\text{n.s.}}/.358^{**}/.276^{***}$

$b_2 = .705^{***}/.521^{***}/.661^{***}$

Dissonant/Consonant/Selective: *=p<.05, **=p<.01, ***=p<.001
This same model measured effects of developmental strain and stress coping on SPS Cannabis scores. Again, this study reports standardized path effects for the sake of interpretability. Here, the effects of developmental strain on SPS Cannabis score were significant in the consonant acculturation group (β=.270, p=.007) only. Conversely, the effects of stress coping on SPS Cannabis score were significant for both consonant (β=.285, p=.019) and selective (β=.516, p<.001). Figure 8 contains the path diagram depicting these data.

**Figure 8. Standardized Effects of Developmental Strain & Stress Coping on SPS Cannabis Score by Group.**
RQ 4: To what extent do these mediating variables account for associations between patterns of acculturation and substance use with Latinx EAs?

Research question four suggested developmental strain and stress coping mediate the relationship between intergenerational patterns of acculturation and substance use. Using the SPSS PROCESS macro, this study explored this hypothesis. Dummy codes assigned values of $X_1$ to consonant acculturation and $X_2$ to selective acculturation, with dissonant acculturation as the reference group for all analyses. Four mediation models each tested for indirect effects of the two mediating variables on each of the four substance use outcomes.

In the first mediation model with AUDIT score as the dependent variable, the total effect of acculturation profile was significant and explained 34.8% of the total variance in AUDIT score ($R^2=.348; F(2,489)=130.58, p<.001$). Again, relative to the dissonant acculturation group, membership in the consonant ($\beta=-1.175, t(489)=-12.02, p<.001$) or selective ($\beta=-1.360, t(489)=-15.59, p<.001$) acculturation groups was associated with significantly lower AUDIT scores on average. The model of direct effects of acculturation profile on developmental strain was significant and explained 21.2% of the variance in developmental strain with the three groups ($R^2=.212; F(2,489)=65.67, p<.001$). Again, relative to dissonant acculturation, consonant ($\beta=-.8061, t(489)=-7.49, p<.001$) and selective ($\beta=-1.088, t(489)=-11.35, p<.001$) acculturation were associated with significantly lower developmental strain scores on average. Similarly, the model of direct effects of acculturation profile on stress coping was significant and explained 37.3% of the variance in stress coping with the three groups ($R^2=.373; F(2,489)=145.24, p<.001$). Once again, relative to the dissonant acculturation group, consonant ($\beta=-1.216, t(489)=-12.68, p<.001$) and selective ($\beta=-1.407, t(489)=-16.43, p<.001$) acculturation were associated with significantly
lower stress coping scores on average. Taken together, the total effects model of acculturation profile, developmental strain, and stress coping on AUDIT score was significant and explained 68.8% of the variance in AUDIT score with the three groups ($R^2=.688; F(4,487)=268.33, p<.001$). Higher levels of developmental strain ($\beta=.233, t(487)=6.48, p<.001$) and stress coping ($\beta=.548, t(487)=13.61, p<.001$) were associated with significantly higher AUDIT scores. The effect of acculturation profile, while still a significant predictor of AUDIT score in the direct effects model, was weaker after the inclusion of the mediating variables developmental strain and stress coping. These significant results, along with significant 95% bootstrap confidence intervals for relative indirect effects of acculturation profile on AUDIT score, suggest developmental strain and stress coping partially mediated the relationship between acculturation profile and AUDIT scores.

Relative to the dissonant acculturation profile, those assigned to the consonant acculturation profile ($X_1$) had AUDIT scores that were on average .188 standard deviations lower as a result of the positive effects of decreased developmental strain and .666 standard deviations lower as a result of the positive effects of decreased stress coping. Also relative to the dissonant acculturation profile, those assigned to the selective acculturation profile ($X_2$) had AUDIT scores that were on average .253 standard deviations lower as a result of the positive effects of decreased developmental strain, and .770 standard deviations lower as a result of the positive effects of decreased stress coping. For context, a one standard deviation decrease in AUDIT score for the full sample represents a drop of almost nine points. From an AUDIT scoring perspective, this could represent a person dropping from a score of 16 (i.e. “high risk”) to a score of seven (i.e. “low risk”; Saunders et al., 1993). Full statistics for the mediation of acculturation profile on AUDIT score by developmental strain and stress coping are in Table 16.
Table 16. Mediation Effects of Developmental Strain & Stress Coping on AUDIT Score.

<table>
<thead>
<tr>
<th>Path</th>
<th>β</th>
<th>SE</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative total effects of X on Y (c)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_1 \rightarrow$ AUDIT Score</td>
<td>-1.175</td>
<td>.873</td>
<td>-12.015</td>
<td>.000</td>
</tr>
<tr>
<td>$X_2 \rightarrow$ AUDIT Score</td>
<td>-1.360</td>
<td>.779</td>
<td>-15.586</td>
<td>.000</td>
</tr>
<tr>
<td>Relative direct effects of X on $M_1$ &amp; $M_2$ (a)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_1 \rightarrow$ Developmental Strain</td>
<td>-.8061</td>
<td>.125</td>
<td>-7.494</td>
<td>.000</td>
</tr>
<tr>
<td>$X_2 \rightarrow$ Developmental Strain</td>
<td>-1.088</td>
<td>.111</td>
<td>-11.345</td>
<td>.000</td>
</tr>
<tr>
<td>$X_1 \rightarrow$ Stress Coping</td>
<td>-1.216</td>
<td>.127</td>
<td>-12.676</td>
<td>.000</td>
</tr>
<tr>
<td>$X_2 \rightarrow$ Stress Coping</td>
<td>-1.407</td>
<td>.113</td>
<td>-16.434</td>
<td>.000</td>
</tr>
<tr>
<td>Relative direct effects of $M_1$ &amp; $M_2$ on Y (b)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developmental Strain $\rightarrow$ AUDIT Score</td>
<td>.233</td>
<td>.276</td>
<td>6.483</td>
<td>.000</td>
</tr>
<tr>
<td>Stress Coping $\rightarrow$ AUDIT Score</td>
<td>.548</td>
<td>.271</td>
<td>13.614</td>
<td>.000</td>
</tr>
<tr>
<td>Relative direct effects of X on Y (c’)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_1 \rightarrow$ AUDIT Score</td>
<td>-.321</td>
<td>.698</td>
<td>-4.111</td>
<td>.000</td>
</tr>
<tr>
<td>$X_2 \rightarrow$ AUDIT Score</td>
<td>-.336</td>
<td>.779</td>
<td>-4.450</td>
<td>.000</td>
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<tr>
<td>Bootstrapping results for relative indirect effects</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_1 \rightarrow$ Dev. Strain $\rightarrow$ AUDIT Score</td>
<td>-.1876</td>
<td>.039</td>
<td>[-.2711, -.1182]</td>
<td>.000</td>
</tr>
<tr>
<td>$X_2 \rightarrow$ Dev. Strain $\rightarrow$ AUDIT Score</td>
<td>-.2533</td>
<td>.046</td>
<td>[-.3513, -.1690]</td>
<td>.000</td>
</tr>
<tr>
<td>$X_1 \rightarrow$ Stress Coping $\rightarrow$ AUDIT Score</td>
<td>-.6662</td>
<td>.075</td>
<td>[-.8204, -.5238]</td>
<td>.000</td>
</tr>
<tr>
<td>$X_2 \rightarrow$ Stress Coping $\rightarrow$ AUDIT Score</td>
<td>-.7704</td>
<td>.076</td>
<td>[-.9225, -.6212]</td>
<td>.000</td>
</tr>
</tbody>
</table>

Ref. Group=Dissonant Acculturation, $X_1$=Consonant Acculturation, $X_2$=Selective Acculturation; $M_1$=Developmental Strain, $M_2$=Stress Coping
For mediation model two with SPS Alcohol score as the dependent variable, the total effect of acculturation profile on SPS Alcohol score was significant and explained 44.1% of the total variance in SPS Alcohol scores ($R^2=.441; F(2,500)=197.38, p<.001$). Relative to the dissonant acculturation group, membership in the consonant ($\beta=-1.260, t(500)=-13.97, p<.001$) or selective ($\beta=-1.560, t(500)=-19.47, p<.001$) acculturation groups was associated with significantly lower SPS Alcohol scores on average. The models of direct effects of acculturation profile on both developmental strain and stress coping remained significant, as did the associations between acculturation profile and both mediating variables. Again, compared to the dissonant acculturation group, consonant and selective acculturation were both associated with lower developmental strain and stress coping scores on average. Altogether, the total effects model of acculturation profile, developmental strain, and stress coping on SPS Alcohol score was significant and explained 78.1% of the variance in SPS Alcohol score with the three groups ($R^2=.781; F(4,498)=443.97, p<.001$). One standard deviation increases in developmental strain ($\beta=.2334, t(498)=7.80, p<.001$) and stress coping ($\beta=.5463, t(498)=16.38, p<.001$) were associated with significantly higher SPS Alcohol scores on average. The effect of acculturation profile, while still a significant predictor of SPS Alcohol in the direct effects model, was weaker after the inclusion of the mediating variables developmental strain and stress coping. These significant results, along with significant 95% bootstrap confidence intervals for relative indirect effects of acculturation profile on SPS Alcohol score, suggest developmental strain and stress coping partially mediated the relationship between acculturation profile and SPS Alcohol scores.

Similar to AUDIT scores and again, relative to the dissonant acculturation profile, those assigned to the consonant acculturation profile ($X_1$) had SPS Alcohol scores that were on average .188 standard deviations lower as a result of the positive effects of decreased developmental
strain and .670 standard deviations lower as a result of the positive effects of decreased stress coping. Also relative to the dissonant acculturation profile, those assigned to the selective acculturation profile ($X_2$) had AUDIT scores that were on average .259 standard deviations lower as a result of the positive effects of decreased developmental strain, and .769 standard deviations lower as a result of the positive effects of decreased stress coping. For reference, a one standard deviation decrease in SPS Alcohol score for the full sample represents a drop of 1.6 points. Readers and researchers can interpret this change in SPS Alcohol score as a significant drop in both temporal proximity and variety of problems associated with alcohol use. Full statistics for the mediation of acculturation profile on SPS Alcohol score by developmental strain and stress coping are in Table 17.
Table 17. Mediation Effects of Developmental Strain & Stress Coping on SPS Alcohol Score.

<table>
<thead>
<tr>
<th>Path</th>
<th>$\beta$</th>
<th>SE</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative total effects of X on Y (c)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_1 \rightarrow SPS$ Alcohol Score</td>
<td>-1.260</td>
<td>.142</td>
<td>-13.968</td>
<td>.000</td>
</tr>
<tr>
<td>$X_2 \rightarrow SPS$ Alcohol Score</td>
<td>-1.560</td>
<td>.127</td>
<td>-19.467</td>
<td>.000</td>
</tr>
<tr>
<td>Relative direct effects of X on $M_1$ &amp; $M_2$ (a)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_1 \rightarrow Developmental Strain$</td>
<td>-.8039</td>
<td>.125</td>
<td>-7.528</td>
<td>.000</td>
</tr>
<tr>
<td>$X_2 \rightarrow Developmental Strain$</td>
<td>-1.109</td>
<td>.111</td>
<td>-11.692</td>
<td>.000</td>
</tr>
<tr>
<td>$X_1 \rightarrow Stress Coping$</td>
<td>-1.227</td>
<td>.127</td>
<td>-12.815</td>
<td>.000</td>
</tr>
<tr>
<td>$X_2 \rightarrow Stress Coping$</td>
<td>-1.408</td>
<td>.113</td>
<td>-16.545</td>
<td>.000</td>
</tr>
<tr>
<td>Relative direct effects of $M_1$ &amp; $M_2$ on Y (b)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developmental Strain $\rightarrow SPS$ Alcohol Score</td>
<td>.233</td>
<td>.041</td>
<td>7.802</td>
<td>.000</td>
</tr>
<tr>
<td>Stress Coping $\rightarrow SPS$ Alcohol Score</td>
<td>.546</td>
<td>.040</td>
<td>16.378</td>
<td>.000</td>
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<tr>
<td>Relative direct effects of X on Y (c')</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_1 \rightarrow SPS$ Alcohol Score</td>
<td>-.402</td>
<td>.103</td>
<td>-6.163</td>
<td>.000</td>
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<tr>
<td>$X_2 \rightarrow SPS$ Alcohol Score</td>
<td>-.532</td>
<td>.099</td>
<td>-8.491</td>
<td>.000</td>
</tr>
<tr>
<td>Bootstrapping results for relative indirect effects</td>
<td></td>
<td></td>
<td>95% CI</td>
<td></td>
</tr>
<tr>
<td>$X_1 \rightarrow Dev. Strain$ $\rightarrow SPS$ Alcohol Score</td>
<td>-.1876</td>
<td>.035</td>
<td>[-.2605, -.1227]</td>
<td></td>
</tr>
<tr>
<td>$X_2 \rightarrow Dev. Strain$ $\rightarrow SPS$ Alcohol Score</td>
<td>-.2588</td>
<td>.043</td>
<td>[-.3481, -.1772]</td>
<td></td>
</tr>
<tr>
<td>$X_1 \rightarrow Stress Coping$ $\rightarrow SPS$ Alcohol Score</td>
<td>-.6704</td>
<td>.074</td>
<td>[-.8241, -.5319]</td>
<td></td>
</tr>
<tr>
<td>$X_2 \rightarrow Stress Coping$ $\rightarrow SPS$ Alcohol Score</td>
<td>-.7689</td>
<td>.071</td>
<td>[-.9142, -.6348]</td>
<td></td>
</tr>
</tbody>
</table>

Ref. Group=Dissonant Acculturation, $X_1$=Consonant Acculturation, $X_2$=Selective Acculturation; $M_1$=Developmental Strain, $M_2$=Stress Coping
In the third mediation model with CUDIT-R score as the dependent variable, the total effects of acculturation profile were significant and explained 5.0% of the total variance in CUDIT-R scores ($R^2=.050$; $F(2,212)=5.60, p=.004$). Compared to dissonant acculturation, membership in the consonant ($\beta=-.483, t(212)=-2.89, p=.004$) or selective ($\beta=-.426, t(212)=-2.73, p<.001$) acculturation groups was associated with significantly lower CUDIT-R scores on average. The models of direct effects of acculturation profile on both developmental strain and stress coping remained significant despite the smaller sample size, as did the associations between acculturation profile and both mediating variables. Again, compared to the dissonant acculturation group, consonant and selective acculturation were both associated with lower developmental strain and stress coping scores on average. Taken together, the total effects model of acculturation profile, developmental strain, and stress coping on CUDIT-R score was significant and explained 12.9% of the variance in CUDIT-R score with the three groups ($R^2=.129$; $F(4,210)=7.803, p<.001$). A one standard deviation increase in stress coping ($\beta=.306, t(210)=3.560, p<.001$) was associated with significantly higher CUDIT-R scores on average. Developmental strain, however, was not significantly associated with CUDIT-R scores in the direct effects model ($\beta=.058, t(210)=.767, p=.444$). Furthermore, the significant association between acculturation profile and CUDIT-R scores dropped off after the inclusion of the mediating variables developmental strain and stress coping. These non-significant findings, along with significant 95% bootstrap confidence intervals for relative indirect effects of acculturation profile on CUDIT-R score via stress coping, suggest stress coping fully mediated the relationship between acculturation profile and CUDIT-R scores.

Relative to the dissonant acculturation profile, those assigned to the consonant acculturation profile ($X_1$) had CUDIT-R scores that were on average .316 standard deviations
lower as a result of the positive effects of decreased stress coping. Also relative to the dissonant acculturation profile, those assigned to the selective acculturation profile ($X_2$) had CUDIT-R scores that were on average .367 standard deviations lower as a result of the positive effects of decreased stress coping. For context, a one standard deviation decrease in CUDIT-R score for the full sample represents a drop of 6.5 points. From a CUDIT-R scoring perspective, this could represent a person dropping from a score of 12 (i.e. possible cannabis use disorder, referral for assessment) to a score of five or six. A score of five or six, according to the scale designers, is below the recommended cutoff for hazardous cannabis use (Adamson et al., 2010). Full statistics for the mediation of acculturation profile on CUDIT-R score by developmental strain and stress coping are in Table 18.
Table 18. Mediation Effects of Developmental Strain & Stress Coping on CUDIT-R Score.

<table>
<thead>
<tr>
<th>Path</th>
<th>$\beta$</th>
<th>SE</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Relative total effects of X on Y (c)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_1 \rightarrow$ CUDIT-R Score</td>
<td>-.483</td>
<td>1.079</td>
<td>-2.8909</td>
<td>.004</td>
</tr>
<tr>
<td>$X_2 \rightarrow$ CUDIT-R Score</td>
<td>-.426</td>
<td>1.011</td>
<td>-2.7260</td>
<td>.007</td>
</tr>
<tr>
<td><strong>Relative direct effects of X on $M_1$ &amp; $M_2$ (a)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_1 \rightarrow$ Developmental Strain</td>
<td>-.535</td>
<td>.134</td>
<td>-3.312</td>
<td>.001</td>
</tr>
<tr>
<td>$X_2 \rightarrow$ Developmental Strain</td>
<td>-.754</td>
<td>.125</td>
<td>-4.986</td>
<td>.000</td>
</tr>
<tr>
<td>$X_1 \rightarrow$ Stress Coping</td>
<td>-1.031</td>
<td>.169</td>
<td>-7.255</td>
<td>.000</td>
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<tr>
<td>$X_2 \rightarrow$ Stress Coping</td>
<td>-1.120</td>
<td>.159</td>
<td>-9.008</td>
<td>.000</td>
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<tr>
<td><strong>Relative direct effects of $M_1$ &amp; $M_2$ on Y (b)</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Developmental Strain $\rightarrow$ CUDIT-R Score</td>
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<td>.590</td>
<td>.7669</td>
<td>.440</td>
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<tr>
<td>Stress Coping $\rightarrow$ CUDIT-R Score</td>
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<td>.466</td>
<td>3.560</td>
<td>.001</td>
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<tr>
<td><strong>Relative direct effects of X on Y (c')</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>$X_1 \rightarrow$ CUDIT-R Score</td>
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<td>-1.160</td>
<td>.448</td>
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<tr>
<td>$X_2 \rightarrow$ CUDIT-R Score</td>
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<td>1.146</td>
<td>-0.084</td>
<td>.929</td>
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<td></td>
<td></td>
<td>95% CI</td>
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<tr>
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<td>.0417</td>
<td>[-.1180, .0488]</td>
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<tr>
<td>$X_2 \rightarrow$ Dev. Strain $\rightarrow$ CUDIT-R Score</td>
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<td>.0600</td>
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<tr>
<td>$X_1 \rightarrow$ Stress Coping $\rightarrow$ CUDIT-R Score</td>
<td>-1.3155</td>
<td>.0954</td>
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</tr>
<tr>
<td>$X_2 \rightarrow$ Stress Coping $\rightarrow$ CUDIT-R Score</td>
<td>-1.3668</td>
<td>.1226</td>
<td>[-.6113, -.1334]</td>
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Ref. Group=Dissonant Acculturation, $X_1$=Consonant Acculturation, $X_2$=Selective Acculturation; $M_1$=Developmental Strain, $M_2$=Stress Coping
Finally, for the fourth mediation model with the outcome as SPS Cannabis score, the total effect model was significant and explained 16.9% of the variance in SPS Cannabis scores ($R^2 = .169$; $F(2,501) = 50.84$, $p < .001$). Relative to dissonant acculturation, membership in consonant ($\beta = -.910$, $t(501) = -8.269$, $p < .001$) or selective ($\beta = -.914$, $t(501) = -9.354$, $p < .001$) acculturation groups was associated with significantly lower SPS Cannabis scores on average. The models of direct effects of acculturation profile on both developmental strain and stress coping maintained significance, as did the associations between acculturation profile and the mediating variables. Compared to dissonant acculturation, consonant and selective acculturation were associated with reductions in developmental strain and stress coping scores on average. The direct effects model of acculturation profile, developmental strain, and stress coping on SPS Cannabis score was significant and explained 34.8% of the variance in SPS Cannabis scores ($R^2 = .348$; $F(4,499) = 66.60$, $p < .001$). One standard deviation increases in developmental strain ($\beta = .201$, $t(499) = 3.919$, $p < .001$) and stress coping ($\beta = .367$, $t(499) = 6.401$, $p < .001$) were associated with significantly higher SPS Cannabis scores on average. Consonant acculturation, relative to dissonant acculturation, remained significantly associated with SPS Cannabis scores ($\beta = -.298$, $t(499) = -2.649$, $p = .008$), while selective acculturation dropped off in terms of its significance as a predictor of SPS Cannabis scores in the full model ($\beta = -.176$, $t(499) = -1.629$, $p = .104$). Collectively, these findings, along with significant 95% bootstrap confidence intervals for relative indirect effects of acculturation profile on SPS Cannabis scores, paint two different pictures. With participants assigned to the consonant acculturation profile, developmental strain and stress coping partially mediated the relationship between intergenerational acculturation and SPS Cannabis scores. Conversely, with participants assigned to the selective acculturation profile...
profile, developmental strain and stress coping fully mediated the relationship between intergenerational acculturation and SPS Cannabis scores.

Those assigned to the consonant acculturation profile ($X_1$) had SPS Cannabis scores that were on average .161 standard deviations lower as a result of the positive effects of decreased developmental strain and .451 standard deviations lower as a result of the positive effects of decreased stress coping. Also relative to the dissonant acculturation profile, those assigned to the selective acculturation profile ($X_2$) had SPS Cannabis scores that were on average .221 standard deviations lower as a result of the positive effects of decreased developmental strain, and .517 standard deviations lower as a result of the positive effects of decreased stress coping. For reference, a one standard deviation decrease in SPS Cannabis score for the full sample represents a drop of 1.3 points. Readers and researchers can interpret this change in SPS Cannabis score as a significant drop in both temporal proximity and variety of problems associated with cannabis use. Full statistics for the mediation of acculturation profile on SPS Cannabis score by developmental strain and stress coping are in Table 19.
Table 19. Mediation Effects of Developmental Strain & Stress Coping on Mean SPS Cannabis Score.

<table>
<thead>
<tr>
<th>Path</th>
<th>( \beta )</th>
<th>SE</th>
<th>t</th>
<th>Sig.</th>
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<tr>
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<td>-.910</td>
<td>.142</td>
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<tr>
<td>( X_2 \rightarrow SPS ) Cannabis Score</td>
<td>-.914</td>
<td>.126</td>
<td>-9.354</td>
<td>.000</td>
</tr>
<tr>
<td><strong>Relative direct effects of X on M (_1) &amp; M (_2) (a)</strong></td>
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<td></td>
<td></td>
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<tr>
<td>( X_1 \rightarrow Developmental Strain )</td>
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<td>.125</td>
<td>-7.496</td>
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<td>( X_2 \rightarrow Developmental Strain )</td>
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<td>.111</td>
<td>-11.559</td>
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<td></td>
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<tr>
<td>Developmental Strain ( \rightarrow SPS ) Cannabis Score</td>
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<td>.057</td>
<td>3.919</td>
<td>.000</td>
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<tr>
<td>Stress Coping ( \rightarrow SPS ) Cannabis Score</td>
<td>.367</td>
<td>.056</td>
<td>6.401</td>
<td>.000</td>
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<td><strong>Relative direct effects of X on Y (c’)</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( X_1 \rightarrow SPS ) Cannabis Score</td>
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<td>.145</td>
<td>-2.649</td>
<td>.008</td>
</tr>
<tr>
<td>( X_2 \rightarrow SPS ) Cannabis Score</td>
<td>-.176</td>
<td>.139</td>
<td>-1.630</td>
<td>.104</td>
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<tr>
<td><strong>Bootstrapping results for relative indirect effects</strong></td>
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<td>95% CI</td>
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<tr>
<td>( X_1 \rightarrow Developmental Strain \rightarrow SPS ) Cannabis Score</td>
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<td>.0443</td>
<td>[-.2533, -.0796]</td>
<td></td>
</tr>
<tr>
<td>( X_2 \rightarrow Developmental Strain \rightarrow SPS ) Cannabis Score</td>
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<td>.0579</td>
<td>[-.3399, -.1117]</td>
<td></td>
</tr>
<tr>
<td>( X_1 \rightarrow Stress Coping \rightarrow SPS ) Cannabis Score</td>
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<td>.0915</td>
<td>[-.6387, -.2774]</td>
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</tr>
<tr>
<td>( X_2 \rightarrow Stress Coping \rightarrow SPS ) Cannabis Score</td>
<td>-.5168</td>
<td>.1009</td>
<td>[-.7179, -.3252]</td>
<td></td>
</tr>
</tbody>
</table>

Ref. Group=Dissonant Acculturation, X1=Consonant Acculturation, X2=Selective Acculturation; M1=Developmental Strain, M2=Stress Coping
Summary of Findings

This sample of Latinx EAs (N=504)—categorized into three distinct intergenerational acculturation profiles—exhibited significant differences in demographic, developmental, behavioral, and substance use factors between groups. Socio-demographically, participants assigned to the dissonant acculturation profile reported significantly lower rates of school enrollment, personal income, and parental income and support relative to those assigned to the consonant or selective acculturation profiles. Further, they reported significantly higher rates of lifetime arrest or incarceration, higher rates of 1st generation status, and an earlier average age of onset for substance use compared to their peers. Participants assigned to the dissonant acculturation profile, on average, reported significantly higher AUDIT, CUDIT-R, SPS Alcohol, and SPS Cannabis scores relative to those assigned to the other two profiles. They also reported higher average levels of developmental strain and stress coping than their peers. The effects of developmental strain and stress coping varied across indicators of substance use and substance use related problems, as well as between acculturation profiles. For example, there were significant effects of developmental strain on AUDIT score, but only for participants assigned to consonant and selective acculturation profiles. Similarly, stress coping exhibited significant effects on SPS Cannabis scores for respondents assigned to consonant and selective acculturation profiles, but no significant effect on SPS Cannabis scores for those assigned to the dissonant acculturation profile. Developmental strain and stress coping partially mediated the total effect of intergenerational acculturation profile on AUDIT and SPS Alcohol scores. Stress coping fully mediated the total effects of intergenerational acculturation profile on CUDIT-R scores. Finally, developmental strain and stress coping partially mediated the total effect of consonant
acculturation on SPS Cannabis scores, and fully mediated the total effect of selective acculturation on SPS Cannabis scores.
CHAPTER 5: INTEGRATIVE DISCUSSION

This project provides the first evidence that, in addition to higher rates of adolescent pregnancy and arrest/incarceration (Portes et al., 2009), patterns of dissonant acculturation during childhood and adolescence may be linked to substance use problems during emerging adulthood. Furthermore, this study lends important substantiation to previous research suggesting developmental strain and stress coping may exacerbate risk when it comes to emerging adults and substance use. Environmental influences largely normalize experimentation with alcohol and illicit substances during emerging adulthood, which is just one reason why rates of problematic substance use are highest during this time (Davis, Sheidow, Zajac, & McCart, 2012). Latinx EAs with lived experiences of dissonant acculturation may be at greater risk for demonstrating risky substance use behaviors, and potentially for developing substance use disorders. In contrast, consonant upbringings may protect Latinx EAs from risks embedded in U.S. culture. The protective effects of consonant acculturation likely stem from an increase in parental human capital, but there is evidence for even further protective effects provided by patterns of selective acculturation. In all, these findings align with existing research literature surrounding segmented assimilation and Latinx health outcomes (Akresh et al., 2016; Portes et al., 2009; Waters et al., 2010).

As of this writing, this study is the first of its kind to focus primarily on substance use with Latinx EAs through the lenses of segmented assimilation and emerging adulthood theories. Alcohol and illicit substance use disorders are most frequent between the ages of 18 and 25 (SAMHSA, 2018). Although researchers have strewn support for protective effects of Hispanic/Latinx heritage against substance use throughout the literature (Alegría et al., 2008; Bacio, Mays, & Lau, 2013), the rate of alcohol initiates among Hispanic/Latinx individuals
exceeded the rate of alcohol initiates in the general U.S. population in 2018 (SAMHSA, 2019). Furthermore, this substance use tends to persist into emerging adulthood and onward, which can lead to various health and socio-behavioral issues later in life (Chen & Jacobsen, 2012; Marsiglia, Ayers, Han, & Weide, 2019). Enhancing ecological approaches to social work and social work research via these two theories can help practitioners understand better the critical roles development and intergenerational patterns of acculturation play in the development of problematic substance use behaviors with Latinx EAs.

Segmented assimilation theory identifies contributing elements to differential patterns of acculturation between immigrant parents and their children. These patterns, in turn, significantly affect the ways in which second generation immigrant children confront external obstacles to socioeconomic enhancement. Emerging adulthood theory suggests those in their late teens to late twenties undergo a unique developmental stage and navigate cultural expectations with a distinct set of obstacles in their paths. Feeling “in-between” or unstable during these formative years, or exploring one’s identity more deeply, may contribute to feelings of stress and/or strain. Taken together, these theories can allow researchers and social workers the opportunity to attempt to understand the environmental stressors faced by immigrants and the children of immigrants as they adapt to new contexts. Important findings from this project encompass both segmented assimilation and emerging adulthood theories and the respective roles they play in the lives of Latinx EAs in the United States.

The present study drew a largely diverse sample (N=504) of Latinx EAs using Amazon MTurk. There were minimal significant between-group differences regarding ethnicity, with the dissonant acculturation profile comprising a significantly larger proportion of respondents identifying as Honduran compared to the selective acculturation profile. Otherwise, there were
no significant differences between profiles. Further, 63.2% of the full sample reported either Mexican or Puerto Rican ethnicity. This finding is consistent with current demographic and immigration trends wherein a vast majority of immigrants to the United States come from Mexico and Puerto Rico (Flores, 2017).

Regarding generational status, 23.4% of the full sample indicated they were 1st generation immigrants to the United States. This finding is consistent with demographic research that suggests a majority of immigrant children—or in this case, emerging adults—are second generation (Child Trends, 2018; Flores, 2017). Additionally, the proportion of participants assigned to the dissonant acculturation profile who identified as 1st generation immigrants (31.7%) was significantly greater than that of the consonant acculturation profile (15.4%). This increased concentration of 1st generation immigrants likely explains partly why participants assigned to the dissonant acculturation profile reported significantly lower personal and parental incomes compared to participants assigned to either consonant or selective acculturation profiles. Past research suggests socioeconomic status (SES) correlates significantly and positively with generational status among immigrants in the United States (Chun & Mobley, 2014).

Another explanation for the lower average SES reported by participants assigned to the dissonant acculturation profile is what Portes & Rumbaut (2001) called market bifurcation. In these markets, significant demands exist at the lower ends for low or unskilled service workers and at the higher ends for credentialed technicians and professionals, with few opportunities for well-paying work in between. Immigrants to the United States with lower levels of education in turn meet these demands by crowding into the low-paying service sector. Immigrants without legally recognized documentation, often without alternative recourse, frequently fill these low-paying jobs as well (Orrenius & Zavodny, 2009). The reader can see these patterns reflected in
the demographic descriptions of participants assigned to the dissonant acculturation profile. Here, on average, participants were significantly less likely to report enrollment at colleges or universities, more likely to report full-time employment, and still reported significantly lower personal incomes than their consonant or selective acculturating peers. Further exacerbating gaps in SES, parental levels of education for participants assigned to the dissonant acculturation profile were significantly lower, on average, compared to parents of respondents assigned to the other two groups. This partially explains significant differences between parental incomes of respondents assigned to the dissonant acculturation profile ($16,092) and those assigned to consonant ($47,322) or selective ($48,922) acculturation profiles.

Finally, a greater proportion of participants designated as having experienced dissonant acculturation reported not possessing citizenship or legally recognized documentation, which likely drove down SES as well. Roughly 12% of the full sample indicated they were not citizens or legal permanent residents of the U.S. This figure is lower than national estimates suggesting almost a quarter (23%; Radford, 2019) of the U.S. foreign-born population are undocumented immigrants. However, a significantly greater proportion of participants assigned to the dissonant acculturation profile identifying as such (26.1%) compared to their consonantly (5.2%) or selectively (6.6%) acculturating peers. This increased representation of potentially undocumented immigrants in the dissonant acculturation group likely accounts for some of the significantly higher reported rates of arrest/incarceration in this group as well. The rest likely stems from past segmented assimilation research, which suggests intergenerational patterns of dissonant acculturation more frequently trend towards downward assimilation, which for most translates into lives of problematic substance use, arrest and incarceration, and even premature death (Portes et al., 2009).
The proposal for this study hypothesized that scores on measures of substance use would be, on average, highest for those who experienced acculturative dissonance with their parents/primary caregivers. This hypothesis stemmed from previous research demonstrating negative correlations between dissonant pathways of segmented assimilation and outcomes closely related to substance use such as poorer health and academic achievement (Akresh et al., 2016; Portes et al., 2005, & Waters et al., 2010). Conversely, many past acculturation studies suggested maintenance of familial cultural heritage protects against some of the negative aspects of acculturation, such as engaging in risky substance use behaviors (Chartier, Thomas, & Kendler, 2017; Eitle, Wahl, & Aranda; 2009; Saucedo et al., 2018). Consequently, this study proposed the selective acculturation group will have, on average, the lowest AUDIT/CUDIT scores and fewest substance use related problems of the three groups. Further, a priori hypotheses for this study predicted stronger associations between the acculturative dissonance group and substance use problems than between the acculturative dissonance group and substance use frequency. This assumption stemmed from the work of Cooper (1994) and the development of the Drinking Motives Questionnaire (DMQ), which revealed stronger correlations between coping-related alcohol use and drinking problems than coping-related alcohol use and both alcohol use frequency and quantity.

Findings from analyses largely support these initial hypotheses. Average scores on the AUDIT, CUDIT-R, and the SPS were highest for those in the dissonant acculturation group. This finding coincides with past research and segmented assimilation theory, which suggests processes of dissonant acculturation can lead to downward assimilation and overall more negative outcomes as young people face societal challenges without strong and supportive parental authorities or communities (Portes & Rumbaut, 2001; Waters et al., 2010). Further, the
significantly earlier average age of onset for substance use reported by participants assigned to the dissonant acculturation profile likely accounts for part of these phenomena. There exists significant research evidence that earlier and heavier use of substances predicts issues with substances later in life (Hingson, Heeren, & Winter, 2006; Patrick, Schulenberg, O’Malley, Johnston, & Bachman, 2011), although few, if any studies examine connections between age of onset of substance use and race/ethnicity. In addition, prior research exploring associations between adverse childhood experiences (ACEs) and substance use outcomes with Latinx EAs delineated positive associations between adverse events during childhood and substance use during emerging adulthood (Allem, Soto, Baezconde-Garbanati, & Unger, 2015). These authors argue that ACEs could be especially devastating for Latinx EAs, as many in Latinx cultures perceive families as unique sources of support and strength, which makes these particular EAs especially vulnerable to childhood trauma (Allem et al., 2015). Similar to the notion of role reversal in dissonant acculturation, traumas surrounding disrupted bonds and attachments with close family members may result in more oppositional behaviors, weaker community bonds, and increased affiliations with deviant peer groups who exert significant influence on early decisions regarding substance use (Allem et al., 2015). Findings from this study regarding worse substance use outcomes for EAs categorized into the dissonant acculturation profile corroborate evidence from prior research on segmented assimilation. Overall, the substance use portrait for Latinx EAs from families where they experienced acculturative dissonance does not appear to be one of overwhelmingly positive outcomes, but rather one of increased risks for substance use and substance use-related problems.

In contrast, average scores on the AUDIT and SPS Alcohol scales were lowest for the selective acculturation group. Further, scores on the SPS Alcohol scale were statistically and
significantly lower for the selective acculturation group compared to both consonant and dissonant acculturation groups. This finding corroborates past acculturation studies that highlight the protective effects of maintaining familial cultural heritage against the darker sides of acculturation to U.S. society and culture (Chartier, Thomas, & Kendler, 2017; Eitle, Wahl, & Aranda; 2009; Sauceda et al., 2018). It also aligns with mounting evidence that higher levels of acculturation to U.S. mainstream culture, on average, are significantly associated with higher levels of substance use severity among Latinx individuals (Chartier et al., 2015; Serafini et al., 2017). Further, an overwhelming majority (85%) of respondents assigned to the consonant acculturation profile indicated both they and their parents/primary caregivers preferred traditional “American” ways of doing things more often than not. This suggests parents/primary caregivers of respondents categorized into the consonant acculturation group may be more ingrained in U.S. culture and, as a result, more acquiescent towards U.S. mainstream attitudes towards substance use.

Average CUDIT-R and SPS Cannabis scale scores, although not significantly different, were higher for those in the selective acculturation group relative to the consonant acculturation group. This may indicate that protective effects of cultural maintenance differ in strength or significance depending on the classification of the substance in question (e.g. cannabis vs. alcohol). Furthermore, this finding bears further attention as cannabis legalization and decriminalization continues to expand throughout the United States. While alcohol continues to be the substance of choice among college students, cannabis use among college students and non-college attending EAs continues to rise. According to recent Monitoring the Future data, 38% of full-time college students reported past year cannabis use, with 21% reporting past month use (Schulenberg et al., 2018). Furthermore, non-college attending EAs report higher
levels of daily cannabis use (13.2%) than their college-attending peers (4.4%; Schulenberg et al., 2018).

Finally, regression coefficients were larger for the SPS than for the AUDIT and CUDIT-R. This finding coincides with past work from Cooper (1994), which suggests stronger correlations between substance use as a means to cope with stress and substance use problems, compared to substance use quantity or frequency. Furthermore, past research demonstrates consistently that Latinx individuals may be at greater risk for experiencing problems related to substance use, rather than substance use itself (Martinez Jr., 2006; Perreira et al., 2019, Pinedo, Zemore, & Rogers, 2019; Serafini et al., 2017). Additionally, prior research indicates Latinx individuals who consume alcohol tend to consume in larger quantities and are more prone to binge or heavy episodic drinking (Serafini et al., 2017; Venegas et al., 2012). Outcomes from this study reinforce the notion that Latinx EAs may be at greater risk for experiencing increased problems associated with substance use rather than increased substance use itself.

A second a priori hypothesis for this study suggested individuals in the dissonant acculturation group would report higher levels of developmental strain and stress coping. This hypothesis arose from past work suggesting adolescents and college students who perceive greater cultural incongruities in their lives also have increased depressive symptoms (Cano et al., 2015). Theoretically, Latinx emerging adults who perceived greater cultural incongruities in their own lives may feel pressure to exhibit behaviors and values of both U.S. and Latinx cultural streams (Cano et al., 2015). Consequently, these pressures, expectations, and conflicts with family members stemming from these pressures and expectations may increase an individual’s level of developmental strain. Further, research demonstrates consistently that processes of assimilation and acculturation often result in elevated levels of stress (Lorenzo-Blanco, 2016;
Perreira et al., 2019; Zamboanga et al., 2009). Without as many familial supports and decreased levels of human capital available at their disposal, this study hypothesized Latinx EAs who experienced dissonant acculturation will have higher levels of stress, and thus use substances as a means to cope with stress more frequently. This hypothesis stems from segmented assimilation theory itself, wherein Latinx children who experience dissonant acculturation meet societal and interpersonal challenges directly and oftentimes in isolation, without parental/caregiver support, and without family capital and resources (Portes & Rumbaut, 2001). Again, this acculturative dissonance often results in downward assimilation (Portes & Rumbaut, 2001). Previous research links downward assimilation to a host of negative social outcomes such as arrest, incarceration, and poorer academic achievement (Portes et al., 2005; Waters et al., 2010).

Findings from analyses largely validate this initial hypothesis. Participants from the dissonant acculturation condition, on average, reported higher levels of both developmental strain and stress coping compared to their consonant and selective acculturating peers. This finding aligns with segmented assimilation theory, where those who acculturate dissonantly from their parents/primary caregivers often experience harsh transitions without strong parental or community support. As the young person navigates these transitions, they confront significant obstacles in isolation or with only peer support, which leaves them especially vulnerable to the adoption of maladaptive behaviors associated with downward assimilation (Piedra & Engstrom, 2009; Portes & Rumbaut, 2001). For example, although a vast majority of the full sample (86.7%, \( n=435 \)) reported experiencing lifetime discrimination because of their ethnicity, the dissonant acculturation profile comprised a larger proportion (99.3%, \( n=141 \)) of these individuals compared to the consonant (87.2%, \( n=116 \)) or selective profiles (78.4%, \( n=178 \)). The added strain and stress of navigating negative subcultures and experiencing discrimination in solitude
may increase the risk of Latinx EAs engaging in problematic substance use. Again, without strong familial or community supports throughout acculturative processes, individuals may resort to substance use as a means to cope (Allem et al., 2015).

Average developmental strain scores varied significantly between the consonant and selective acculturation profiles as well. Again, respondents categorized into the consonant acculturation profile reported significantly higher developmental strain scores on average compared to their selective acculturating peers. This significant difference may be, in part, due to what Portes & Rumbaut (2001) termed modes of incorporation. According to sociological principles, the greater the similarities between new immigrants and the welcoming community’s overall class backgrounds, languages, physical appearances, and religions, the more positive the reception and more rapid the integration (Portes & Rumbaut, 2001). In this study, participants responded to a question, “How would you describe your family’s community composition overall (from your upbringing)?” (1=Completely Segregated, 5=Completely Co-Ethnic/Combined). Individuals allocated to the consonant acculturation profile, on average, reported significantly lower levels of ethnic heterogeneity ($M=2.77$, $SD=.86$) in their childhood communities than their selectively acculturating peers ($M=3.63$, $SD=.87$). It is possible the significantly higher degree of developmental strain in the consonant acculturation condition stems, at least in part, from the lack of more co-ethnic or combined communities in the earlier parts of these participants lives. According to segmented assimilation theorists, strong co-ethnic communities can buffer against otherwise harsh transitions to foreign cultures (Portes & Rumbaut, 2001). Another explanation for the higher average developmental strain scores may be that a greater proportion of those assigned to the consonant acculturation profile (87.2%, $n=116$) reported experiencing ethnically focused discrimination compared to those assigned to the
selective acculturation profile (78.4%, n=178). Again, it may also be that traits inherent to selective acculturation more frequently ensure individuals do not confront the strain of acculturation in isolation, but rather with the added protection of stronger and more supportive families and communities.

A third hypothesis for this project involved how increased levels of developmental strain and stress coping may predict increased alcohol and cannabis use. The proposal for this study hypothesized that developmental strain and stress coping would be positively and significantly associated with all substance use outcomes, although there was no prediction of how effects of those two variables on substance use outcomes would differ between groups. This hypothesis emanated from extensive previous research documenting associations between these variables. For example, Smith et al. (under review) found significant, positive correlations between their developmental strain subscale and AUDIT scores ($r=.29$, $p=.006$). Furthermore, multiple examples of prior research detailed consistently the associations between stress coping and substance use (Cooper, 1994; Hauck-Filho et al., 2012; Kuntsche & Kuntsche, 2009).

Findings from the analysis for this project largely confirm these initial hypotheses. There were significant positive correlations between developmental strain, stress coping, and AUDIT and SPS Alcohol scores for most acculturation groups. Furthermore, analyses indicated weak to moderate effects of developmental strain and stress coping on AUDIT and SPS Alcohol scores. The effects of developmental strain on AUDIT scores were largest for those in the consonant and selective acculturation groups, while they were non-significant in the dissonant acculturation group. One reason for this smaller effect of developmental strain on AUDIT scores within the dissonant acculturation group may be that some with higher strain, having grown more accustomed to life stressors, do not resort to substance use as a means to manage. In other words,
those in the dissonant acculturation group may feel grown up earlier, so by the time they reach emerging adulthood, they may have “aged out” of their substance use. Segmented assimilation theorists call this phenomenon—in part—role reversal, where parents/primary caregivers lack the requisite skills to navigate new cultures without assistance from their children (Portes & Rumbaut, 2001). In a sense freed from parental controls at an earlier age, options available to children of immigrants can be more dangerous, especially considering the lack of a countervailing message from parents/primary caregivers. In support of this hypothesis, mean scores on the experimentation subscale of the IDEA-8 (Inventory of Dimensions of Emerging Adulthood) were lowest for participants assigned to the dissonant acculturation profile. The level of experimentation endorsed by participants reflects the degree to which they perceive emerging adulthood as a time of exploration and many possibilities. Prior research with the IDEA and IDEA-8 suggests those who work longer hours tend to endorse feelings of experimentation less (Reifman et al., 2007). This supports outcomes from this study, which suggest dimensions of emerging adulthood may function differently as predictors of substance use with those who experience dissonant acculturation. Analyses produced the same effect pattern for developmental strain and stress coping on SPS Alcohol scores. Overall, especially as they relate to alcohol use, these findings largely extend the generalizability of EA theory as it appears to apply to many Latinx EAs as well.

Effects from SEM analyses produced less significant findings when comparing effects of developmental strain and stress coping on CUDIT-R and SPS Cannabis scores. Many of these non-significant findings may be attributable to measurement issues and/or sample size. For example, less than half (n=219) of the full sample responded to CUDIT-R items. Findings may speak to the normalization of alcohol use as a means to deal with strain and stress—norms that
do not apply as widely to cannabis use—as well. Effects of stress coping on SPS Cannabis scores were weak to moderate for consonant and selective acculturation groups respectively. Regarding the CUDIT-R, there emerged a weak to moderate significant effect of stress coping on CUDIT-R scores within the selective acculturation group only. Worth noting is the effect of stress coping on CUDIT-R score was approaching significance for the consonant acculturation group ($\beta=.286$, $p=.063$), although the effect ultimately was non-significant. These findings may reflect differential attitudes towards cannabis use among Latinx EAs. In other words, Latinx EAs who reported some level of cannabis use may not use it as a means to cope with stress or strain, but for recreational or experimentation purposes only.

The significant relationship between stress coping and CUDIT-R score with the selective acculturation group may be emblematic of a certain level of privilege as well. This highlights one of the most frequent criticisms of emerging adulthood theory; that emerging adulthood at its core is mostly about the privilege of postponing traditional responsibilities of adulthood. Scholars have hoisted arguments against the theory on the grounds it lacks generalizability to other societies as well as within the highly industrialized societies it is supposed to apply. Emerging adulthood and its age of possibility is, in a sense, a luxury afforded to those with sufficient means to delay traditional responsibilities associated with adulthood. The outcome of developmental strain having a stronger effect on cannabis use with EAs from selective and consonant acculturation groups illuminates this critique. These two groups, coincidentally, reported significantly higher personal incomes as well as levels of family income and education. Furthermore, cannabis, unlike alcohol, remains a federally controlled, schedule one substance. This, in many states, prohibits individuals from consuming it legally. This element of social
deterrence may partially explain the diminished effects of developmental strain and stress coping on cannabis use relative to alcohol use.

Finally, the proposal for this study hypothesized the inclusion of stress coping and developmental strain would partially mediate the associations between segmented assimilation and substance use with Latinx EAs. In other words, there should have been significant associations between patterns of acculturation and substance use both before and after the inclusion of developmental strain and stress coping as mediating variables. Results from analyses largely support this preliminary hypothesis. Developmental strain and stress coping partially mediated the total effects of acculturation profile on both AUDIT and SPS Alcohol score. This indicates all three variables are important when considering an individual’s substance use risk.

In contrast, developmental strain and stress coping fully mediated the effect of acculturation profile on SPS Cannabis scores for those in the selective acculturation group. Moving away from families, enrolling in college, and managing the stressors typically associated with the U.S. “emerging adult experience” may account for the greater strength of developmental strain and stress coping in the substance use of Latinx EAs from the selective acculturation condition. Similarly, stress coping fully mediated the effects of acculturation profiles on CUDIT-R scores. This too may represent the classical view of emerging adulthood as a time of exploration and possibility. Feeling liberated from parental or primary caregiver oversight and experiencing transitional stressors in isolation for the first time may increase the risk of cannabis use as a coping mechanism with Latinx EAs from consonant or selective acculturation groups.

Social work practitioners should employ early prevention and intervention techniques with Latinx youth in the U.S. who are acculturating without the support of parents or primary caregivers. From a strengths-focused approach, these young people are extremely resilient.
Capturing these and other resilience processes in intervention and prevention models could prove just as crucial as decreasing risks by promoting substance use education through service providers. In addition, substance use intervention and prevention with Latinx EAs should include ways to reduce the harmful effects of stress and developmental strain. Another important consideration for substance use interventions is access to age and culturally responsive substance use services. Receipt of specialized substance use treatment is low in the general population, but EAs are no exception (SAMHSA, 2019). Substance use treatment utilization among Latinx EAs is even lower. Increasing access to these services, and more importantly enhancing the subjective desirability of these services, is a vital component to successful substance use intervention and prevention. A recent qualitative study found many Latinx individuals indicated formal substance use treatment was undesirable to them due to various culture-specific factors (Council on Recovery, 2017). According to their research, barriers to specialty treatment included: provider’s lack of experiences with immigration or discrimination, treatment efficacy expectations and abstinence-only recovery goals, and perceived stigma and lack of social supports (Council on Recovery, 2017). Addressing these barriers, building meaningful connections, increasing considerations for more culturally-specific or relevant factors, and using more person-in-context and strengths oriented approaches to substance use intervention and prevention could go a long way toward reaching at-risk Latinx EAs.

Limitations

A primary limitation of this study is the use of retrospective recall to identify patterns of acculturation, socioeconomic status, and intergenerational conflict during childhood and adolescence. In general, these early indicators are subject to memory distortion. To this end however, one could argue whether events physically occurred or a person feels they occurred, the
results could be similar. For example, if a respondent believes their values were incongruent with their parents’ regarding U.S.-orientation and culture, they likely experienced many of the same events and emotions (i.e. distancing, distress) as individuals for whom the incongruity physically existed. To control for recall bias, this project used various scales with high levels of internal consistency, so measures of acculturation and intergenerational value agreement should be accurate. In addition, the cross-sectional retrospective study is not as potent or robust as longitudinal prospective research. Nevertheless, findings based off this retrospective methodology offer useful insights regarding variations in segmented assimilation and associated substance use outcomes during emerging adulthood. Conducting a longitudinal prospective study with similar aims would entail data collection over a period of many years.

Another potential limitation is the use of MTurk and self-reported data, but according to numerous studies and book chapters (Chan, 2009; Mason & Suri, 2012); both self-reported data and online survey data collection have demonstrated validity and reliability as research methods. Nonetheless, it bears stating there are risks associated with collecting data via MTurk, primarily that workers may attempt to misrepresent themselves (Sharpe Wessling, Huber, & Netzer, 2017). This presents an external threat to unbiased estimates derived from the data. Prior research on MTurk data reliability suggests levels of misrepresentation are negligible when no economic motivations to fabricate an identity are present (Sharpe et al., 2017), while others suggest using IP address tracking programs may reduce threats to data quality from foreign workers (Kennedy et al., 2018). Finally, a recent paper on MTurk data quality indicates screening data and participants, along with using response validity indicators may mitigate many of these detrimental effects (Chmielewski & Kucker, 2020). To strengthen the reliability and validity of data gained from this study, potential participants were screened continuously, screenings
consisted entirely of open-ended questions, and online surveys had embedded within them several validity check items.

In addition to threats to reliability, there is the limitation of generalizability. The threat to external validity with the present study is evident in that the sample is comprised of Latinx emerging adults in the United States who have access to the internet and requisite technology. The lived experiences of other people from this group in other countries would be wholly different in some ways, as the United States presents a unique set of privileges and challenges that do not exist or function the same way in other countries. Finally, when measuring acculturation specifically, generalizability remains an issue as individuals from different cultures or from different family structures may acculturate in very different ways. They may share many of the same experiences as well. In fact, one could argue the concepts of family cohesion and intergenerational conflict could apply to any subpopulation regardless of race or ethnicity.

Another potential limitation of this study involves the use of the SPSS PROCESS macro as a modeling tool. Although prior research suggests researchers may achieve similar outcomes using either SPSS PROCESS or SEM (Hayes, Montoya, & Rockwood, 2017), there are some unique limitations to the former. Because PROCESS relies on linear regression to construct models from observed variables, bias likely influenced the estimates of direct and indirect effects to some degree. Additionally, PROCESS does not produce omnibus measures of model fit, while other SEM programs do. Finally, PROCESS does not have any means for dealing with missing data other than listwise deletion. As a result, mediation analyses excluded some cases that could have otherwise been included given a different analytical tool. As discussed earlier, *Mplus* and many other SEM programs implement more advanced missing data methods, such as FIML,
while PROCESS does not. With these limitations in mind, this study provides unique insights into the motivations behind alcohol and cannabis use with Latinx EAs from a wide spectrum of experiences. Harnessing this new knowledge as we work with these populations through personal and societal ills, through genuine and honest acknowledgments of their resilience and strengths, and through their unique experiences and traumas, is one small step towards one-day achieving more equitable health outcomes for all.
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https://www.childtrends.org/?indicators=immigrant-children


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December 10, 2019

Notice of Approval: New Submission

Principal Investigator: Douglas Smith
CC: Kyle Michael Bennett
Protocol Title: Latinx emerging adult substance use: Testing associations between segmented assimilation, stress coping, and substance use
Protocol Number: 20398
Funding Source: University of Illinois at Urbana-Champaign
School of Social Work
Review Type: Full Board
Status: Active
Risk Determination: No more than minimal risk
Approval Date: December 10, 2019
Closure Date: December 9, 2024

This letter authorizes the use of human subjects in the above protocol. The University of Illinois at Urbana-Champaign Institutional Review Board (IRB) has reviewed and approved the research study as described.

The Principal Investigator of this study is responsible for:

- Conducting research in a manner consistent with the requirements of the University and federal regulations found at 45 CFR 46.
- Using the approved consent documents, with the footer, from this approved package.
- Requesting approval from the IRB prior to implementing modifications.
- Notifying OPRS of any problems involving human subjects, including unanticipated events, participant complaints, or protocol deviations.
- Notifying OPRS of the completion of the study.
APPENDIX B: RESEARCH CONSENT FORM

Confidential

Consent

Please complete the survey below.

Thank you!

1) Informed Consent: Acculturation & Substance Use Study

Principal Investigator - Douglas Smith, PhD, Associate Professor, School of Social Work

Greetings!

You are eligible to participate in a research study about acculturation to the United States and substance use. This study is open to 18-29 year olds who self-identify as Hispanic, Latino/a/x, or Chicano/a/x. The purpose of this document is to inform you of potential risks of participation so you can make an informed decision about whether or not you want to participate in this study. This study will consist of answering questions on an online assessment. Specifically, you will be asked about your background (i.e., income, education, citizenship), experiences with acculturation, patterns of drug and alcohol use, and reasons for using alcohol or other substances. For more sensitive questions relating to illicit substance use and/or citizenship, or questions you feel are too personal, you are given the option to opt out of answering by selecting “I prefer not to answer.” Selecting this option will not affect compensation in any way, assuming the rest of the survey is completed satisfactorily (i.e., no missed questions and completed in an amount of time indicating you read each question and provided thoughtful responses). More specifically, you must answer 90% of survey questions (or 120 of 156 questions) with answers other than “I Prefer not to Answer” in order to receive compensation. Upon satisfactory completion of this survey you will be credited $2.00 to your Amazon Worker account. Based on pilot test results, the full survey should take about 15-30 minutes to complete, although it may take you slightly less or more time depending on your experience completing such surveys. Specifically for this study, you must a) be between ages 18-29, b) complete it in a time we deem reasonable for having read the questions and given thoughtful responses, and c) be willing and able to complete the online survey in English. Please download or take a screenshot of this consent document, if you so choose, for your own personal records.

The main risk of participating in this study is that your responses could be linked to your specific mTurk user account. For example, if you are under age 21 and report drinking or other substance use, the main risk is that someone could learn your answers. However, we will take several steps to protect your confidentiality, including:

- We encourage you to do the survey in a private location.
- The survey link will take you to REDCap, a secure, HIPAA-compliant web application where your information will be protected and stored.
- We will delete any identifying information we receive from mTurk that could possibly be traced back to your mTurk account.
- We will refrain from using your mTurk account number to look up your identity within Amazon mTurk.
- Again, you are given the option to opt out of particularly sensitive items by selecting “Prefer not to answer.”
- We will store your data in password-protected files where any identifying email we were provided has been stripped upon receipt of data.
- When this research is discussed or published, no one will know that you were in the study. However, laws and university rules might require us to disclose de-identified information about you. For example, if required by laws or University Policy, study information you supply may be seen or copied by the following people or groups: a) The university committee and office that reviews and approves research studies, the Institutional Review Board (IRB) and Office for Protection of Research Subjects; and b) University and state auditors, and departments of the university responsible for oversight of research.

Though unlikely, if you become upset by any of these questions, we encourage you to seek help. If you are in immediate danger, call 911. If you would like to speak to someone locally, search your local yellow pages for “crisis intervention” or “Hotlines,” or you can find 1-800 hotline resources at http://www.aalccounseling.com/mons hottlines.htm. Further, the suicide prevention hotline connects callers to trained crisis counselors (800-273-8255) and HelpWhenYouNeedIt.org provides over 350,000 listings for social services, mental health, substance use, legal, and financial assistance. You may stop responding to questions at any time if you feel discomfort.

Please contact Kyle M. Barnett at (217) 333-5398 or kbarnett@illinois.edu with any questions, or concerns about the research. You may also call Kyle M. Barnett if you feel you have been injured or harmed by this research.

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• I agree to participate in this study.

☐ I agree
## APPENDIX C: SURVEY MEASURES WITH CITATIONS

### IDEA-8 Items

Confidential

#### IDEA-8

<table>
<thead>
<tr>
<th>IDEA-8 Items</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Prefer not to Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Is this period of your life a time of many possibilities?</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>2) Is this period of your life a time of exploration?</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>3) Is this period of your life a time of feeling stressed out?</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>4) Is this period of your life a time of high pressure?</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>5) Is this period of your life a time of defining yourself?</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>6) Is this period of your life a time of deciding on your own beliefs and values?</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>7) Is this period of your life a time of feeling adult in some ways but not others?</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>8) Is this period of your life a time of gradually becoming an adult?</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

| 9) Please select "Disagree" | ○ Strongly Disagree | ○ Disagree | ○ Agree | ○ Strongly Agree | ○ Prefer not to Answer |

Please think of this time in your life. By "time in your life" we refer to the present time, plus the last few years that have gone by, and the next few years to come, as you see them. In short, think of a roughly 5-YEAR PERIOD, with the present in the middle.

<table>
<thead>
<tr>
<th>EARS Items</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Prefer not to Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) You use substances because you think substance use is a rite of passage.</td>
<td>○</td>
<td></td>
<td></td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>2) You use substances because it won’t throw your life off track.</td>
<td>○</td>
<td></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>3) You use substances because you are in no rush to grow up.</td>
<td>○</td>
<td></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>4) You use substances because it was what people your age are supposed to do before they grow up.</td>
<td>○</td>
<td></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>5) You use substances because it will not affect your future.</td>
<td>○</td>
<td></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>6) You use substances because you’ve been through a lot of changes recently in housing, relationships, and jobs.</td>
<td>○</td>
<td></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>7) You use substances because things are changing so fast during this time of your life.</td>
<td>○</td>
<td></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>8) You use substances because this part of your life is a difficult period of time.</td>
<td>○</td>
<td></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>9) You use substances because there won’t be any long term consequences.</td>
<td>○</td>
<td></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>10) You use substances because there hasn’t been a lot of consistency during this time of your life.</td>
<td>○</td>
<td></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>11) You use substances because you don’t feel staid at this age.</td>
<td>○</td>
<td></td>
<td>○</td>
<td>○</td>
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</tr>
<tr>
<td>12</td>
<td>You use substances because so many things are &quot;up in the air&quot; during this stage of your life.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>You use substances because it helps you to lessen the strain from trying to figure out what you want in your life.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>You use substances because it helps you take your mind off the pressures of making choices about the future.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>You use substances because it is stressful to explore what you want your life to be like.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>You use substances because it's overwhelming to sort out all your choices in life.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>You use substances because you don't know what to expect in your future.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>You use substances because you won't have a chance to do this when you're older.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>You use substances because it won't be acceptable for you to do this when you're older.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

AUDIT Items

"Next we are going to ask you some questions about your ALCOHOL USE during this PAST YEAR. For reference, one standard “drink” of alcohol equals approximately one 12oz. can of standard beer, a 5oz. glass of wine, or a 1.5oz shot of 80-proof spirits such as vodka or whiskey."

<table>
<thead>
<tr>
<th>Item</th>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>How often do you have a drink containing alcohol?</td>
<td>Never, Monthly or Less, 2-4 Times Per Month, 2-3 Times Per Week, 4 or More Times Per Week, Prefer Not to Answer</td>
</tr>
<tr>
<td>2)</td>
<td>How many drinks containing alcohol do you have on a typical day when you are drinking?</td>
<td>1 or 2, 3 or 4, 5 or 6, 7 to 9, 10 or more, Prefer Not to Answer</td>
</tr>
<tr>
<td>3)</td>
<td>How often do you have six or more drinks on one occasion?</td>
<td>Never, Monthly or Less, 2-4 Times Per Month, 2-3 Times Per Week, 4 or More Times Per Week, Prefer Not to Answer</td>
</tr>
<tr>
<td>4)</td>
<td>How often during the last year have you found you were not able to stop drinking once you started?</td>
<td>Never, Less than Monthly, Monthly, Weekly, Daily or Almost Daily, Prefer Not to Answer</td>
</tr>
<tr>
<td>5)</td>
<td>How often during the last year have you failed to do what was normally expected of you because of drinking?</td>
<td>Never, Less than Monthly, Monthly, Weekly, Daily or Almost Daily, Prefer Not to Answer</td>
</tr>
<tr>
<td>6)</td>
<td>How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?</td>
<td>Never, Less than Monthly, Monthly, Weekly, Daily or Almost Daily, Prefer Not to Answer</td>
</tr>
<tr>
<td>7)</td>
<td>How often during the last year have you had a feeling of guilt or remorse after drinking?</td>
<td>Never, Less than Monthly, Monthly, Weekly, Daily or Almost Daily, Prefer Not to Answer</td>
</tr>
</tbody>
</table>
8) How often during the last year have you been unable to remember what happened the night before because of your drinking?
- Never
- Less than Monthly
- Monthly
- Weekly
- Daily or Almost Daily
- Prefer Not to Answer

9) Have you or someone else been injured because of your drinking?
- No
- Yes, but not in the last year
- Yes, during the last year
- Prefer not to Answer

10) Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?
- No
- Yes, but not in the last year
- Yes, during the last year
- Prefer not to Answer

---

**SPS Alcohol Items**

"Next we want to go over a list of common problems related to alcohol or other drug use. After each of the following questions, we would like you to tell us the last time you had this problem. These next questions relate specifically to your ALCOHOL USE."

<table>
<thead>
<tr>
<th>Question</th>
<th>Never</th>
<th>1+ Years Ago</th>
<th>7-12 Months Ago</th>
<th>4-6 Months Ago</th>
<th>2-3 Months Ago</th>
<th>Past Month</th>
<th>Prefer not to Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) When was the last time that alcohol repeatedly caused you not to meet your responsibilities?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>2) When was the last time that you repeatedly used alcohol in unsafe situations?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>3) When was the last time that alcohol caused you to have repeated problems with the law?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4) When was the last time that you kept using alcohol even though it was leading to fights or getting you into trouble with other people?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>5) When was the last time that you needed more alcohol to get high?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>6) When was the last time that you had withdrawal problems from alcohol?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>7) When was the last time you used alcohol in larger amounts or longer than you intended?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>8) When was the last time that you have been unable to cut down on or stop using alcohol?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>9) When was the last time that you spent a lot of time getting or using alcohol?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>10) When was the last time that alcohol caused you to give up activities or caused problems?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
11) When was the last time that you kept using alcohol despite medical or psychological problems?

- [ ]
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]

12) When was the last time that you wanted to use alcohol so badly you couldn’t think of anything else?

- [ ]
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]

### DMQ-R Coping

You are almost halfway done! Thanks for your thoughtful and honest answers.

#### DMQ-R-Coping Subscale Items

Listed below are reasons people might be inclined to drink alcoholic beverages. Using the 5-point scale below, decide how frequently your own drinking is motivated by each of the reasons listed.

<table>
<thead>
<tr>
<th></th>
<th>Almost Never/Never</th>
<th>Some of the Time</th>
<th>Half of the Time</th>
<th>Most of the Time</th>
<th>Almost Always/Always</th>
<th>Prefer not to Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1) In the last 12 MONTHS, how often did you drink alcoholic beverages because it helps you when you feel depressed or nervous?

2) In the last 12 MONTHS, how often did you drink alcoholic beverages to cheer you up when you are in a bad mood?

3) In the last 12 MONTHS, how often did you drink alcoholic beverages to forget about your problems?

---

### DMQ-Conformity Items

**DMQ-R Conformity**

Listed below are more reasons people might be inclined to drink alcoholic beverages. Using the 5-point scale below, decide how frequently your own drinking is motivated by each of the reasons listed.

<table>
<thead>
<tr>
<th>Reason</th>
<th>Never/Never</th>
<th>Some of the Time</th>
<th>Half of the Time</th>
<th>Most of the Time</th>
<th>Always/Always</th>
<th>Prefer not to Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. In the last 12 MONTHS, how often did you drink alcohol to fit in with a group you like?</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>2. In the last 12 MONTHS, how often did you drink alcohol to be liked?</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>3. In the last 12 MONTHS, how often did you drink alcohol so you wouldn’t feel left out?</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>4. Please enter the number 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## CUDIT-R Items

### Confidential

**CUDIT-R**

<table>
<thead>
<tr>
<th>Have you used any <strong>CANNABIS</strong> over the past 6 months?</th>
<th>○ Yes</th>
<th>○ No</th>
</tr>
</thead>
</table>

If Yes, Please answer the following questions about your **CANNABIS** use. Select the response that is most correct for you in relation to your **CANNABIS** use over the past 6 **MONTHS**.

<table>
<thead>
<tr>
<th>How often do you use <strong>cannabis</strong>?</th>
<th>○ Never</th>
<th>○ Monthly or Less</th>
<th>○ 2-4 Times Per Month</th>
<th>○ 2-3 Times Per Week</th>
<th>○ 4 or More Times Per Week</th>
<th>○ Prefer Not to Answer</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>How many hours were you high on a typical day when you had been using <strong>cannabis</strong>?</th>
<th>○ Less than 1</th>
<th>○ 1 or 2</th>
<th>○ 3 or 4</th>
<th>○ 5 or 6</th>
<th>○ 7 or More</th>
<th>○ Prefer not to Answer</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>How often during the past 6 <strong>MONTHS</strong> did you find that you were not able to stop using <strong>cannabis</strong> once you had started?</th>
<th>○ Never</th>
<th>○ Less than Monthly</th>
<th>○ Monthly</th>
<th>○ Weekly</th>
<th>○ Daily or Almost Daily</th>
<th>○ Prefer not to Answer</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>How often during the past 6 <strong>MONTHS</strong> did you fail to do what was normally expected of you because of using <strong>cannabis</strong>?</th>
<th>○ Never</th>
<th>○ Less than Monthly</th>
<th>○ Monthly</th>
<th>○ Weekly</th>
<th>○ Daily or Almost Daily</th>
<th>○ Prefer not to Answer</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>How often in the past 6 <strong>MONTHS</strong> have you devoted a great deal of time to getting, using, or recovering from <strong>cannabis</strong>?</th>
<th>○ Never</th>
<th>○ Less than Monthly</th>
<th>○ Monthly</th>
<th>○ Weekly</th>
<th>○ Daily or Almost Daily</th>
<th>○ Prefer not to Answer</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>How often in the past 6 <strong>MONTHS</strong> have you had a problem with your memory or concentration after using <strong>cannabis</strong>?</th>
<th>○ Never</th>
<th>○ Less than Monthly</th>
<th>○ Monthly</th>
<th>○ Weekly</th>
<th>○ Daily or Almost Daily</th>
<th>○ Prefer not to Answer</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>How often in the past 6 <strong>MONTHS</strong> did you use <strong>cannabis</strong> in situations that could be physically hazardous, such as driving, operating machinery, or caring for children?</th>
<th>○ Never</th>
<th>○ Less than Monthly</th>
<th>○ Monthly</th>
<th>○ Weekly</th>
<th>○ Daily or Almost Daily</th>
<th>○ Prefer not to Answer</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Have you ever thought about cutting down, or stopping, your use of <strong>cannabis</strong>?</th>
<th>○ Never</th>
<th>○ Yes, but not in the past 6 months</th>
<th>○ Yes, during the past 6 months</th>
<th>○ Prefer not to Answer</th>
</tr>
</thead>
</table>

---

Next we want to go over a list of common problems related to alcohol or other drug use. After each of the following questions, we would like you to tell us the last time you had this problem. These next questions relate specifically to your CANNABIS USE.

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>1+ Years Ago</th>
<th>7-12 Months Ago</th>
<th>4-6 Months Ago</th>
<th>2-3 Months Ago</th>
<th>Past Month</th>
<th>Prefer not to Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>When was the last time that cannabis caused you not to meet your responsibilities?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>2</td>
<td>When was the last time that you repeatedly used cannabis in unsafe situations?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>3</td>
<td>When was the last time that cannabis caused you to have repeated problems with the law?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4</td>
<td>When was the last time that you kept using cannabis even though it was leading to fights or getting you into trouble with other people?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>5</td>
<td>When was the last time that you needed more cannabis to get high?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>6</td>
<td>When was the last time that you had withdrawal problems from cannabis?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>7</td>
<td>When was the last time that you used cannabis in larger amounts or longer than you intended?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>8</td>
<td>When was the last time that you have been unable to cut down or stop using cannabis?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>9</td>
<td>When was the last time that you spent a lot of time getting or using cannabis?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>10</td>
<td>When was the last time that cannabis caused you to give up activities or caused problems?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

**SFS Items**

**Confidential**

**SFS**

Now we would like to ask you how FREQUENTLY you use various substances. Please respond to the best of your knowledge. If you prefer not to answer any item, please enter the number 99.

1. **During the past 90 days, on how many days have you drunk any kind of alcohol?**

2. **During the past 90 days, on how many days have you gotten drunk or had 5 or more drinks?**

3. **During the past 90 days, on how many days have you used marijuana, hashish, blunts, or THC?**

4. **During the past 90 days, on how many days have you used crack, smoked rock, or freebased?**

5. **During the past 90 days, on how many days have you used other forms of cocaine (powder)?**

6. **During the past 90 days, on how many days have you used heroin (alone or mixed)?**

7. **During the past 90 days, on how many days have you used non-prescription methadone?**

8. **During the past 90 days, on how many days have you used painkillers, opiates/opioids, or other analgesics?**

9. **During the past 90 days, on how many days have you used amphetamines, crystal, ice, glass, or other forms of methadone?**

10. **During the past 90 days, on how many days have you used any other drug?**

11. **During the past 90 days, on how many days have you gone without using any alcohol, cannabis, or other drugs?**
Youth Development & Growth Questionnaire

We would like to learn a little more about your family. Here are a few questions about them.

1) Which of the following best describes your childhood/upbringing (select 1 that best applies)?
   - I lived with my (biological or adoptive) mother and father.
   - I lived with my father and stepmother (or older female adult).
   - I lived with my mother and stepfather (or older male adult).
   - I lived with my father alone.
   - I lived with my mother alone.
   - I alternated living with my mother and father who were divorced or separated.
   - I lived with other adult guardians/caregivers.
   - I lived on my own.

2) Please describe the job of your father, stepfather, or male guardian/caregiver when you were a child/adolescent; He was mostly...
   - Working full time
   - Working part time
   - Unemployed
   - Retired
   - Disabled
   - Prefer not to Answer

3) What is the highest level of education he completed?
   - Elementary School or Less
   - Middle School Graduate or Less
   - Some High School
   - High School Graduate
   - Some College/University
   - College Graduate or More
   - Prefer not to Answer

4) Please describe the job of your mother, stepmother, or female guardian/caregiver when you were a child/adolescent; She was mostly...
   - Working full time
   - Working part time
   - Unemployed
   - Retired
   - Disabled
   - Prefer not to Answer

5) What was the highest level of education she completed?
   - Elementary School or Less
   - Middle School Graduate or Less
   - Some High School
   - High School Graduate
   - Some College/University
   - College Graduate or More
   - Prefer not to Answer

6) Did your parents/primary caregivers speak mostly English in the home?
   - No
   - Yes
   - Prefer not to Answer

7) How comfortable were your parents/primary caregivers speaking English outside the home?
   - Very Uncomfortable
   - Uncomfortable
   - Neutral
   - Comfortable
   - Very Comfortable
   - Prefer not to Answer
8) Who helps/helped you MOST with your homework when you need/needed help?

- My Mother and/or Father
- My Brothers or Sisters
- My Friends
- My Teachers
- My Counselors
- Other
- No One
- Prefer not to Answer

Imagine that this ladder pictures how American society is set up. At the top of the ladder (100) are the people who are the best off - they have the most money, the highest amount of schooling, and the jobs that bring the most respect. At the bottom (0) are people who are the worst off - they have the least money, little or no education, no job, or jobs that no one wants or respects. Now think about your family. Please tell us where you think your family would be on this ladder on a scale of 1-100. Again, 0 represents the absolute worst off, and 100 represents the absolute best off.

9) Mark the rung that best represents where your family would be on this ladder (Scale 1-100).

Please think of the neighborhoods in which you grew up/lived and schools you attended and indicate how much you agree or disagree with the following statements:

10) The people in my neighborhoods and/or schools spoke mostly Spanish.

11) The people in my neighborhoods and/or schools spoke mostly English.

12) The people in my neighborhoods and/or schools were largely Hispanic/Latino.

13) The people in my neighborhoods and/or schools were of the same socioeconomic status as my family.

14) The people in my neighborhoods and/or schools shared the same religious beliefs as my family.
<table>
<thead>
<tr>
<th>Question</th>
<th>Never</th>
<th>Once in a While</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
<th>Prefer not to Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>15. Family members like/liked to spend time with each other.</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
</tr>
<tr>
<td>16. Family members feel/felt very close to each other.</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
</tr>
<tr>
<td>17. Your parents/primary caregivers encouraged/encouraged you to hold on to Spanish speaking, Latin American heritage, practices, &amp; beliefs.</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
</tr>
<tr>
<td>18. How often did/do you prefer the &quot;American&quot; way of doing things?</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
</tr>
<tr>
<td>19. How often did/do your parents (or adults with whom you lived) prefer American ways of doing things?</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
</tr>
<tr>
<td>20. And how often did/do you get into trouble because your way of doing things was/is different from that of your parents/primary caregivers?</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
</tr>
<tr>
<td>21. When you and your parents/primary caregivers had value conflicts, what contributed the most?</td>
<td>〇 Differences in age/generation</td>
<td>〇 Differences in cultural preference</td>
<td>〇 Prefer not to Answer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. When you experienced conflict or challenges in school, how often were your parents/primary caregivers able to help you?</td>
<td>〇 Never</td>
<td>〇 Rarely</td>
<td>〇 Sometimes</td>
<td>〇 Often</td>
<td>〇 Always</td>
<td>〇 Prefer not to Answer</td>
</tr>
<tr>
<td>Question</td>
<td>Hostile</td>
<td>Somewhat Hostile</td>
<td>Neutral</td>
<td>Somewhat Welcoming</td>
<td>Welcoming</td>
<td>Prefer not to Answer</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>---------</td>
<td>------------------</td>
<td>---------</td>
<td>--------------------</td>
<td>----------</td>
<td>----------------------</td>
</tr>
<tr>
<td>23) Local Police &amp; Police Authorities?</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>24) Local Schools &amp; School Employees?</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>25) Local Media?</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>26) Local Hospitals/Health Care Providers?</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>27) Local Religious Organizations (churches, synagogues, mosques, etc.)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>28) People already living in your community (neighbors, business owners, etc.)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>29) How strong were/are your family's social networks?</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>30) How would you describe your family's community composition overall (from your upbringing)?</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
**SASH-EA Items**

*Confidential*

**SASH-EA**

For the following items, please think about your childhood & adolescent years spent with parents/primary caregivers.

<table>
<thead>
<tr>
<th></th>
<th>Only Spanish</th>
<th>Spanish more than English</th>
<th>Both Equally</th>
<th>English more than Spanish</th>
<th>Only English</th>
<th>Prefer not to Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) What languages did you read and speak?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>2) In what languages did your parents/primary caregivers speak to you?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>3) What languages do/did you usually speak at home?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4) In what languages did you usually think?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>5) What languages did you usually speak with your friends?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>6) In what languages are the T.V. programs you usually watched?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>7) In what languages were the radio programs you usually listened to?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>8) In what languages were the movies, T.V., and radio programs you preferred to watch or listen to?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>9) In what languages do/did your parents speak with their parents?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>10) Your closest friends were...</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>11) You preferred going to parties at which the people were...</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>12) The persons whom you visited or who visited you were...</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

13) Please Select "Both Equally"  
- ☐ Only Spanish  
- ☐ Spanish more than English  
- ☐ Both Equally  
- ☐ English more than Spanish  
- ☐ Only English  
- ☐ Prefer not to Answer

---


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04-06-2020 5:05pm  
projectredcap.org  
REDCap ®
### Demographic Items

#### Confidential

#### Demographic Items

You are almost done! For these final items, please tell us some basic information about yourself.

**How old are you today (in years; please enter 99 if you prefer not to answer)?**

<table>
<thead>
<tr>
<th>How old are you today (in years; please enter 99 if you prefer not to answer)</th>
</tr>
</thead>
<tbody>
<tr>
<td>99</td>
</tr>
</tbody>
</table>

**What is your gender?**

- Female
- Male
- Non-Binary
- Other
- Prefer not to Answer

If other, please indicate your gender here.

**What is your sexual orientation?**

- Heterosexual
- Gay/Lesbian
- Bisexual
- Other
- Prefer not to Answer

If other, please indicate your sexual orientation here.

**How would you best describe your Latino/a/x heritage?**

- Mexican
- Guatemalan
- Salvadoran
- Honduran
- Puerto Rican
- Cuban
- Other Central American
- Other Caribbean
- South American
- Prefer not to Answer

**What generation of U.S. resident are you?**

- 1st Generation
- 2nd Generation
- Prefer not to Answer

If 1st generation U.S. resident, how old were you (in years) when you arrived in the United States?

**How would you describe your current school enrollment?**

- Not Currently Enrolled
- Enrolled at 4-year College/University
- Enrolled at 2-Year Community/Junior College
- Enrolled at High School
- Other
- Prefer not to Answer

**How would you describe your current relationship status?**

- Single
- Married
- Divorced
- In a Serious Relationship
- Prefer not to Answer
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
</table>
| How would you describe your current employment?                         | - Employed full time (35+ hours per week)  
- Employed part time (less than 35 hours per week)  
- Unemployed  
- Prefer not to answer |
| How much money did you make last year (please enter 99 if you prefer not to answer)? |                                                                                           |
| What % of your living expenses do your parents/primary caregivers pay?   |                                                                                           |
| How old were you (in years) when you first used drugs or alcohol?       |                                                                                           |
| Are you or were you ever a DREAMer or recipient of DACA?                | - No  
- Yes  
- Prefer not to Answer |
| Are you a citizen or legal permanent resident of the United States?     | - Yes  
- No  
- Prefer not to Answer |
| Does the current sociopolitical climate in the U.S. towards immigrants cause you to feel anxious? | - Not at All  
- To a Slight Extent  
- To a Moderate Extent  
- To a Great Extent  
- Prefer not to Answer |
| Have you or your family ever felt afraid of being deported from the United States? | - Not at All  
- To a Slight Extent  
- To a Moderate Extent  
- To a Great Extent  
- Prefer not to Answer |
| Have you ever experienced discrimination/been discriminated against because of your ethnicity? | - No  
- Yes  
- Prefer not to Answer |
| At what age do you remember first experiencing this discrimination?     |                                                                                           |
| Do you have any children?                                               | - No  
- Yes  
- Prefer not to Answer |
| If yes, how old is your oldest child (in years)?                        |                                                                                           |
| Have you ever been arrested or incarcerated?                            | - No  
- Yes  
- Prefer not to Answer |
| Using your best guess, what was the most money your parents/primary caregivers made in a year when you were growing up? |                                                                                           |
Finally, on a scale of 1-10, with 1 being guessing completely and 10 being absolutely certain, how much are you guessing at the most $ you parents/primary caregivers earned in a year?
Congratulations & Payment

Confidential

Congratulations!

Thank you!

Congratulations! Thank you for completing our survey. The honest and thoughtful data you provide will be invaluable in this and in future stages of our research. Please don’t hesitate to reach out if you have any questions. Please enter GJK(record_id) in order to receive payment for completing this survey. Make sure you enter this code accurately to facilitate rapid and accurate payment.
APPENDIX D: MPLUS SYNTAX

Title: Dissertation Structural Equation Model, Continuous Outcomes (AUDIT, CUDIT);
Data: File is C:\Users\kmassenet\Desktop\DissertationSEM_3112020.dat;
Variable:

NAMES ARE

AccProfi ears_6 ears_7 ears_8 ears_10 ears_11 ears_12 ears_13 ears_14 ears_15 ears_16
ears_17 ears_dev audit_1 audit_2 audit_3 audit_4 audit_5 audit_6 audit_7 audit_8 audit_9
audit_10 aud_sum aud_mean spsalc1 spsalc2 spsalc3 spsalc4 spsalc5 spsalc6 spsalc7
spsalc8 spsalc9 spsalc10 spsalc11 spsalc12 spsAmean PYspsA1 PYspsA2 PYspsA3 PYspsA4
PYspsA5 PYspsA6 PYspsA7 PYspsA8 PYspsA9 PYspsA10 PYspsA11 PYspsA12 PYspsAsu
PMspsA1 PMspsA2 PMspsA3 PMspsA4 PMspsA5 PMspsA6 PMspsA7 PMspsA8
PMspsA9 PMspsA10 PMspsA11 PMspsA12 PMspsAsu dmqcope1 dmqcope2 dmqcope3
copemean cudit_s cudit_1 cudit_2 cudit_3 cudit_4 cudit_5 cudit_6 cudit_7 cudit_8
cuditsum cuditmean spscan1 spscan2 spscan3 spscan4 spscan5 spscan6 spscan7 spscan8
spscan9 spscan10 spsCmean PYspsC1 PYspsC2 PYspsC3 PYspsC4 PYspsC5 PYspsC6
PYspsC7 PYspsC8 PYspsC9 PYspsC10 PYspsCsu PMspsC1 PMspsC2 PMspsC3 PMspsC4
PMspsC5 PMspsC6 PMspsC7 PMspsC8 PMspsC9 PMspsC10 PMspsCsu sfs_1 sfs_2 sfs_3
sfs_4 sfs_5 sfs_6 sfs_7 sfs_8 sfs_9 sfs_10 sfs_11 SFS_Sum age gender sexorien latino
generatn ageimmig school relstats employmn incmePER parsuprt su_onset daca citizen
imm_m anx dep_fear discrimn agediscr children childdage arrest incmePAR PARguess
Inc1000 IncP1000;

USEVAR =
ears_6 ears_7 ears_8 ears_10 ears_11 ears_12 ears_13 ears_14 ears_15 ears_16 ears_17
dmqcope1 dmqcope2 dmqcope3 audit_1 audit_2 audit_3 audit_4 audit_5 audit_6 audit_7
audit_8 audit_9 audit_10 audit_1 audit_2 audit_3 audit_4 audit_5 audit_6 audit_7
GROUPING IS AccProfi(1=Dissonant, 2=Consonant, 3=Selective);
MISSING ARE ALL (-99);
Analysis:
ESTIMATOR = MLR;
Model:
STRAIN BY
ears_6* ears_7 ears_8
ears_10-ears_17;
STRAIN@1;
DMQCOPE BY
dmqcope1* dmqcope2 dmqcope3;
DMQCOPE@1;
AUDIT BY
audit_1*
audit_2-audit_10;
AUDIT@1;
CUDIT BY
cudit_1*
cudit_2-cudit_7;
CUDIT@1;
   AUDIT ON STRAIN;
   AUDIT ON DMQCOPE;
   CUDIT ON STRAIN;
   CUDIT ON DMQCOPE;
   AUDIT WITH CUDIT;
MODEL DISSONANT:
STRAIN BY
ears_6* ears_7 ears_8
ears_10-ears_17;
   EARS_16 WITH EARS_15;
   EARS_12 WITH EARS_11;
   EARS_12 WITH EARS_10;
   EARS_12 WITH EARS_7;
   EARS_11 WITH EARS_10;
   EARS_7  WITH EARS_6;
   EARS_8  WITH EARS_6;
   EARS_10 WITH EARS_7;
   EARS_10 WITH EARS_6;
   EARS_11 WITH EARS_7;
   EARS_14 WITH EARS_6;
   EARS_15 WITH EARS_7;
EARS_15  WITH EARS_14;
EARS_16  WITH EARS_12;
EARS_16  WITH EARS_14;
EARS_17  WITH EARS_8;
EARS_17  WITH EARS_11;

DMQCOPE BY
dmqcope1* dmqcope2 dmqcope3;

AUDIT BY
audit_1* audit_2-audit_10;
    AUDIT_4  WITH AUDIT_1;
    AUDIT_4  WITH AUDIT_2;
    AUDIT_3  WITH AUDIT_1;
    AUDIT_3  WITH AUDIT_2;
    AUDIT_5  WITH AUDIT_3;
    AUDIT_5  WITH AUDIT_4;
    AUDIT_6  WITH AUDIT_4;
    AUDIT_6  WITH AUDIT_5;
    AUDIT_7  WITH AUDIT_3;
    AUDIT_10 WITH AUDIT_7;
    AUDIT_6  WITH AUDIT_2;
    AUDIT_7  WITH AUDIT_1;
    AUDIT_7  WITH AUDIT_2;
    AUDIT_10 WITH AUDIT_1;

CUDIT BY
cudit_1* cudit_2-cudit_7;
    CUDIT_7  WITH CUDIT_1;
    CUDIT_7  WITH CUDIT_5;
    CUDIT_7  WITH CUDIT_6;

AUDIT ON STRAIN;
AUDIT ON DMQCOPE;
CUDIT ON STRAIN;
CUDIT ON DMQCOPE;
AUDIT WITH CUDIT;
MODEL CONSONANT:

STRAIN BY
ears_6* ears_7 ears_8
ears_10-ears_17;
    EARS_17 WITH EARS_15;
    EARS_16 WITH EARS_15;
    EARS_16 WITH EARS_14;
    EARS_16 WITH EARS_13;
    EARS_16 WITH EARS_12;
    EARS_16 WITH EARS_10;
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    EARS_14 WITH EARS_12;
    EARS_13 WITH EARS_12;
    EARS_12 WITH EARS_11;
    EARS_11 WITH EARS_10;
    EARS_7 WITH EARS_6;
    EARS_8 WITH EARS_6;

DMQCOPE BY
dmqcope1* dmqcope2 dmqcope3;

AUDIT BY
audit_1*
audit_2-audit_10;
    AUDIT_2 WITH AUDIT_1;
    AUDIT_3 WITH AUDIT_1;
    AUDIT_3 WITH AUDIT_2;
    AUDIT_5 WITH AUDIT_4;
AUDIT_6  WITH AUDIT_4;
AUDIT_7  WITH AUDIT_2;
AUDIT_7  WITH AUDIT_3;
AUDIT_8  WITH AUDIT_3;
AUDIT_9  WITH AUDIT_3;
AUDIT_9  WITH AUDIT_4;
AUDIT_9  WITH AUDIT_4;
AUDIT_10 WITH AUDIT_1;
AUDIT_10 WITH AUDIT_2;
AUDIT_10 WITH AUDIT_5;
AUDIT_10 WITH AUDIT_7;
AUDIT_10 WITH AUDIT_8;
AUDIT_9  WITH AUDIT_6;
AUDIT_10 WITH AUDIT_3;

CUDIT BY

cudit_1*
cudit_2-cudit_7;

CUDIT_2  WITH CUDIT_1;
CUDIT_3  WITH CUDIT_1;
CUDIT_3  WITH CUDIT_2;
CUDIT_6  WITH CUDIT_4;
CUDIT_6  WITH CUDIT_5;

AUDIT ON STRAIN;
AUDIT ON DMQCOPE;
CUDIT ON STRAIN;
CUDIT ON DMQCOPE;
AUDIT WITH CUDIT;
MODEL SELECTIVE:
STRAIN BY
ears_6* ears_7 ears_8
ears_10-ears_17;
EARS_17 WITH EARS_14;
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EARS_16 WITH EARS_15;
EARS_16 WITH EARS_10;
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EARS_14 WITH EARS_13;
EARS_14 WITH EARS_12;
EARS_13 WITH EARS_10;
EARS_12 WITH EARS_11;
EARS_11 WITH EARS_10;
EARS_10 WITH EARS_6;
EARS_8 WITH EARS_7;
EARS_8 WITH EARS_6;
EARS_7 WITH EARS_6;

DMQCOPE BY
dmqcope1* dmqcope2 dmqcope3;
    DMQCOPE2 WITH DMQCOPE1;
    DMQCOPE3 WITH DMQCOPE1;

AUDIT BY
audit_1*
    audit_2-audit_10;
    AUDIT_3 WITH AUDIT_1;
    AUDIT_3 WITH AUDIT_2;
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    AUDIT_7 WITH AUDIT_3;
    AUDIT_7 WITH AUDIT_5;
    AUDIT_8 WITH AUDIT_6;
    AUDIT_8 WITH AUDIT_7;
AUDIT_9 WITH AUDIT_1;
AUDIT_9 WITH AUDIT_2;
AUDIT_9 WITH AUDIT_5;
AUDIT_10 WITH AUDIT_1;
AUDIT_10 WITH AUDIT_4;
AUDIT_10 WITH AUDIT_5;
AUDIT_10 WITH AUDIT_7;
AUDIT_10 WITH AUDIT_9;

CUDIT BY
  cudit_1*
cudit_2-cudit_7;
    CUDIT_2 WITH CUDIT_1;
    CUDIT_3 WITH CUDIT_2;
    CUDIT_3 WITH AUDIT_6;
AUDIT ON STRAIN;
AUDIT ON DMQCOPE;
CUDIT ON STRAIN;
CUDIT ON DMQCOPE;
AUDIT WITH CUDIT;

Output:
STDXY;
Title: Dissertation Structural Equation Model, Continuous Outcomes (SPS);
Data: File is C:\Users\kmbennet\Desktop\DissertationSEM_3112020.dat;
Variable:
NAMES ARE
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ears_17 ears_dev audit_1 audit_2 audit_3 audit_4 audit_5 audit_6 audit_7 audit_8 audit_9
audit_10 aud_sum aud_mean spsalc1 spsalc2 spsalc3 spsalc4 spsalc5 spsalc6 spsalc7
spsalc8 spsalc9 spsalc10 spsalc11 spsalc12 spsAmean PYspsA1 PYspsA2 PYspsA3 PYspsA4
PYspsA5 PYspsA6 PYspsA7 PYspsA8 PYspsA9 PYspsA10 PYspsA11 PYspsA12 PYspsA1u
PMspsA1 PMspsA2 PMspsA3 PMspsA4 PMspsA5 PMspsA6 PMspsA7 PMspsA8
PMspsA9 PMspsA10 PMspsA11 PMspsA12 PMspsA1u dmqcope1 dmqcope2 dmqcope3
copemean cudit_s cudit_1 cudit_2 cudit_3 cudit_4 cudit_5 cudit_6 cudit_7 cudit_8
cuditsum cuditmea spscan1 spscan2 spscan3 spscan4 spscan5 spscan6 spscan7 spscan8
spscan9 spscan10 spscmean PYspsC1 PYspsC2 PYspsC3 PYspsC4 PYspsC5 PYspsC6
PYspsC7 PYspsC8 PYspsC9 PYspsC10 PYspsCsu PMspsC1 PMspsC2 PMspsC3 PMspsC4
PMspsC5 PMspsC6 PMspsC7 PMspsC8 PMspsC9 PMspsC10 PMspsCsu sfs_1 sfs_2 sfs_3
sfs_4 sfs_5 sfs_6 sfs_7 sfs_8 sfs_9 sfs_10 sfs_11 SFS_Sum age gender sexorien latino
generatn ageimmig school relstats employm incmepar parsuport su_onset daca citizen
immi_anx dep_fear discrimn agediscr children childage arrest incmepar PARguess
Inc1000 IncP1000;
USEVAR =
ears_6 ears_7 ears_8 ears_10 ears_11 ears_12 ears_13 ears_14 ears_15 ears_16 ears_17
dmqcope1 dmqcope2 dmqcope3 spsalc1 spsalc2 spsalc3 spsalc4 spsalc5 spsalc6 spsalc7
spsalc8 spsalc9 spsalc10 spsalc11 spsalc12 spscan1 spscan2 spscan3 spscan4 spscan5
spscan6 spscan7 spscan8 spscan9 spscan10;
GROUPING IS AccProfi(1=Dissonant, 2=Consonant, 3=Selective);
MISSING IS AccProfi(-99);
Analysis:
ESTIMATOR = MLR;
Model:
STRAIN BY
ears_6* ears_7 ears_8
ears_10-ears_17;
STRAIN@1;
DMQCOPE BY
dmqcope1* dmqcope2 dmqcope3;
DMQCOPE@1;

SPSALC BY
spsalc1* spsalc2 spsalc3 spsalc4
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spsalc9 spsalc10 spsalc11 spsalc12;
SPSALC@1;

SPSCAN BY
spscan1* spsca2 spscan3 spscan4
spscan5 spscan6 spscan7 spscan8
spscan9 spscan10;
SPSCAN@1;

SPSALC ON STRAIN;
SPSALC ON DMQCOPE;
SPSCAN ON STRAIN;
SPSCAN ON DMQCOPE;
SPSALC WITH SPSCAN;
MODEL DISSONANT:

STRAIN BY
ears_6* ears_7 ears_8
ears_10-ears_17;

EARS_7 WITH EARS_6;
EARS_10 WITH EARS_6;
EARS_10 WITH EARS_7;
EARS_11 WITH EARS_7;
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EARS_12 WITH EARS_10;
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SPSALC BY
spsalc1*
  spsalc2-spsalc12;
  SPSALC2 WITH SPSALC1;
  SPSALC3 WITH SPSALC1;
  SPSALC4 WITH SPSALC1;
  SPSALC4 WITH SPSALC3;
  SPSALC5 WITH SPSALC4;
  SPSALC6 WITH SPSALC5;
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  SPSALC8 WITH SPSALC1;
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  SPSALC12 WITH SPSALC4;
  SPSALC12 WITH SPSALC6;
SPSCAN BY
spscan1*
spscan2-spscan10;
SPSCAN3  WITH SPSCAN2;
SPSCAN4  WITH SPSCAN3;
SPSCAN6  WITH SPSCAN2;
SPSCAN6  WITH SPSCAN4;
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SPSCAN10 WITH SPSCAN2;
SPSCAN10 WITH SPSCAN5;
SPSCAN10 WITH SPSCAN6;
SPSALC ON STRAIN;
SPSALC ON DMQCOPE;
SPSCAN ON STRAIN;
SPSCAN ON DMQCOPE;
SPSALC WITH SPSCAN;
MODEL CONSONANT:
STRAIN BY
ears_6*ears_7 ears_8
ears_10-ears_17;
EARS_7  WITH EARS_6;
EARS_8  WITH EARS_6;
EARS_11 WITH EARS_10;
EARS_12 WITH EARS_11;
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EARS_17 WITH EARS_12;
EARS_17 WITH EARS_14;
EARS_17 WITH EARS_16;
DMQCOPE BY
dmqcope1* dmqcope2 dmqcope3;
SPSALC BY
spsalc1*

spsalc2-spsalc12;
SPSALC2 WITH SPSALC1;
SPSALC3 WITH SPSALC1;
SPSALC3 WITH SPSALC2;
SPSALC4 WITH SPSALC1;
SPSALC5 WITH SPSALC1;
SPSALC5 WITH SPSALC3;
SPSALC6 WITH SPSALC1;
SPSALC6 WITH SPSALC2;
SPSALC6 WITH SPSALC3;
SPSALC7 WITH SPSALC3;
SPSALC8 WITH SPSALC1;
SPSALC8 WITH SPSALC7;
SPSALC9 WITH SPSALC2;
SPSALC9 WITH SPSALC4;
SPSALC9 WITH SPSALC6;
SPSALC10 WITH SPSALC1;
SPSALC10 WITH SPSALC6;
SPSALC11 WITH SPSALC2;
SPSALC11 WITH SPSALC3;
SPSALC11 WITH SPSALC6;
SPSALC12 WITH SPSALC2;
SPSALC12 WITH SPSALC6;
SPSCAN BY
  spscan1*
  spscan2-spscan10;
  SPSCAN3  WITH SPSCAN1;
  SPSCAN3  WITH SPSCAN2;
  SPSCAN4  WITH SPSCAN1;
  SPSCAN4  WITH SPSCAN3;
  SPSCAN6  WITH SPSCAN3;
  SPSCAN6  WITH SPSCAN4;
  SPSCAN6  WITH SPSCAN5;
  SPSCAN7  WITH SPSCAN5;
  SPSCAN8  WITH SPSCAN3;
  SPSCAN8  WITH SPSCAN6;
  SPSCAN9  WITH SPSCAN6;
  SPSCAN9  WITH SPSCAN8;
  SPSCAN10 WITH SPSCAN2;
  SPSCAN10 WITH SPSCAN4;
  SPSCAN10 WITH SPSCAN5;
SPSALC ON STRAIN;
SPSALC ON DMQCOPE;
SPSCAN ON STRAIN;
SPSCAN ON DMQCOPE;
SPSALC WITH SPSCAN;
MODEL SELECTIVE:
STRAIN BY
ears_6* ears_7 ears_8
ears_10-ears_17;
EARS_7  WITH EARS_6;
EARS_8  WITH EARS_7;
EARS_10 WITH EARS_6;
EARS_11 WITH EARS_10;
EARS_12 WITH EARS_10;
EARS_12 WITH EARS_11;
EARS_13 WITH EARS_10;
EARS_14 WITH EARS_12;
EARS_14 WITH EARS_13;
EARS_15 WITH EARS_11;
EARS_16 WITH EARS_10;
EARS_16 WITH EARS_15;
EARS_17 WITH EARS_10;
EARS_17 WITH EARS_11;
EARS_17 WITH EARS_14;
DMQCOPE BY
dmqcope1* dmqcope2 dmqcope3;
DMQCOPE2 WITH DMQCOPE1;
DMQCOPE3 WITH DMQCOPE1;
SPSALC BY
spsalc1*
spsalc2-spsalc12;
SPSALC2   WITH SPSALC1;
SPSALC4   WITH SPSALC2;
SPSALC4   WITH SPSALC3;
SPSALC5   WITH SPSALC3;
SPSALC6 WITH SPSALC4;
SPSALC7 WITH SPSALC5;
SPSALC8 WITH SPSALC3;
SPSALC8 WITH SPSALC4;
SPSALC9 WITH SPSALC1;
SPSALC9 WITH SPSALC4;
SPSALC10 WITH SPSALC4;
SPSALC10 WITH SPSALC7;
SPSALC11 WITH SPSALC3;
SPSALC11 WITH SPSALC8;
SPSALC11 WITH SPSALC10;
SPSALC12 WITH SPSALC6;
SPSALC12 WITH SPSALC7;
SPSALC12 WITH SPSALC11;
SPSCAN BY
  spscan1*
  spscan2-spscan10;
  SPSCAN4 WITH SPSCAN1;
  SPSCAN4 WITH SPSCAN3;
  SPSCAN5 WITH SPSCAN1;
  SPSCAN5 WITH SPSCAN2;
  SPSCAN6 WITH SPSCAN2;
  SPSCAN6 WITH SPSCAN3;
  SPSCAN6 WITH SPSCAN4;
  SPSCAN7 WITH SPSCAN2;
  SPSCAN7 WITH SPSCAN5;
  SPSCAN7 WITH SPSCAN6;
  SPSCAN8 WITH SPSCAN2;
  SPSCAN8 WITH SPSCAN3;
  SPSCAN8 WITH SPSCAN4;
SPSCAN9  WITH SPSCAN2;
SPSCAN9  WITH SPSCAN5;
SPSCAN9  WITH SPSCAN8;
SPSCAN10 WITH SPSCAN2;
SPSCAN10 WITH SPSCAN5;
SPSCAN10 WITH SPSCAN9;
SPSALC ON STRAIN;
SPSALC ON DMQCOPE;
SPSCAN ON STRAIN;
SPSCAN ON DMQCOPE;
SPSALC WITH SPSCAN;
Output:
STDYX;
APPENDIX E: FULL STRUCTURAL EQUATION MODELS

AUDIT & CUDIT StdYX Values—Dissonant

RMSEA=.065, CFI=.92; TLI=.91; *=p<.05, **=p<.01, ***=p<.001
AUDIT & CUDIT StdYX Values – Consonant

RMSEA=.065, CFI=.92; TLI=.91; *=p<.05, **=p<.01, ***=p<.001
AUDIT & CUDIT StdYX Values – Selective

RMSEA=.065, CFI=.92; TLI=.91; *=p<.05, **=p<.01, ***=p<.001
SPS Alcohol & SPS Cannabis StdYX Values – Dissonant

RMSEA=.069, CFI=.91; TLI=.90; *=p<.05, **=p<.01, ***=p<.001
SPS Alcohol & SPS Cannabis StdYX Values – Consonant

RMSEA=.069, CFI=.91; TLI=.90; *=p<.05, **=p<.01, ***=p<.001
SPS Alcohol & SPS Cannabis StdYX Values - Selective

RMSEA=.069, CFI=.91; TLI=.90; *=p<.05, **=p<.01, ***=p<.001