Cultural and Psychosocial Moderators of the Association Between Adverse Childhood Experiences and Alcohol and Marijuana Use Among Latinx College Students on the U.S./Mexico Border

Claudia J. Woloshchuk
University of Texas at El Paso

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CULTURAL AND PSYCHOSOCIAL MODERATORS OF THE ASSOCIATION BETWEEN ADVERSE CHILDHOOD EXPERIENCES AND ALCOHOL AND MARIJUANA USE AMONG LATINX COLLEGE STUDENTS ON THE U.S./MEXICO BORDER

CLAUDIA J. WOLOSHCHUK
Master’s Program in Clinical Psychology

APPROVED:

Theodore V. Cooper, Ph.D., Chair
Jennifer Eno Louden, Ph.D.
Gabriel A. Frietze, Ph.D.
Lawrence D. Cohn, Ph.D.

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Dean of the Graduate School
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Claudia J. Woloshchuk

2021
Dedication

Dedicated to the ones who never leave my heart, Wendy Elizabeth Woloshchuk, Michael Deane Woloshchuk, Mitchel Deane Woloshchuk, Claudia MacDonald, Robert MacDonald and Bryan Cruz.

Thank you for your never-ending support, love, respect and admiration.
CULTURAL AND PSYCHOSOCIAL MODERATORS OF THE ASSOCIATION BETWEEN
ADVERSE CHILDHOOD EXPERIENCES AND ALCOHOL AND MARIJUANA USE
AMONG LATINX COLLEGE STUDENTS ON THE U.S./MEXICO BORDER

by

CLAUDIA J. WOLOSHCHUK, B.A.

THESIS

Presented to the Faculty of the Graduate School of
The University of Texas at El Paso
in Partial Fulfillment
of the Requirements
for the Degree of

MASTER OF ARTS

Department of Psychology
THE UNIVERSITY OF TEXAS AT EL PASO
May 2021
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Abstract

Adverse childhood experiences (ACEs) have been historically associated with negative life outcomes among the general population. There has been no research, to the author’s knowledge, on psychosocial and/or cultural moderators of the associations between ACEs and substance use among Latinx college students living on the U.S./Mexico border. This study assessed how specific constructs within the socioecological framework moderate the association between ACEs and alcohol and marijuana use. Participants (Females: \( N = 283, M_{\text{age}} = 20.86, SD = 3.71 \), Males: \( N = 111, M_{\text{age}} = 20.65, SD = 3.13 \)) completed an online survey which included: demographics, the Center for Youth Wellness Adverse Childhood Experience Questionnaire (CYW ACE-Q) Teen Self-Report, Drug Use Frequency (DUF), Experiences in Close Relationships Scale (ECR), General Self-Efficacy Scale (GSE), Attitudinal Familism Scale (AFS), The Machismo Measure or The Marianismo Beliefs Scale (MBS), and The Bicultural Self-Efficacy Scale (BSE). Hierarchal linear regressions were conducted to test for main and interactive effects and to determine if the individual moderators (i.e., attachment style, self-efficacy, familism, traditional gender norms, bicultural self-efficacy) affect the relationship between ACEs and alcohol and marijuana use. Results indicated that among females, attachment style, MBS, and BSE moderate the relationship between ACEs and alcohol and marijuana use. No moderation analyses were statistically significant among males. Future directions include prospective studies, inclusive of both genders, and the assessment of other individual level constructs such as symptoms of mental illness and coping strategies. Extending to other sociocultural levels of influence by also assessing non-familial relationship patterns and community norms and perceived stigma are also warranted. Clinical implications include, for both substance use and trauma treatment among Latinx college students, the assessment of ACEs.
and attachment style to promote greater insight into the client’s inner struggles and emotional processing in relation to marianismo beliefs and bicultural self-efficacy.
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Chapter 1: Introduction

BACKGROUND

Experiences during childhood that induce significant stress and/or are potentially traumatic are associated with numerous negative life outcomes such as chronic illness, cancer, mortality, mental illness, suicide, drug overdose, academic challenges, and socioeconomic challenges (Brown et al., 2010; Campbell et al., 2016; Hughes et al., 2017; Jones et al., 2019; Wade et al., 2016). These experiences are referred to as adverse childhood experiences or ACEs and were originally studied by Felitti and colleagues (1998). Examples of ACEs include physical, emotional, and sexual abuse, neglect, household dysfunction and community stressors. According to the CDC (2018), 60.9% of the U.S. adult population have experienced at least one ACE, while 15.6% had experienced four or more ACEs (Hughes et al., 2017; Merrick et al., 2019). That is, 1 in 6 adults have experienced four or more types of toxic stress, defined as chronic activation of the human body’s stress response system, that has been shown to be the underlying mechanism by which ACEs are associated with negative health outcomes (Merrick et al., 2019; Jones et al., 2019; Ridout et al., 2018). A graded, dose response relationship has been observed with the number of ACEs and increased risk for a range of negative health outcomes ($AOR$ range from 1.0-12.2, increasing as number of ACEs increases) (Felitti et al., 1998; Hughes et al., 2017; Merrick et al., 2019; Ridout et al., 2018). ACEs increase risk of negative health outcomes, but they do not fix an individual’s health trajectory, thus there may be opportunity to intervene among individuals who are at the greatest risk (Ridout et al., 2018).

Limited research exists on the prevalence of ACEs among minority populations such as Latinx and immigrant populations in the U.S., as the original ACE studies were comprised predominantly of white, mid-income, well-educated samples in southern California (Anda et al.,
1999; Felitte et al., 1998). This is particularly concerning due to the cyclical nature of ACEs through generational trauma and socioeconomic status (LaBrenz et al., 2019; Lev-Wiesel, 2007; Merrick et al., 2019; Narayan et al., 2021). Parents who have multiple ACEs may have PTSD symptoms which, when untreated, have been shown to increase risk of intergenerational transmission of ACEs (Narayan et al., 2021). Specifically, it has been shown that among immigrant generational Latinx populations, the largest racial minority group in the U.S. (U.S. Census Bureau, 2017), ACEs (particularly household dysfunction-oriented ACEs), increase across generations and may be associated with low socioeconomic status, acculturative stress, deteriorating familial support, discrimination, and various sociopolitical factors in addition to the trauma previous generations experienced and carried forward in their interpersonal relationships (Cerdeña, et al., 2020; Grest et al., 2021). Additionally, minority groups such as women, Blacks, American Indian/Alaska Native, and non-white Hispanics, are more likely to experience four or more ACEs compared to men and whites (Liu et al., 2018; Merrick et al., 2019). Percentages of a national sample (N = 144,017) who experienced four or more ACES were as follows: 13.9% men, 17.1% women, 8.6% Asian, 15% White, 15.8% Hispanic, 17.7% Black, and 28.3% American Indian/Alaska Native (Merrick et al., 2019). In another study, Llabre and colleagues (2017) reported a greater prevalence of ACEs among a Latinx sample (Merrick et al., 2019), with 28.7% experiencing four or more ACEs. These are alarming rates relative to the reported 15.6% of all U.S. adults experiencing four or more ACEs by the CDC (2018). However, Llabre and colleagues (2017) also noted that this higher prevalence did not correspond to stronger associations with disease, suggesting possible unique protective factors among this population that have yet to be addressed. Additionally, multiple studies conducted within Latinx samples observed ACE scores similar to the general U.S. population, thus showing inconsistencies
throughout this growing literature (Loria & Caughy, 2017; Newcomb et al., 2003; Ramos-Olazagasti et al., 2016; Zhen-Duan, 2018)

Increased substance use is one of the most consistent negative health outcomes associated with ACEs. One of the primary outcomes of the original ACE studies demonstrated that risk of developing alcoholism, along with other substance use disorders, was positively correlated with ACEs ($OR$ ranges from 1.7-3.8) (Anda et al., 1999; Anda et al., 2002; Dube et al., 2005; Shin et al., 2018). This has been replicated in various studies with data suggesting that individuals who have experienced greater than four ACEs are ten times more likely to develop a substance use disorder and are more likely to initiate substance use at an earlier age ($OR = 6.5, p < .05$) (Dube et al., 2003). This pattern has specifically been observed with alcohol use and marijuana use among young adults and college students within recent years (Chatterjee et al., 2018; Forster et al., 2019; Forster et al., 2020).

The association between increased ACEs and alcohol and marijuana use has also been observed among Latinx populations ($OR = 1.5-8.1$) (Ai & Lee, 2018; Allem et al., 2015; Barrera et al., 2018; Forster et al., 2019; Forster et al., 2020). However, due to Latinx populations exhibiting higher risk of ACEs, as discussed previously, this population is also at greater risk of developing alcoholism and other substance use disorders such as marijuana misuse and abuse (Gjelsvik et al., 2013). Lee and Chen (2017) demonstrated that race/ethnicity moderates the relationship between ACEs and heavy drinking with Hispanics being eleven times more likely to report heavy drinking compared to non-Hispanic whites ($OR = 11.2, p < .05$).

In addition to ethnicity, the stage of life development an individual is in may play a role as well. In a recent study, Forster and colleagues (2020) found that among a community sample of Hispanic young adults, individuals with greater than four ACEs and who identified as being in
a transition period of emerging adulthood had the highest probability of past month alcohol and marijuana use. College students identify as being in a significant transition period of life, thus examining ACEs in college students may yield findings related to the protective and risk factors associated with past month alcohol and marijuana use. Moreover, while there are undoubtedly studies addressing the association between ACEs and alcohol and marijuana consumption among Latinx populations, less is known about what affects these relationships, which is key in developing successful interventions. Thus, studies are warranted among this population.

THEORETICAL FRAMEWORK

Assessing potential protective and risk factors for alcohol and marijuana use among Latinx college students who have experienced ACEs is crucial in understanding how to potentially reduce or prevent alcohol and marijuana consumption from a socioecological framework (see Figure 1) as both human development and health are influenced by multiple factors. This specific framework was adopted by the National Institute of Minority Health and Health Disparities in 2018 for consistency of metrics and theoretical framing. The model associates five domains of influence (biological, behavioral, physical/built environment, sociocultural environment and health care system) across four levels of influence (individual, interpersonal, community and societal). In the present study, three domains of influence, physical/built environment, behavioral and sociocultural environment, across one level, individual, were examined to focus on alcohol and marijuana consumption among Latinx college students on the U.S./Mexico border. This framework acknowledges the importance of a life course perspective, and these three domains of influence represent core structures in life that have the power to shape one’s wellbeing and may be particularly influenced by ACEs among minority populations (Alvidrez et al., 2019). Thus, the physical/built environment constructs
include the individual’s home environment that may be shaped by ACEs. Constructs of the behavioral domain include alcohol and marijuana consumption variables, adult attachment style, and self-efficacy. Constructs of the sociocultural environment domain include age, sex, cultural identity, community ACEs, familism, adhesion to traditional gender norms and bicultural self-efficacy. The knowledge of the singular, much less integrated impact these constructs have on alcohol and marijuana use among Latinx college students in a border region is limited.

**Current Study**

Globally, the association between ACEs and negative health outcomes is considered a public health concern, thus driving research on prevention efforts (CDC, 2018). This has led to increased attention on protective factors such as strong social support systems and resiliency, with little attention to risk factors, especially among Latinx populations (Brinker & Cheruvu, 2017; Logan-Greene et al., 2014; Zhen-Duan, 2018). Both psychosocial and cultural factors beyond the broad categorization of social support and resiliency may potentially provide key protective and risk features to be assessed and intervened on in order to prevent negative health outcomes. The following potential psychosocial moderators will be addressed in the current study: adult attachment style and self-efficacy, along with the following potential cultural moderators: familism, traditional gender norms, and bicultural self-efficacy.

**Attachment Theory**

Although first theorized in 1969 by John Bowlby, attachment theory was further developed by Mary Ainsworth and colleagues, identifying differences in individual’s attachment behavior based on an individual’s childhood environment (Ainsworth et al., 1978; Bokhorst et al., 2003; Bowlby, 1982; Fearon & Roisman, 2017). The three attachment styles for children developed by Ainsworth continue into adulthood, changing only slightly as an individual
matures. Typically, as one develops, a person’s abstract sense of self is dichotomized into positive or negative, worthy of love or unlovable (Bartholomew & Horowitz, 1991). Individuals also tend to dichotomize their image of others into positive or negative: positive being trustworthy and available, negative being unreliable and rejecting (Bartholomew & Horowitz, 1991). These dichotomizations lay the foundation for the four adult attachment styles: secure, preoccupied, dismissive, and fearful-avoidant (Bartholomew & Horowitz, 1991; Main & Goldwyn, 1990). Individuals with secure attachment developed secure attachment as a child and tend to develop healthy relationships, are self-confident, non-reactive, resilient and comfortable in close relationships as adults (Bartholomew & Horowitz, 1991). Avoidant children often are compulsively self-reliant, downplay the importance of relationships and develop a dismissive attachment style (Bartholomew & Horowitz, 1991). Anxious/resistant children tend to become preoccupied with close relationships, dependent on others for self-worth and can be seen as demanding, thus developing a preoccupied attachment style (Bartholomew & Horowitz, 1991). Fearful-avoidant is an attachment style that develops out of negative views of one’s self and others (Bartholomew & Horowitz, 1991). These individuals are often dependent on others but avoid intimacy due to fear of rejection, have low self-esteem and high anxiety regarding connections with others (Bartholomew & Horowitz, 1991). Any form of attachment style that is not a secure attachment is considered insecure both in childhood and adulthood. Furthermore, insecure attachment styles have been shown to be directly impacted by ACEs, specifically maltreatment or abuse (Minzenberg et al., 2008; Riggs et al., 2011). When secure attachments are not generated throughout childhood, a person may search for that connection elsewhere. It has been theorized that many individuals with insecure attachment styles turn to alcohol and drugs to find a connection and fill that void in their life (Kohut, 1971). Strong positive
correlations have been observed between substance use disorders (SUDs) (including alcohol use disorders (AUDs)) and insecure attachment styles ($r > .5$) (Gidhagen et al. 2018; Lac et al., 2013; Nakhoul et al., 2020; Serra et al., 2019; Vismara et al., 2019). Additionally, recent studies have gone as far as to argue for conceptualization of polysubstance use disorders as an attachment disorder on both a behavioral and neural level via emotion regulation and differences in white matter neuronal activation (Hiebler-Ragger & Unterrainer, 2019; Unterrainer et al., 2017). One study by Dishon-Brown and colleagues (2017) demonstrated that a relationship exists between insecure adult attachment styles, childhood victimization and substance use among females on probation or parole. There is a large gap in the literature assessing the relationship between all three of the following variables: ACEs, attachment style and substance use. Given the extensive literature associating ACEs with substance use, the interplay among ACEs, attachment style and substance use warrants further study.

**General Self-Efficacy**

General self-efficacy has largely been assessed among individuals with ACEs to utilize current psychosocial interventions to increase an individual’s general self-efficacy. Research has demonstrated a significant negative association between ACEs and general self-efficacy (Berent et al., 2018; Khodabandeh et al., 2017; Sciaraffa et al., 2018). Recently, Cohrdes and Mauz (2020) demonstrated that self-efficacy may buffer the negative effects of ACEs on both mental and physical health related quality of life. Still, more studies are warranted to further understand the role of self-efficacy. A study including a community sample of Latina women in Southern California showed that general self-efficacy served as a mediator of early sexual experiences on later HIV risk (Newcomb et al., 2003). This may speak to the relationship that self-efficacy may
play in the relationship between ACEs and risky behaviors, such as harmful drug consumption and sexual encounters specifically among Latinx populations.

**Familism and Social Support**

Nurturing relationships and strong social support systems have been shown to serve as protective factors and/or moderators in regard to ACEs and negative health outcomes such as substance use (Brinker & Cheruvu, 2016; Umberson et al., 2014; Zhen-Duan, 2018). Familism is a Latinx cultural value emphasizing family loyalty, unity, obligation and obedience (Lugo Steidel & Conteras, 2003). Strong emphasis on family within Latinx culture has reflected the importance of a strong support system and thus a protective factor against negative health outcomes such as alcohol consumption (DiBello et al., 2016; Stein et al., 2013; Strunin et al., 2015; Vaeth et al., 2016). However, familism may be a risk factor for increased alcohol consumption among Latinx individuals with troublesome relationships with their parents (Martin et al., 2019; Strunin et al., 2015). This may particularly be relevant among individuals who experience ACEs such as household dysfunction.

**Traditional Gender Roles**

Gender has historically played a role in the prevalence of ACEs, specifically with females reportedly being three times more likely to experience childhood sexual abuse, while males are more likely to experience physical abuse (Finkelhor et al., 2014; Leban & Gibson et al., 2019; Merrick et al., 2019). Additionally, 17.1% of female’s experience four or more ACEs compared to 13.9% of males (Merrick et al., 2019). ACEs have also been found to be uniquely associated with substance use for females and delinquency for males (Leban & Gibson, 2019; Penttinen et al., 2020). While these gender differences have been viewed through a general strain theory lens, traditional gender roles may also play a role, specifically among Latinx populations (Leban &
Gibson, 2019). This has been previously shown in motives for drinking among Latinx heavy drinkers in which males endorsed positive alcohol expectancies, and females reported drinking to alleviate psychological distress (Lee et al., 2019). Latina participants in previous studies have described traditional gender roles that included the inappropriateness of female drinking as reasons in regard to not participating in alcohol and substance use (Lee et al., 2019; Raffaelli et al., 2007). In combination with the findings regarding to female alcohol consumption in association with ACEs, future studies are warranted to further evaluate traditional gender roles in substance use among individuals with ACEs.

**Bicultural Self-Efficacy**

Bicultural self-efficacy, or one’s perceived ability to function competently within two separate cultures, has been found to be related to an individual’s psychological well-being, particularly among college students (David et al., 2009). This may be of specific salience among bicultural college students navigating their personal lives and their institutions’ mainstream culture, as it is hypothesized that the ability to function socially within their two cultures increases a person’s ability to cope with daily life stressors (LaFromboise et al., 1993). A recent study among Latinx emerging adults demonstrated that higher bicultural self-efficacy (particularly the social groundedness domain) was associated with lower alcohol use severity ($r = -0.22$), possibly due to bicultural self-efficacy serving as a coping resource (Cano et al., 2020). As these results are relatively novel, more studies need to assess the relationship between bicultural self-efficacy and substance use in order to develop culturally appropriate interventions.
STUDY AIMS

The present study aims to fill the gaps in understanding the association between ACEs and alcohol and marijuana use. Identifying moderators of this association will help to inform the development for more effective interventions for individuals with ACEs.

STUDY HYPOTHESES

The present study hypothesized that among both males and females: 1.) ACEs would be positively associated with marijuana and alcohol consumption variables (path a in Figure 2). 2.) Increased self-efficacy, familism and bicultural self-efficacy would weaken the association between ACEs and marijuana and alcohol consumption variables (path b in Figure 2). 3.) Adhesion to traditional gender norms and insecure adult attachment styles would strengthen the association between ACEs and marijuana and alcohol consumption variables (path b in Figure 2).
<table>
<thead>
<tr>
<th>Domain of Influence</th>
<th>Level of Influence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Individual</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Physical/Built Environment</strong></td>
<td>Participant’s home environment shaped by traditional ACEs.</td>
</tr>
</tbody>
</table>
| **Behavioral**      | Past month alcohol consumption  
|                     | Past month marijuana consumption  
|                     | Adult attachment style  
|                     | Self-efficacy |
| **Sociocultural Environment** | Age  
|                     | Sex  
|                     | Cultural identity  
|                     | Community ACEs  
|                     | Familism/social support  
|                     | Adhesion to traditional gender norms  
|                     | Bicultural self-efficacy |


**Figure 1: Constructs Within Socioecological Framework**

**Adverse Childhood Experiences:**
- Traditional ACEs (e.g., childhood and family stressors)
- Community ACEs (e.g., community level stressors)

**Cultural & Psychosocial Moderators:**
- Protective factors:
  - Self-efficacy
  - Familism
  - Bicultural self-efficacy
- Risk factors:
  - Insecure attachment style
  - Adhesion to traditional gender norms

**Substance Use:**
- Alcohol
- Marijuana

**Figure 2: Study Conceptual Model**
Chapter 2: Methods

Participants and Procedure

A power analysis using G-power revealed that a minimum of three hundred and ninety-two (196 female, 196 male) participants would need to be recruited. For both power analyses, power was set to 80%, tests were set to F-tests and “linear multiple regression: fixed model, $R^2$ deviation from zero,” number of predictors were set to 11 and Pearson correlations between total continuous ACEs and past month alcohol ($r(411) = .08, p = .09$, partial $\eta^2 = 0.09$) or marijuana ($r(411) = .12, p = .02$, partial $\eta^2 = 0.14$) use were taken from data previously collected among a similar sample (Woloshchuk et al., 2020a). The Pearson correlation and effect size from past month alcohol use was used in the power analyses, as that value was smaller to take the most conservative approach to determine needed sample size. The number of predictors was calculated by including the independent variable, the five moderator variables (i.e., attachment style, self-efficacy, familism, machismo (only males) marianismo (Only females), and bicultural self-efficacy) and the five interaction variables. A total of 394 English-speaking Latinx undergraduate students were recruited from a large university on the U.S. border with Mexico. 283 of the participants were female ($M_{age} = 20.86, SD = 3.71$) and 111 were male ($M_{age} = 20.65, SD = 3.13$). Recruitment efforts were primarily via the online SONA systems platform; however, given challenges recruiting male participants, fliers were also created and distributed to course instructors to enhance male participation within the study. The participants were recruited for an online study and provided online consent before proceeding with a survey. Participants received SONA credit for participation. Prior to conducting the survey, the study protocol and data collection procedures were reviewed and approved by the institutional review board. Only participants who identified as male completed The Machismo Measure (2.2.7.), and only
participants who identified as female completed The Marianismo Beliefs Scale (2.2.8.) using skip logic in Qualtrics. Given the sensitive nature of the topics within the survey, a debriefing form identified campus, community, and national resources should the participant need. Counterbalancing was completed by randomizing measures to reduce order effects via block randomization in Qualtrics.

**MEASURES**

*Sociodemographics*

A demographic questionnaire assessed basic demographics such as age, ethnic group, education level, parental education level, income, and parental income (Appendix A).

*Center for Youth Wellness Adverse Childhood Experience Questionnaire (CYW ACE-Q) Teen Self-Report*

This scale was an expanded version of the original Adverse Childhood Experience Questionnaire (Felitti et al., 1998), developed by the Center for Youth Wellness (Burke Harris & Renschler, 2015). The scale consists of 19-items that assess the breadth of exposure to adverse childhood experiences and toxic stress during childhood. The first 10-items address the traditional ACEs: emotional, physical, or sexual abuse, physical and emotional neglect, and household dysfunction. The additional 9-items added by the CYW address community early life stressors that contribute to toxic stress during childhood. The questionnaire was intended to measure cumulative exposure to ACEs in children ages 0 to 19. However, it has been used on other populations (Cronholm et al., 2015). Responses were ‘yes=1’ and ‘no=0’. Total scores ranged from 0 to 19. Higher scores indicate more adverse childhood experiences. This scale demonstrated adequate internal consistency of $\alpha = 0.79$. (Appendix B).
**Drug Use Frequency**

This questionnaire developed by the investigators, assessed the age of first use (interpreted as early initiation of substance), along with past month, past year and lifetime use of alcohol and marijuana use using the following format: “Please indicate how many times you have used [the substance] in your lifetime…in the past year…in the past 30 days.” Participants typed in a numerical response. Categorical questions regarding past month and past year alcohol and marijuana consumption were assessed to cross reference answers provided in the open-ended questions regarding consumption. Due to the time period in which this study was conducted, an additional question was added to inquire the effect that the COVID-19 pandemic had on the participant’s substance use. This measure has been used previously in multiple other studies (Gutierrez & Cooper, 2014; Woloshchuk et al., 2020b) (Appendix C).

**The Experiences in Close Relationships-Revised Questionnaire (ECR-R)**

This was a 36-item scale that measured adult attachment style via two subscales of attachment: anxiety (items 1-18) and avoidance (items 19-36). The scale was rated on a Likert-like scale from 1 to 7 with 1 being strongly disagree and 7 being strongly agree. The participant’s score for avoidance and anxiety related to attachment was calculated by averaging the participant’s responses to the corresponding items with scores ranging from 1 to 7 for avoidance and anxiety. Higher scores indicate higher attachment-related anxiety and higher attachment-related avoidance. Each score was then plotted on a chart with anxiety on the x-axis and avoidance on the y-axis. Scores of 1-3.5 on both avoidance and anxiety indicated secure attachment style, scores of 1-3.5 on avoidance and 3.5-7 on anxiety indicated preoccupied attachment style, scores of 3.5-7 on avoidance and 1-3.5 on anxiety indicated dismissive attachment style and lastly scores of 3.5-7 on both avoidance and anxiety indicated fearful-avoidant attachment style (Fraley...
et al., 2000). Thus, this variable was considered as categorical in the analyses. This scale demonstrated adequate internal consistency of $\alpha = 0.81$ (Appendix D).

**General Self-Efficacy Scale (GSE)**

This scale assessed a general sense of perceived self-efficacy. One of the primary aims was to predict coping with daily hassles, as well as adaptation after experiencing stressful life events. This scale had 10-items that were rated on a Likert-like scale with 1 (not true at all) to 4 (exactly true). The participant’s score was calculated by finding the sum of all the items. Higher scores indicate greater self-efficacy (Schwarzer & Jerusalem, 1995). This scale yielded an internal consistency of $\alpha = 0.89$ (Appendix E).

**Attitudinal Familism Scale (AFS)**

This scale assessed beliefs and attitudes towards family members. It consisted of 18 questions rated using a Likert-like ranging from 1 (strongly disagree) to 10 (strongly agree). It consisted of four subscales: familial support (composed of six items), family interconnectedness (composed of five items), family honor (composed of four items), and subjugation of self for the family (composed of three items) (Lugo Steidel & Contreras, 2003). This scale demonstrated high overall internal consistency of $\alpha = 0.88$. (Appendix F).

**The Machismo Measure**

This scale was intended to assess behavioral and cognitive aspects of machismo via a two-factor design with factor one assessing traditional machismo and factor two assessing caballerismo. The scale consisted of 20-items rated on a 7-point scale ($1=very strongly disagree$ to $7=very strongly agree$) (Arciniega et al., 2008). This scale demonstrated high internal consistency of $\alpha = 0.88$ for traditional machismo and $\alpha = 0.87$ for caballerismo (Appendix G).
*The Marianismo Beliefs Scale (MBS)*

This was a 24-item scale that assessed an individual’s affinity to marianismo beliefs. The items were rated on a 4-point scale from *strongly disagree (1)* to *strongly agree (4)*. Higher scores ($M > 2.5$) indicated more affinity to marianismo beliefs (Castillo et al. 2010). There are five subscales included in the 24-items: family pillar ($\alpha = 0.84$), virtuous and chaste ($\alpha = 0.83$), subordinate to others ($\alpha = 0.84$), silencing self to maintain harmony ($\alpha = 0.89$), and spiritual pillar ($\alpha = 0.86$) (Appendix H).

*The Bicultural Self-Efficacy Scale (BSE)*

This 26-item scale assessed a bicultural individuals’ perceived ability to function competently in two cultures. The items were rated on a 9-point scale from *strongly disagree (1)* to *strongly agree (9)*. Higher scores indicated higher bicultural self-efficacy. There were six subscales included in this scale: social groundedness ($\alpha = 0.92$), communication ability ($\alpha = 0.86$), positive attitudes toward both groups ($\alpha = 0.88$), knowledge of cultural beliefs and values ($\alpha = 0.77$), role repertoire ($\alpha = 0.68$), and bicultural beliefs ($\alpha = 0.79$) (David et al., 2009) (Appendix I).

*Social Support – Friends and Adults*

This six-item scale assessed perceived social support beyond the immediate family, including friends and non-parent adults. The items were rated on a 4-point scale of *mostly true about me (4)* to *not true about me (1)*. Higher scores indicated higher levels of social support (Hamby et al., 2015). This scale demonstrated an adequate internal consistency of $\alpha = 0.86$ (Appendix J).

**APPROACH TO ANALYSES**

Descriptive analyses were used to generate participant characteristics on marijuana, alcohol use and adverse childhood experiences among Latinx college students on the U.S./Mexico border. Multiple time periods of substance use were assessed both continuously and
categorically. Continuous substance use variables were correlated with the categorical substance use variables (Females: $r(238)_{\text{alcohol.pastmonth}} = .58$, $r(144)_{\text{marij.pastmonth}} = .77$, $r(238)_{\text{alcohol.pastyear}} = .21$, $r(144)_{\text{marij.pastyear}} = .67$, Males: $r(86)_{\text{alcohol.pastmonth}} = .67$, $r(86)_{\text{marij.pastmonth}} = .76$, $r(86)_{\text{alcohol.pastyear}} = .49$, $r(86)_{\text{marij.pastyear}} = .65$), suggesting the validity of using either type of variable. Thus, a Pearson correlation matrix was used to determine which substance use variables to use as the dependent variable in the moderation analyses based on which were significantly correlated with ACEs. To test the main hypotheses, hierarchal linear regressions were conducted to test for main and interactive effects and to determine if the moderators (i.e., attachment style ($Z_1$), self-efficacy ($Z_2$), familism ($Z_3$), machismo beliefs: males ($Z_4$), marianismo beliefs: females ($Z_5$), bicultural self-efficacy ($Z_6$)- all continuous variables were mean centered to reduce multicollinearity) affect the relationship between categorical ACEs ($X$) and past month use, past year use, or age of first use for alcohol ($Y_1$) and marijuana ($Y_2$) (Figure 3). To further breakdown the hierarchal analyses for clarification, each analysis will follow these steps: 1.) Regression of $Y_1$ on $X$. 2.) Regression of $Y_1$ on $X$ and $Z_1$. If no statistical change in $R^2$ is observed during step two, thus implying that the moderator has no predictive effect on $Y_1$, step three will be conducted. 3.) Regression of $Y_1$ on $X$, $Z_1$ and calculated variable of $X*Z_1$. Statistical change in $R^2$ during step three implies a significant moderation effect between $X$ and $Y$ by $Z$. Statistically significant moderation effects were then run in SPSS Process for further interpretation. Additionally, if no preliminary relationship was found with familism, social support as a potential moderator would be explored.
Figure 3: Representation of Analyses
Chapter 3: Results

Female Participants

Descriptive Analyses

Latina undergraduate college students \((N = 283, M_{age} = 20.86, SD = 3.71)\) were recruited from a University located on the U.S./Mexico border. Analyses were conducted to determine the frequencies and distributions of the independent variable: ACEs and the fourteen substance use dependent variables. Within the sample, the average ACEs total score was 4.06 \((SD = 3.35)\), the average past month alcohol use was 5.25 \((SD = 8.59)\), and the average past month marijuana use was 7.28 \((SD = 19.89)\) (Tables 1 and 2). Additionally, 81.6% of participants lived at home with a parent or guardian, through stay-at-home orders and virtual classes, their substance use patterns were likely to change, hence the inclusion of the survey questions regarding the impact of COVID-19 on participants’ alcohol and marijuana use. Consequently, 21.4% of females reported a decrease in alcohol consumption due to COVID-19, while 18.1% of females reported an increase of marijuana use due to COVID-19.

Univariate Analyses

ACEs were associated with the following seven outcome variables of interest: alcohol ever use \((r(281) = .18, p < .001)\), alcohol age of first use \((r(236) = -.27, p < .001)\), marijuana ever use \((r(281) = .35, p < .001)\), marijuana past year use \((r(142) = .16, p = .04)\), marijuana past month use \((r(281) = .25, p < .001)\), marijuana quantity \((r(281) = .20, p < .001)\), and impact of COVID-19 on marijuana use \((r(144) = .32, p < .001)\) (Table 3). Only these seven substance use variables were then used in the multivariate analyses as dependent variables.

Due to the data being collected during the COVID-19 pandemic, the authors included variables on the impact of COVID-19 on the participants alcohol and marijuana use. As reported
above, impact of COVID-19 on marijuana use was correlated with ACEs ($r(144) = .32, p < .001$), past month marijuana use ($r(144) = .41, p = .00$), past year marijuana use ($r(144) = .37, p < .001$), and marijuana use quantity ($r(144) = .41, p = .00$). The impact of COVID-19 on participants’ alcohol use was correlated with past month alcohol use ($r(238) = .22, p < .001$) and past year alcohol use ($r(238) = .23, p < .001$). No other statistically significant Pearson correlations or Chi-squared statistics were found.

**Multivariate Analyses**

The relationship between each of the seven outcome variables, ACEs, attachment style, general self-efficacy, attitudinal familism, marianismo beliefs, bicultural self-efficacy, and the corresponding interaction variables were modeled using hierarchal regression. Only four models out of the seventy hierarchal regression models indicated a significant interaction. SPSS Process was used to interpret the interaction findings within each of the four models.

The first significant interaction model indicated that attachment style moderates the association between ACEs and past month marijuana use. Specifically, fearful-avoidant attachment style strengthens the relationship between ACEs and past month marijuana use ($\beta = .26, t_{(282)} = 1.91, f^2 = .08, p = .05, 95\% CI = -.01, .52$) (Figure 4).

The second significant interaction model indicated that attachment style moderates the association between ACEs and quantity of marijuana use. Specifically, fearful-avoidant attachment style strengthens the relationship between ACEs and quantity of marijuana use ($\beta = .21, t_{(282)} = 2.17, f^2 = .04, p = .03, 95\% CI = .02, .40$) (Figure 5).

The third significant interaction model indicated that marianismo belief scores moderate the association between ACEs and past year marijuana use. Specifically, marianismo belief
scores below 45.7, weaken the relationship between ACEs and past year marijuana use ($\beta = -65.57$, $t_{(142)} = -2.50$, $f^2 = 16.05$, $p = .01$, 95% CI = -117.51, -13.63) (Figure 6).

The fourth significant interaction model indicated that bicultural self-efficacy moderated the association between ACEs and alcohol age of first use. Specifically, bicultural self-efficacy scores below 247 strengthen the relationship between ACEs and alcohol age of first use ($\beta = .34$, $t_{(237)} = 1.99$, $f^2 = -.20$, $p = .04$, 95% CI = .00, .68) (Figure 7).

**MALE PARTICIPANTS**

**Descriptive Analyses**

Latino undergraduate college students ($N = 111$, $M_{age} = 20.65$, $SD = 3.13$) were recruited from a University located on the U.S./Mexico border. Analyses were conducted to determine the frequencies and distributions of the independent variable: ACEs and the fourteen substance use dependent variables. Within the sample, the average ACEs total score was 3.21 ($SD = 3.10$), the average past month alcohol use was 4.10 ($SD = 7.66$), and the average past month marijuana use was 11.81 ($SD = 24.91$) (Tables 4 and 5). Additionally, 84.7% of participants lived at home with a parent or guardian. Consequently, 57.0% of males reported a decrease in alcohol consumption due to COVID-19, while 15.4% of males reported an increase of marijuana use due to COVID-19.

**Univariate Analyses**

ACEs were associated with the following three outcome variables of interest: alcohol ever use ($r(110) = .24$, $p = .01$), alcohol age of first use ($r(86) = -.38$, $p = .00$), and marijuana age of first use($r(51) = -.46$, $p = .00$) (Table 6). Only these three substance use variables were then used in the multivariate analyses as dependent variables. No other statistically significant Pearson correlations or Chi-squared statistics were observed.
**Multivariate Analyses**

The relationship between each of the three outcome variables, ACEs, machismo beliefs, bicultural self-efficacy, attitudinal familism, attachment style, general self-efficacy and the corresponding interaction variables were modeled using hierarchal regression. No models were statistically significant. It is noteworthy that despite rigorous efforts, an adequate sample size based on the power analysis was not recruited, indicating a higher possibility of a type two error.
Table 1: Categorical Participant Characteristics: Females ($n = 283$)

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Table 3: Pearson Correlations for Study Variables: Females

* p < .05.
C Cannot be computed because at least one of the variables is constant.

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Table 4: Categorical Participant Characteristics: Males ($n = 111$)

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Table 6: Pearson Correlations for Study Variables: Males

* p < .05.

C Cannot be computed because at least one of the variables is constant.

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Figure 4: Interaction of ACEs on Marijuana Past Month Use by Attachment Style:

Females

*Note.* Interaction between ACEs by attachment style (-1 SD, Mean, +1 SD) on past month marijuana use measured categorically. Higher scores on ACEs indicate more ACEs. Fearful-avoidant attachment style strengthens the relationship between ACEs and past month marijuana use.
Figure 5: Interaction of ACEs on Quantity of Marijuana Use by Attachment Style: Females

Note. Interaction between ACEs by attachment style (-1 SD, Mean, +1 SD) on quantity of marijuana used on a day the participant consumed marijuana. Higher scores on ACEs indicate more ACEs. Fearful-avoidant attachment style strengthens the relationship between ACEs and quantity of marijuana used.
Figure 6: Interaction of ACEs on Marijuana Past Year Use by Marianismo Beliefs:

Females

Note. Interaction between ACEs by marianismo beliefs (-1 SD, Mean, +1 SD) on past year marijuana use. Higher scores on ACEs indicate more ACEs. Higher scores on marianismo beliefs indicate higher adherence to traditional Latina cultural gender norms. Marianismo belief scores below 45 weaken the relationship between ACEs and past year marijuana use.
Figure 7: Interaction of ACEs on Alcohol Age of 1st Use by Bicultural Self-Efficacy:

Females

Note. Interaction between ACEs by bicultural self-efficacy (-1 SD, Mean, +1 SD) on age of first alcohol use. Higher scores on ACEs indicate more ACEs. Higher scores on bicultural self-efficacy indicate higher perceived ability to function competently in two cultures. Bicultural self-efficacy scores below 247 strengthen the relationship between ACEs and age of first alcohol use.
Chapter 4: Discussion

The current study aimed to explore the association between ACEs and alcohol and marijuana use further than previous studies by identifying psychosocial and cultural moderators of the associations. BSE, MBS and attachment style moderated ACEs and substance use consumption variables among females, but not males. These findings constitute the bulk of the discussion.

Females

Among the current Latina college student population, 46.6% reported 4 or more ACEs. This is considerably higher compared to previous literature that indicated 31.2% of Latina subgroups reported 4 or more ACEs (Llabre et al., 2017). It is important to note that the current study included community ACEs in addition to the traditional 10 ACEs. However, 33.6% of the current sample reported 4 or more ACEs with the traditional ACEs alone, which remains higher than what previous studies have indicated among Latinas. This suggests that the prevalence of ACEs among Latina college students in border regions needs to be further assessed for patterns differing from other Latina groups. Additionally, 64.7% of the current sample reported using alcohol within the past month, and 32.9% reported using marijuana within the past month. This rate of alcohol consumption is consistent with previous literature among Latinx college students (Forster et al., 2020; Gutierrez & Cooper, 2014). However, the rate of marijuana consumption is much higher than previous studies which indicate between 12.8% and 18.4% among Latinx college students (DEA, 2017; Gutierrez & Cooper, 2014; Woloshchuk et al., 2020).

Attachment Style

Fearful-avoidant attachment style significantly moderated the relationship between ACEs and past month marijuana use and the relationship between ACEs and quantity of marijuana used when consuming. These findings were congruent with hypotheses. Individuals who demonstrate
a fearful-avoidant attachment style often have experienced some form of abuse or neglect from their caregivers and/or close paternal figure during childhood (i.e., family member, family friend, teacher, coach) (Reichmann-Decker et al., 2009). In order to avoid further punishment, individuals with this attachment style learn to hide their emotions and avoid seeking comfort or assistance from their attachment figures (Crittenden, 1992). Often times the child learns to put others’ needs before their own in an attempt to generate a happier environment and avoid further abuse. Low self-esteem, high relationship anxiety, and suppression of negative affect are commonly observed (Murase et al., 2021; Minzenberg et al., 2008; Riggs et al., 2011). These individuals tend to have difficulty identifying their feelings (Gaher et al., 2015), lack trust in oneself and others (the core feature of a fearful-avoidant attachment style), and evidence severe emotional distress such as depression, anxiety and stress (Palitsky et al., 2013). Emotional distress and lack of human connection in relation to having a fearful-avoidant attachment style may increase marijuana consumption frequency and the amount of marijuana used as a coping mechanism (Ai & Lee, 2018), similarly observed with problematic alcohol use (Gidhagen et al, 2018; Lac et al., 2013; Murase et al., 2021; Nakhoul et al., 2020; Serra et al., 2019; Vismara et al., 2019). Specifically, emotional distress with regard to emotion regulation, depression, anxiety and stress should be assessed in future studies to understand the most salient targets of treatment. Therefore, intervention targeting insecure attachment styles to improve trust in oneself and others may help reduce marijuana consumption among Latina college students. It is important to keep in mind that individuals with fearful-avoidant attachment style are more likely to avoid or drop out of treatment (Murase et al., 2021; Najavits and Weiss, 1994) due to distrust and interpersonal conflict. Therefore, initial assessment of ACEs and attachment style among all
clients who enter treatment is crucial, especially when working with clients with substance use/abuse.

**Marianismo Beliefs**

While few studies assessing marianismo beliefs exist, the finding that these beliefs moderate the relationship between ACEs and marijuana use is vital to interpret, particularly among a border region sample. Three explanations seem noteworthy. First, this finding may indicate that Latinas who adhere to traditional gender norms use marijuana as a way to cope with internal conflict, emotion regulation, depression, anxiety or overall stress associated with marianismo beliefs (Perrotte et al., 2018). As seen within other culture’s traditional female roles, marianismo beliefs encapsulate the ideal woman as subordinate, virtuous, humble, and spiritual (Castillo et al., 2010). Additionally, women are expected to withstand extreme sacrifices and suffering for the sake of the family (Castillo et al., 2010). Starting in childhood, women are expected to put others’ needs before their own. Yet despite strong adherence to marianismo beliefs, Latina college students are alternatively expected to be strong, capable, and effective in other realms such as academic and occupational environments. However, they may have limited ability to process these conflicting demands and/or regulate emotions that may lead to depression, anxiety or stress due to negative affect suppression, ACEs, and adhesion to traditional gender roles (Alvarez et al., 2019). This limited ability to process or regulate emotion may lead women to look for an alternative coping strategy, such as marijuana use to alleviate psychological distress (Lee et al., 2019). Second, it may be that women with multiple ACEs and strong marianismo beliefs use marijuana more frequently to fit in with their male counterparts and/or females who adhere less to traditional gender roles. This may be in relation to a shift in beliefs among Latinas who grew up with strong marianismo beliefs and are realizing the
limitations to those beliefs outside of the home. Third, the patterns observed here with marijuana use may be consistent with findings which suggest women who adhere to marianismo beliefs and report high levels of stress do consume alcohol yet at lower levels (e.g., socially, not in bingeing fashion; Perrotte et al., 2018). The current study demonstrates the complex nature of how traditional gender roles continue to impact individuals, particularly Latinas on the U.S./Mexico border. Therefore, future studies should assess emotion regulation, internal role conflict, and non-familial relationships (e.g., peers, colleagues) in relation to ACEs, marianismo beliefs and substance use in order to further delineate the nuanced relationship between these constructs.

**Bicultural Self-Efficacy**

Having to navigate, not one but two, cultural identities is a unique challenge that bicultural individuals experience. Consistent with hypotheses, the finding that low bicultural self-efficacy strengthens the relationship between ACEs and early initiation of alcohol consumption indicates that one’s perceived ability to function competently within two separate cultures needs to be further considered among bicultural populations. Consistent with previous literature, strong bicultural self-efficacy may allow college students to easily transition between social lives at home and at school, therefore increasing their ability to cope with social relationships (Cano et al., 2020; David et al., 2009). Individuals who feel a lack of belonging within one or more of their core cultures, in addition to having multiple ACEs, may turn to alcohol at an early age to cope, particularly if they live in a household where alcohol is accessible (Cano et al., 2020). Additionally, one study suggested that Latinx individuals who are 3rd generation American or greater, experience higher rates of ACEs relative to recent immigrants or 1st generation Americans (Loria & Caughy, 2017). This may be associated with having to navigate between two cultures, levels of bicultural self-efficacy and intergenerational
trauma (Cerdeña, et al., 2020). Future studies should assess coping strategies and multiple indicators of acculturation to further disentangle these relationships.

**MALES**

Among the current Latino sample, 37.8% indicated 4 or more ACEs. This is considerably higher compared to previous studies that indicated 25.8% of Latino subgroups reported 4 or more ACEs (Llabre et al., 2017). Removing the 9 additional community ACEs, 22.7% of the current sample still reported 4 or more ACEs, which is slightly lower than what previous studies have observed. Thus, unity in measurement of ACEs across studies seems a prudent future direction, as does the inclusion of male participants within this research topic. Additionally, 45% of the current sample reported using alcohol within the past month and 26.1% reported using marijuana within the past month. This rate of alcohol use is lower relative to previous studies suggesting 68%-71% consuming alcohol within the past month (Forster et al., 2020; Gutierrez & Cooper, 2014). Yet the rate of marijuana use is much higher than previous studies which report between 12.8% and 18.4% among Latinx college students (DEA, 2017; Gutierrez & Cooper, 2014; Woloshchuk et al., 2020).

No moderation analyses among male participants were statistically significant presently (likely due to limited power), thus, the discussion is based upon observed univariate relationships. ACEs were correlated not only with having ever used alcohol but having initiated alcohol and marijuana use at an earlier age. Findings from previous studies among adolescents and adults are mixed in terms of associations between ACEs and earlier initiation of substance use. Some have indicated earlier initiation among females but not males (Chatterjee et al., 2018), while others have observed this finding among both males and females (Dube et al., 2003; Dube et al., 2005). That the current study indicates an association between ACEs and early initiation of
alcohol and marijuana use among males and early initiation of alcohol use among females may be unique to Latinx college students on the U.S./Mexico border. Future studies may wish to explore potential explanatory constructs such as ease of access, country of residence, and parental involvement, as well as include a broader age range and non-college student emerging adults.

The lack of observed relationships between ACEs and substance use frequency is worth highlighting, especially in light of strong evidence that males use substances as a maladaptive coping strategy (Eaton et al., 2012). It may be that the perceived stigma of ACEs and/or reporting them is higher in males than females such that studies have noted the relationship between ACEs and use in females. For example, among hospital emergency department patients ACEs were more strongly associated with substance use among females than males (Cunradi et al., 2020). The present findings extend previous ones to Latinx College students on the U.S./Mexico border and suggest the need for future studies to assess other coping strategies and perceived stigma associated with ACEs.

**IMPACT OF COVID-19**

The current data set was collected during the COVID-19 pandemic from October 23, 2020 to April 1, 2021. The ongoing pandemic greatly impacted the lives of the college students who participated in this study. The decrease in alcohol use among both females and males due to COVID-19 may have contributed to the lack of observed relationships between ACEs and alcohol frequency variables. That the majority of participants were underage, living with parents, the border to Juarez where many go to drink underage was closed, and gatherings among friends were minimized, alcohol use seems to have been minimized as well (Richter, 2020). However, marijuana use may have increased due to ease of access, ease of concealment and possible
increased acceptance while in a family home, despite marijuana being illegal in the state of Texas.

Univariate analyses revealed significant correlations between ACEs and the impact of COVID-19 on marijuana use among females, indicating that females with more ACEs were more likely to report an increase in marijuana use during COVID-19. This finding is noteworthy. It may be that ACEs result in greater stress sensitization among females, therefore increasing vulnerability to substance use, particularly marijuana use, as it may be more available during the COVID-19 pandemic (Cunradi et al., 2020).

While it was not feasible to assess participants’ answers to the ECR-R for attachment style prior to the pandemic, the effect of the pandemic on participants’ responses to the ECR-R should be noted. Although previous studies suggest that the percentage of U.S. college students with secure attachment style has decreased over the years (1988: 49%; 2011: 42%), 1.4% of females and 1.8% of males indicate extremely low rates of secure attachment (Konrath et al., 2014). The reduction in secure attachment style has previously been thought to be associated with decreased familial interconnectedness, changes in parenting style, increased social media, societal and cultural changes leading a child to learn to be more independent and less trustworthy of others (Konrath et al., 2014). Intergenerational trauma may also be affecting the decrease in secure attachment style, as it has been reported previously that ACEs have increased across Latinx generations, and increased ACEs are associated with insecure attachment style (Cerdeña, et al., 2020; Grest et al., 2021). Yet in addition to these factors, COVID-19 has proven to be an ongoing trauma and may have influenced participants’ views of themselves and others to be even more untrustworthy than before COVID-19, influencing a shift to a more insecure attachment style (fearful-avoidant) in order to cope. According to attachment theory, attachment style is
developed and set in childhood and is carried with the child as they grow into an adult, presuming that an attachment style is unlikely to change without active therapy (Bowlby, 1982). However, attachment styles are potentially modifiable by long term traumatic life events and experiences (Bowlby, 1988). Scores on the ECR-R may have been further influenced by the fact that individuals with insecure attachment and early life traumas are more susceptible to posttraumatic stress disorder (PTSD) symptoms as adults (Ogle et al., 2015). With the average ACEs score being 4.1 ($SD=3.4$) among females and 3.2 ($SD=3.1$) among males, it is possible that COVID-19 may be aggravating preexisting PTSD symptoms or generating new symptoms that influenced their responses on the ECR-R, particularly if the participant is quarantined in an unhealthy or abusive living situation. A recent study by Moccia and colleagues (2020), suggested that at least 38% of the general Italian population is experiencing severe psychological distress due to COVID-19 and that qualities of both secure and insecure adult attachment styles serve as protective factors against psychological burden, as a function of attachment style is to regulate distress (Bartholomew & Horowitz, 1991). Additionally, COVID-19 appears to impact the psychological well-being of those with ACEs more severely than those without ACEs (Guo et al., 2020; Kalia et al., 2020; Shreffler et al., 2021). Thus, the present attachment style findings must be observed in temporal and consequence-related contexts.

**Socioecological Framework**

The current study contributes to further expansion of the socioecological framework. Specifically, specific domains of influence that are particularly associated with ACEs among Latinx college students: physical/built environment – traditional ACEs, behavioral domain – attachment style, sociocultural environment – cultural identity, community ACEs, traditional gender norms and bicultural self-efficacy are highlighted. Additionally, findings further
demonstrate the importance of a life course perspective, as ACEs influence attachment style which is associated with substance use (Alvidrez et al., 2019). Identifying community ACEs in addition to the traditional ACEs may be key in fully understanding the impact of ACEs, specifically among Latinx individuals (Burke Harris & Renschler, 2015). Further assessment of these specific integrated constructs is crucial in developing culturally appropriate interventions for alcohol and marijuana use within the border region. Additionally, these findings suggest that expansion into other domains of influence such as interpersonal and community level domains are imperative in further understanding the relationships between ACEs, attachment style, Marianismo beliefs, bicultural self-efficacy, and substance use. Specifically, understanding parental or household substance use may be associated with the strength of the relationship between these constructs, and community norms, particularly relative to substance use, may be associated with individual levels of adherence to traditional gender norms and an individual’s overall biculturalism.

**Strengths and Limitations**

A precedent limitation of this study may be the use of the ECR-R as the measure aimed to assess adult attachment style in regard to the participants’ past or present romantic relationships. Given that participants were, on average, around 20 years old and the majority lived at home with a parent or guardian, the number of participants who have experienced a serious romantic relationship may be low, thus limiting ability to accurately respond to the ECR-R questionnaire. Additionally, generational shifts leading college students to be more independent may have influenced participants responses on the ECR-R. Other limitations include the study’s cross-sectional design limiting causal inference, as well as the use of a convenience sample, potentially limiting generalizability. Additionally, the self-report nature of this study is a
limitation as the responses may have been influenced by participants’ tendencies to respond in a socially desirable way. The study site is a very specific region, thus influencing generalizability to other regions in which Latinxs are not the predominant ethnic group. Lastly, at the present time, not enough males were recruited to meet power calculations, which likely resulted in the lack of observed moderators. Strengths include the investigation of these relationships within the most rapidly growing ethnocultural minority attending college (Snyder et al., 2019) and doing so utilizing nuanced constructs including marianismo beliefs and bicultural self-efficacy in relation to ACEs and substance use.

CONCLUSIONS

Our findings suggest the need to assess marijuana and alcohol use among Latinx college students from a life-course, developmental perspective, rather than as an isolated factor, especially if use becomes problematic in nature. The present findings demonstrated that insecure attachment style, marianismo beliefs, and bicultural self-efficacy all affect the relationship between ACEs and marijuana use frequency and early initiation of alcohol use. Findings suggest clients with ACEs and marijuana or alcohol use may view both themselves and others as untrustworthy, may not be able to identify or express their feelings as readily as others and may have difficulty navigating two cultural identities. These findings have imperative clinical implications not only for substance use but for trauma informed care as well. For example, upon initiation of psychotherapy treatment, it is essential to assess ACEs, attachment style and cultural identity to promote greater insight into the client’s inner struggles and assess what needs to address immediately. Therapeutic approaches, such as psychodynamic therapy or emotion focused therapy (EFT; Watson et al., 2019), that focus on the life span, the importance of the
therapist-client relationship, and improvement of affect regulation/expression may be crucial in the treatment and prevention of alcohol and marijuana use.

**Future Directions**

Future research is needed in order to disentangle the concepts addressed within the current study and provide greater direction for research and intervention. Specifically, future studies should likely be prospective in nature, include the exploration of gender differences, and assess other salient constructs such as emotion regulation, symptoms of mental illness, role identity conflict, non-familial relationship patterns, and multiple indicators of acculturation. Other constructs to consider from a socioecological perspective by extending particularly levels of influence include family and peer substance use patterns and issues related to access and community norms. Extending the present study with future assessments and applying current findings within Latinx practice-oriented settings is optimal to promote border region health.
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Appendix

Appendix A: Sociodemographics

1. Please indicate your gender.
   - Male
   - Female
   - Other

2. What was your assigned biological sex at birth?
   - Male
   - Female

3. What is your current age? _______

4. What is your household income?
   - Under $29,999
   - $30,000 - $49,999
   - $50,000 - $74,999
   - $75,000 - $99,999
   - $100,000 - $149,999
   - $150,000 or More

5. How many people live in your current household? (Including yourself) _______

6. Do you live at home with a parent(s) or legal guardian(s)?
   - Yes
   - No

7. What is the highest level of education obtained by your father?
   - Middle School
   - High School Diploma
   - Some College
   - 2 Year College
   - 4 Year College
   - Graduate School

8. What is the highest level of education obtained by your mother?
   - Middle School
   - High School Diploma
   - Some College
   - 2 Year College
   - 4 Year College
   - Graduate school
9. What is your race/ethnicity?
   – Asian or Pacific Islander
   – Hispanic/Latinx
   – White Caucasian
   – Black/African American
   – American Indian/Native American
   – Other ___________________

10. What is the primary language spoken at home?
    – English
    – Spanish
    – Other ______________

11. What was your first language?
    • English
    • Spanish
    • Other _____

12. Where do you live?
    • El Paso
    • Juarez
    • Other _____

13. Where were you born?
    • El Paso
    • Juarez
    • Other _____

14. Where was your father born?
    • El Paso
    • Juarez
    • Other _____

15. Where was your mother born?
    • El Paso
    • Juarez
    • Other _____

16. Are you a veteran or have you ever been in military active duty?
    • Yes
    • No

17. What is your sexual orientation?
• Straight (heterosexual)
• Gay/Lesbian (Homosexual)
• Bisexual
• Asexual
• Other, please specify: _____

18. What describes your current romantic relationship?
• Single
• In a Committed Relationship
• Dating
• Engaged
• Open-Relationship
• Married
• Other, please specify: _____

19. If you are currently in a relationship, how long have you been in this relationship for? (In months)
• _____ Months

20. What is your religious affiliation?
• Catholic
• Jehovah’s Witness
• Christianity
• Judaism
• Hinduism
• Buddhism
• Islam
• Taoism
• Atheist
• Agnostic

Other, please specify: _____

21. Have you ever received Mental Health Services?
_____ Yes
_____ No

If yes, what conditions were you treated for?
• _____ Substance Abuse
• _____ Depression
• _____ Anxiety
• _____ Post-Traumatic Stress Disorder
• _____ Schizophrenia
• other (please specify) ______
22. Are you currently employed?
   • Employed full time
   • Employed part time
   • Unemployed looking for work
   • Unemployed not looking for work

23. Are you currently unemployed (laid off) because of the COVID-19 pandemic?
   • Yes
   • No

24. Are you concerned about financial insecurity due to the COVID-19 pandemic?
   • Yes
   • No

25. Have you ever been diagnosed with COVID-19?
   • Yes
   • No
Appendix B: CYW Adverse Childhood Experience Scale (ACE-Q)

Please answer yes or no.
While you were growing up, during your first 18 years of life:
1.) Your parents ever separated or divorced.
2.) You lived with a household member who served time in jail or prison.
3.) You lived with a household member who was depressed, mentally ill or attempted suicide.
4.) You saw or heard household members hurt or threaten to hurt each other.
5.) A household member swore at, insulted, humiliated, or put you down in a way that scared you OR a household member acted in a way that made you afraid that you might be physically hurt.
6.) Someone touched your private parts or asked you to touch their private parts in a sexual way that was unwanted, against your will, or made you feel uncomfortable.
7.) More than once, you went without food, clothing, a place to live, or had no one to protect you.
8.) Someone pushed, grabbed, slapped or threw something at you OR you were hit so hard that you were injured or had marks.
9.) You lived with someone who had a problem with drinking or using drugs.
10.) You often felt unsupported, unloved and/or unprotected.
11.) You have been in foster care.
12.) You have experienced harassment or bullying at school.
13.) You have lived with a parent or guardian who died.
14.) You have been separated from your primary caregiver through deportation or immigration.
15.) You have had a serious medical procedure or life threatening illness.
16.) You have often seen or heard violence in the neighborhood or in your school neighborhood.
17.) You have been detained, arrested or incarcerated.
18.) You have often been treated badly because of race, sexual orientation, place of birth, disability or religion.
19.) You have experienced verbal or physical abuse or threats from a romantic partner (i.e. boyfriend or girlfriend).
Appendix C: Drug Use Frequency

1. Have you ever consumed alcohol in your lifetime?
   a. Yes
   b. No

2. Have you ever consumed marijuana (e.g. weed, edibles, oils, vapor) in your lifetime?
   a. Yes
   b. No

3. How has the COVID-19 pandemic impacted your alcohol consumption?
   a. Increased
   b. Decreased
   c. The pandemic has not affected my consumption

4. At what age did you first consume alcohol (e.g. beer, wine, liquor)? (answer has to be greater than 5 years old)

5. How many alcoholic drinks have you consumed in the past month? (please give a number)

6. How many alcoholic drinks have you consumed in the past year? (please give a number)

7. How has the COVID-19 pandemic impacted your marijuana consumption?
   a. Increased
   b. Decreased
   c. The pandemic has not affected my consumption

8. At what age did you first consume marijuana (e.g. weed, edibles, oils, vapor)? (answer has to be greater than 5 years old)

9. How many times have you consumed marijuana in the past 30 days (e.g. weed, edibles, oils, vapor)? (please give a number – EXAMPLE: I smoked once in the morning, once at lunch and once before bed every day in the past month = 90)

10. How many times have you consumed marijuana in the past year (e.g. weed, edibles, oils, vapor)? (please give a number – EXAMPLE: I smoked once in the morning, once at lunch and once before bed every day in the past year = 1080)

11. How many alcoholic beverages have you consumed in the past 30 days?
   a. I have not consumed alcohol, not even a sip (0 drinks)
   b. I have consumed one alcoholic drink, just to try it (1 drink)
   c. I drink monthly, but not weekly
   d. I drink weekly, but not every day
   e. I drink 1 drink per day
   f. I drink more than 1 drink per day
12. How many alcoholic beverages have you consumed in the past year?
   a. I have never consumed alcohol, not even a sip (0 drinks)
   b. I have consumed one alcoholic drink, just to try it (1 drink)
   c. I drink monthly, but not weekly
   d. I drink weekly, but not every day
   e. I drink 1 drink per day
   f. I drink more than 1 drink per day

13. How many drinks containing alcohol did you have on a typical day when you were drinking during the past 30 days?
   a. I do not drink
   b. 1-2 drinks
   c. 2-4 drinks
   d. 5-6 drinks
   e. 7-9 drinks
   f. 10 or more drinks

14. How many times have you consumed marijuana in the past 30 days?
   a. I have never smoked, not even a puff (0)
   b. I have smoked just to try it (1)
   c. I smoke monthly, but not weekly (2-3)
   d. I smoke weekly, but not every day (4-29)
   e. I smoke 1x/day (30)
   f. I smoke more than 1x/day (31+)

15. How many times have you consumed marijuana in the past year?
   a. I have never smoked, not even a puff (0 times)
   b. I smoke occasionally, but not every month (1-11 times)
   c. I smoke monthly, but not weekly (12-51 times)
   d. I smoke one time per week (52 times)
   e. I smoke weekly, but not every day (53-364 times)
   f. I smoke 1x/day or more (365+ times)
Appendix D: The Experiences in Close Relationships-Revised Questionnaire (ECR-R)

The statements below concern how you feel in emotionally intimate relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by circling a number to indicate how much you agree or disagree with the statement.

1=Strongly disagree, 2=Disagree, 3=Somewhat disagree, 4=Neither agree or disagree, 5=Somewhat agree, 6=Agree, 7=Strongly agree

1. I’m afraid that I will lose my partner’s love.
2. I often worry that my partner will not want to stay with me.
3. I often worry that my partner doesn’t really love me.
4. I worry that romantic partners won’t care about me as much as I care about them.
5. I often worry that my partner’s feelings for me were as strong as my feelings for him or her.
6. I worry a lot about my relationships.
7. When my partner is out of sight, I worry that he or she might become interested in someone else.
8. When I show my feelings for romantic partners, I’m afraid they will not feel the same about me.
9. I rarely worry about my partner leaving me.
10. My romantic partner makes me doubt myself.
11. I do not often worry about being abandoned.
12. I find that my partner(s) don’t want to get as close as I would like.
13. Sometimes romantic partners change their feelings about me for no apparent reason.
14. My desire to be very close sometimes scares people away.
15. I’m afraid that once a romantic partner gets to know me, he or she won’t like who I really am.
16. It makes me mad that I don’t get the affection and support I need from my partner.
17. I worry that I won’t measure up to other people.
18. My partner only seems to notice me when I’m angry.
19. I prefer not to show a partner how I feel deep down.
20. I feel comfortable sharing my private thoughts and feelings with my partner.
21. I find it difficult to allow myself to depend on romantic partners.
22. I am very comfortable being close to romantic partners.
23. I don’t feel comfortable opening up to romantic partners.
24. I prefer not to be too close to romantic partners.
25. I get uncomfortable when a romantic partner wants to be very close.
26. I find it relatively easy to get close to my partner.
27. It’s not difficult for me to get close to my partner.
28. I usually discuss my problems and concerns with my partner.
29. It helps to turn to my romantic partner in times of need.
30. I tell my partner just about everything.
31. I talk things over with my partner.
32. I am nervous when partners get too close to me.
33. I feel comfortable depending on romantic partners.
34. I find it easy to depend on romantic partners.
35. It’s easy for me to be affectionate with my partner.
36. My partner really understands me and my needs.
Appendix E: General Self-Efficacy Scale

<table>
<thead>
<tr>
<th>General Self-Efficacy Scale (GSE)</th>
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<tbody>
<tr>
<td><strong>1. I can always manage to solve difficult problems if I try hard enough.</strong></td>
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<td><strong>2. If someone opposes me, I can find the means and ways to get what I want.</strong></td>
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<td><strong>3. It is easy for me to stick to my aims and accomplish my goals.</strong></td>
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<td><strong>4. I am confident that I could deal efficiently with unexpected events.</strong></td>
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<td><strong>5. Thanks to my resourcefulness, I know how to handle unforeseen situations.</strong></td>
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<td><strong>6. I can solve most problems if I invest the necessary effort.</strong></td>
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<td><strong>7. I can remain calm when facing difficulties because I can rely on my coping abilities.</strong></td>
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<td><strong>8. When I am confronted with a problem, I can usually find several solutions.</strong></td>
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<tr>
<td><strong>9. If I am in trouble, I can usually think of a solution.</strong></td>
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<td><strong>10. I can usually handle whatever comes my way.</strong></td>
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<tr>
<th></th>
<th>Not at all true</th>
<th>Hardly true</th>
<th>Moderately true</th>
<th>Exactly true</th>
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<td>5.</td>
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<td>6.</td>
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<td>7.</td>
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<td>8.</td>
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<td>9.</td>
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</tr>
<tr>
<td>10.</td>
<td></td>
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</tr>
</tbody>
</table>
Appendix F: Attitudinal Familism Scale (AFS)

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Children should always help their parents with the support of younger</td>
<td>strongly disagree</td>
<td>disagree</td>
<td>somewhat disagree</td>
<td>disagree</td>
<td>agree</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. The family should control the behavior of children under the age of</td>
<td>strongly disagree</td>
<td>disagree</td>
<td>somewhat disagree</td>
<td>disagree</td>
<td>agree</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. A person should cherish the time they spend with his or her relatives</td>
<td>strongly disagree</td>
<td>disagree</td>
<td>somewhat disagree</td>
<td>disagree</td>
<td>agree</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. A person should live near his or her parents and spend time with</td>
<td>strongly disagree</td>
<td>disagree</td>
<td>somewhat disagree</td>
<td>disagree</td>
<td>agree</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. A person should always support members of the extended family, for</td>
<td>strongly disagree</td>
<td>disagree</td>
<td>somewhat disagree</td>
<td>disagree</td>
<td>agree</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. A person should rely on his or her family if the need arises</td>
<td>strongly disagree</td>
<td>disagree</td>
<td>somewhat disagree</td>
<td>disagree</td>
<td>agree</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. A person should feel ashamed if something he or she does dishONes the</td>
<td>strongly disagree</td>
<td>disagree</td>
<td>somewhat disagree</td>
<td>disagree</td>
<td>agree</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Children should help out around the house without expecting an</td>
<td>strongly disagree</td>
<td>disagree</td>
<td>somewhat disagree</td>
<td>disagree</td>
<td>agree</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
9. Parents and grandparents should be treated with great respect regardless of their differences in views.

1. strongly disagree 2. disagree 3. somewhat disagree 4. somewhat disagree 5. somewhat agree 6. agree 7. strongly agree

10. A person should often do activities with his or her immediate and extended families, for example, eat meals, play games, or go somewhere together.

1. strongly disagree 2. disagree 3. somewhat disagree 4. somewhat disagree 5. somewhat agree 6. agree 7. strongly agree

11. Aging parents should live with their relatives.

1. strongly disagree 2. disagree 3. somewhat disagree 4. somewhat disagree 5. somewhat agree 6. agree 7. strongly agree

12. A person should always be expected to defend his/her family's honor no matter what the cost.

1. strongly disagree 2. disagree 3. somewhat disagree 4. somewhat disagree 5. somewhat agree 6. agree 7. strongly agree

13. Children below 18 should give almost all their earnings to their parents.

1. strongly disagree 2. disagree 3. somewhat disagree 4. somewhat disagree 5. somewhat agree 6. agree 7. strongly agree

14. Children should live with their parents until they get married.

1. strongly disagree 2. disagree 3. somewhat disagree 4. somewhat disagree 5. somewhat agree 6. agree 7. strongly agree

15. Children should obey their parents without question even if they believe that they are wrong.

1. strongly disagree 2. disagree 3. somewhat disagree 4. somewhat disagree 5. somewhat agree 6. agree 7. strongly agree

16. A person should help his or her elderly parents in times of need, for example, help financially or share a house.

1. strongly disagree 2. disagree 3. somewhat disagree 4. somewhat disagree 5. somewhat agree 6. agree 7. strongly agree

17. A person should be a good person for the sake of his/her family.

1. strongly disagree 2. disagree 3. somewhat disagree 4. somewhat disagree 5. somewhat agree 6. agree 7. strongly agree

18. A person should respect his or her older brothers and sisters regardless of their differences in views.

1. strongly disagree 2. disagree 3. somewhat disagree 4. somewhat disagree 5. somewhat agree 6. agree 7. strongly agree
Appendix G: The Machismo Measure

Please pick the response that best describes your level of agreement with each particular statement. Please answer as honestly as possible.

1=Very Strongly Disagree, 2=Disagree, 3=Somewhat disagree, 4=Neither agree or disagree, 5=Somewhat agree, 6=Agree, 7=Very Strongly Agree

1. Men are superior to women.
2. In a family, a father’s wish is law.
3. The birth of a male child is more important than a female child.
4. It is important not to be the weakest man in a group.
5. Real men never let down their guard.
6. It would be shameful for a man to cry in front of his children.
7. A man should be in control of his wife.
8. It is necessary to fight when challenged.
9. It is important for women to be beautiful.
10. The bills (electric, phone, etc.) should be in the man’s name.
11. Men must display good manners in public.
12. Men should be affectionate with their children.
13. Men should respect their elders.
14. A woman is expected to be loyal to her husband.
15. Men must exhibit fairness in all situations.
16. Men should be willing to fight to defend their family.
17. The family is more important than the individual.
18. Men hold their mothers in high regard.
19. A real man does not brag about sex.
20. Men want their children to have better lives than themselves.
Appendix H: Marianismo Beliefs Scale

Marianismo Beliefs Scale

Instructions: The statements below represent some of the different expectations for Latinas. For each statement, please mark the answer that best describes what you believe rather than what you were taught or what you actually practice.

<table>
<thead>
<tr>
<th>A Latina . . .</th>
<th>Strongly Disagree 1</th>
<th>Disagree 2</th>
<th>Agree 3</th>
<th>Strongly Agree 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ) must be a source of strength for her family.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>2. ) is considered the main source of strength of her family.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>3. ) mother must keep the family unified.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>4. ) should teach her children to be loyal to the family.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>5. ) should do things that make her family happy.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>6. ) should (should have) remain(ed) a virgin until marriage.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>7. ) should wait until after marriage to have children.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>8. ) should be pure.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>9. ) should adopt the values taught by her religion.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>10. ) should be faithful to her partner.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>11. ) should satisfy her partner's sexual needs without argument.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>12. ) should not speak out against men.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>13. ) should respect men's opinions even when she does not agree.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>14. ) should avoid saying no to people.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>15. ) should do anything a male in the family asks her to do.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>16. ) should not discuss birth control.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>17. ) should not express her needs to her partner.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>18. ) should feel guilty about telling people what she needs.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>19. ) should not talk about sex.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>20. ) should be forgiving in all aspects.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>21. ) should always be agreeable to men's decisions.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>22. ) should be the spiritual leader of the family.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>23. ) is responsible for taking family to religious services.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>24. ) is responsible for the spiritual growth of the family.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

Appendix I: Bicultural Self-Efficacy Scale

Please indicate how much you agree/ disagree with the following items by circling the corresponding number (1 – 9) that best applies. Please answer as honestly as possible.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Quite disagree</th>
<th>Disagree</th>
<th>Slightly disagree</th>
<th>Neutral</th>
<th>Slightly agree</th>
<th>Agree</th>
<th>Quite agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
</tbody>
</table>

1. I am proficient in both standard English and Spanish.  
2. It is possible for an individual to have a sense of belonging in two cultures without compromising his or her sense of cultural identity.  
3. I am knowledgeable about the gender roles and expectations of both mainstream Americans and my Mexican culture.  
4. Being bicultural does not mean I have to compromise my sense of cultural identity.  
5. I am knowledgeable about the holidays celebrated both by mainstream Americans and by people from my Mexican culture.  
6. I feel comfortable attending a gathering of mostly mainstream Americans as well as a gathering of mostly people from my Mexican culture.  
7. It is acceptable for a mainstream American individual to participate in two different cultures.  
8. An individual can alter his or her behavior to fit a particular social context.  
9. I take pride in both the mainstream American culture and my Mexican culture.  
10. I have an extensive network of mainstream Americans as well as an extensive network of people from my Mexican culture.
<table>
<thead>
<tr>
<th></th>
<th>I can communicate my feelings effectively to both mainstream Americans and people from my Mexican culture.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.</td>
<td>I have strong ties with mainstream Americans as well as people from my Mexican culture.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>13.</td>
<td>I am confident that I can learn new aspects of both the mainstream American culture and my Mexican culture.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>14.</td>
<td>I am knowledgeable about the values important to mainstream Americans as well as to my people from my Mexican culture.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>15.</td>
<td>I can develop new relationships with both mainstream Americans as well as people from my Mexican culture.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>16.</td>
<td>I can choose the degree and manner by which I affiliate with each culture.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>17.</td>
<td>I can communicate my ideas effectively to both mainstream Americans and people from my Mexican culture.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>18.</td>
<td>I feel like I fit in when I am with mainstream Americans as well as people from my Mexican culture.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>19.</td>
<td>It is acceptable for an individual from my Mexican culture to participate in two different cultures.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>20.</td>
<td>I have a generally positive attitude toward both mainstream Americans and people from my cultural group.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>21.</td>
<td>I am knowledgeable about the history of both the United States and Mexico.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>22.</td>
<td>I can count on both mainstream Americans and people from my Mexican culture.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>23.</td>
<td>I have respect for both mainstream American culture and my Mexican culture.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>24.</td>
<td>I feel at ease around both mainstream Americans and people from my Mexican culture.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>25.</td>
<td>I can switch easily between standard English and Spanish.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>26.</td>
<td>I have generally positive feelings about both my Mexican culture and mainstream American culture.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
</tbody>
</table>
Appendix J: Social Support-Friends and Adults

<table>
<thead>
<tr>
<th>Mostly true about me</th>
<th>Somewhat true about me</th>
<th>A little true about me</th>
<th>Not true about me</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

1. My friends really try to help me.
2. I can count on my friends when things go wrong.
3. I can talk about my problems with my friends.
4. In my life right now, there are adults other than my parents who care about my feelings and what happens to me.
5. In my life right now, there are adults other than my parents who would give me good suggestions and advice.
6. In my life right now, there are adults other than my parents who would help me with practical needs, like getting somewhere or help with a project.
Vita

Claudia J. Woloshchuk was born in Western Massachusetts to Michael and Wendy Woloshchuk. Claudia graduated high school from Wilbraham & Monson Academy in Massachusetts in 2013. Later that year she attended The American University in Washington, D.C. where she earned her bachelor’s degree in Psychology. She received a minor in Biology from the same university. As an undergraduate she conducted research under the mentorship of Dr. Anthony L. Riley in the Psychopharmacology Laboratory where she studied animal models of drug use, abuse and vulnerability. She pursued a summer research program in 2016 at The University of Texas at El Paso under the mentorship of Dr. Katherine M. Serafine, where she examined the effects of fish oil on high fat diet-induced enhanced sensitivity to the behavioral effects of quinpirole. In the Fall of 2018, she enrolled in the Clinical Psychology Master’s program at The University of Texas at El Paso. She joined the laboratory of Dr. Theodore V. Cooper who studies the prevention and treatment of clinical health including substance use. Her first graduate study investigated the correlations between alcohol use, marijuana use and various mental health concepts. Claudia has presented at numerous scientific conferences. She has first authored 2 and co-authored 3 publications in peer-reviewed journals such as Drug and Alcohol Dependence, Experimental and Clinical Psychopharmacology, and Journal of Ethnicity in Substance Abuse. She has additionally worked in the mental health care field as a mental health crisis specialist from 2017 to 2019 and as a practicum student at the UTEP counseling center from 2019 to 2020. Claudia will be attending The California School of Professional Psychology at Alliant International University in San Diego, CA in pursuit of her Psy.D. in Clinical Psychology starting Fall 2021.

Contact Information: cwoloshchuk@gmail.com

This Master’s Thesis was typed by Claudia J. Woloshchuk