

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

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## **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.

PREVIEW

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THESIS

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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:  $N = 283$ ,  $M_{age} = 20.86$ ,  $SD = 3.71$ , Males:  $N = 111$ ,  $M_{age} = 20.65$ ,  $SD = 3.13$ ) 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). Hierarchical 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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PREVIEW

## 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; Felitti 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, adherence 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