UNIVERSITY OF CALIFORNIA SAN DIEGO

SAN DIEGO STATE UNIVERSITY

A Sequential Mixed-Methods Study Examining Moderators and Mediators of Adverse Childhood Experiences on Alcohol Use among Latinx Young Adults

A dissertation submitted in partial satisfaction of the requirements for the degree of Doctor of Philosophy

in

Interdisciplinary Research on Substance Use

by

Sarah Jane Chavez

Committee in charge:

San Diego State University

Professor Mark Reed, Chair
Professor Harsimran Baweja
Professor Eileen Pitpitan
Professor Maria Luisa Zúñiga

University of California San Diego
Professor Laramie Smith
Professor Ryan Trim

2022

This dissertation of Sarah Jane Chavez is approved, and it is acceptable in quality and form for publication on microfilm and electronically:

_____

_____

_____

_____

_____

_____

Chair

University of California San Diego

San Diego State University

2022

TABLE OF CONTENTS

LIST OF ABBREVIATIONS

ACE	Adverse Childhood Experience
AFFECT S	Affectionate Support
ANX	Anxiety
AUD	Alcohol Use Disorder
AUD-10	Audit Total Score
AUDIT	Alcohol Use Disorders Identification Test
AUDIT-C	Alcohol Use Disorders Identification Test
CA	California
CES-DS	Center for Epidemiological Studies Depression Scale
COMP S.	Companionship Support
COVID-19	Coronavirus Disease 2019
CSU	California State University
DEPR	Depression
DUI	Driving Under the Influence
EMO/INF S.	Emotional/Information Support
GED	General Educational Development
HED	Heavy Episodic Drinking
IP	Internet Protocol Address
IPV	Intimate Partner Violence
IPH	Intimate Partner Homicide
IRB	Institutional Review Board
M	Mean
MOS-SS	Medical Outcomes Study Social Support Scale
SBIRT	Screening, Brief Intervention, and Referral to Treatment
SD	Standard Deviation
SDSU	San Diego State University
SES	Socioeconomic Status
SS Total	Social Support Total
SUD	Substance Use Disorder
TANG S.	Tangible Support
UC	University of California
UCSD	University of California, San Diego
U.S.	United States

LIST OF FIGURES

LIST OF TABLES

ACKNOWLEDGEMENTS

There is a copious amount of people that I'd like to acknowledge and thank for their encouragement and guidance throughout my doctoral studies and this dissertation. First, I would like to thank my dissertation chair Mark B. Reed for his guidance and support as my mentor in the IRSU program. You have been instrumental in both my professional and personal growth as an academic. Whether it was learning more about alcohol-specific research, new statistics, trouble-shooting study-specific obstacles, or conducting brief check-ins - you have been there every step of the way. You are a lifelong mentor, colleague, and dear friend that made this dissertation possible.

I'd also like to thank Laramie Smith for providing me with much support during the qualitative phase of my study and for always encouraging me to think more when integrating theory into my research. Additionally, thank you for fueling my passion for intervention research by integrating me into your research during my doctoral studies. As you have heard many times before, this study was designed to inform my future development of an intervention. I truly think that is now possible because of all the guidance, opportunities, and new skill sets you have provided me throughout the years.

There are also well-deserved recognitions to both Eileen Pitpitan and Ryan Trim for getting me to think more about the statistics I proposed and how to best strengthen my study. You have both provided me with many more ideas on what to do next with the data obtained from my study. I'd also like to thank Maria L. Zúñiga and Harsimran Baweja for their mentorship throughout my doctoral studies. Your mentorship and support have made this possible. Whether it was encouraging me to apply to a society, mentor/train others, network, or hold hour-long phone conversations with me to check in and debrief on life events, I appreciated all of that. I know how to be a mentor because of you.

I gratefully acknowledge the funding sources that made this project possible. First, I'd like to thank the T32 NIAAA Predoctoral Fellowship (AA013525) that protected my time during the last year of the doctoral program to conduct this study. Being a member of this fellowship continued to fuel my passion for alcohol-specific research. Thank you for all the learning opportunities; I learned a great deal from all of you. Additionally, I'd like to thank the Chancellor Doctoral Incentive Program for awarding me the Dissertation award and mini-grant award that allowed me to pay for the necessary software, and textbooks and also the incentives for all of my study participants.

To my parents, family members, friends, and my participants - this study was inspired by what we have faced and overcome ourselves. I have remained intentional in what I study and whom so that I can increase our stories and representation in the childhood adversity and alcohol-specific field. *Continuaré llevando nuestras historias hacia adelante. Gracias por confiar en mí.* To my family, all of you have watched me grow, smile, and cry as I approach these untouched waters of being a doctoral student and a principal investigator. Your support, kindness, and prayers pushed me through. *Mamá y papá, después de 12 años de universidad finalmente lo logramos. Gracias por todas sus oraciones, aliento y apoyo. He apreciado cada éxito contigo. Yo también he llorado contigo cada rechazo. Nunca me has fallado durante este proceso. Este proyecto es mi historia de amor para ti.*

Chapter 2, "Let's Talk about the "Other" Adversities Experienced by Second-Generation Latinx Populations and the Social Support Wanted" is currently being prepared for publication. Mark B. Reed, Laramie Smith, Maria Luisa Zúñiga, Eileen Pitpitan, Ryan Trim, and Harsimran Baweja are co-authors.

Chapter 3, “Investigating whether Social Support Subtypes Moderate the Relationship between ACEs and Risky Drinking among Latinx Young Adults” is currently being prepared for publication. Mark B. Reed, Laramie Smith, Maria Luisa Zúñiga, Eileen Pitpitan, Ryan Trim, and Harsimran Baweja are co-authors.

Chapter 4, “Investigating whether Depression and Anxiety Mediate the Relationship between ACEs and Risky Drinking among Latinx Young Adults” is currently being prepared for publication. Mark B. Reed, Laramie Smith, Maria Luisa Zúñiga, Eileen Pitpitan, Ryan Trim, and Harsimran Baweja are co-authors.

VITA

2022	Doctor of Philosophy in Interdisciplinary Research on Substance Use University of California San Diego San Diego State University
2018	Master of Arts in Clinical Psychology California State University Northridge
2016	Bachelor of Arts in Psychology University of Redlands
2013	Associates of Arts in Social and Behavioral Sciences Norco Community College

PUBLICATIONS

Reed, M.B., Woodruff, S.I., DeMers, G., Matteucci, M., **Chavez**, S.J., Holt, M., & Hurtado, S.L. (2021). Results of a randomized pilot test trial of SBIRT to reduce alcohol misuse among active-duty members in a military ER setting. *Journal of Studies on Alcohol and Drugs*.

Chavez, S.J. (2018). The Impact of Race/Ethnicity, Neighborhood, and Parental Influences on Youth Mental Health Status and Service Use. Master's Thesis, 2018

ABSTRACT OF THE DISSERTATION

A Sequential Mixed-Methods Study Examining Moderators and Mediators of Adverse Childhood Experiences on Alcohol Use among Latinx Young Adults

by

Sarah Jane Chavez

Doctor of Philosophy in Interdisciplinary Research on Substance Use

University of California San Diego, 2022

San Diego State University, 2022

Dr. Mark B. Reed, Chair

Background: The Adverse Childhood Experience (ACE) Questionnaire has been used to establish the relationship between ACEs and alcohol use among Latinx populations. This scale was developed using predominantly non-Latinx White samples; applying this scale to Latinx groups is problematic as diverse adversities have not been considered. Furthermore, scant research explores variables that moderate or mediate the relationship between ACEs and risky drinking among second-generation Latinx young adults. Guided by the Stress-Buffering Hypothesis and Stress and Negative Affect Model, this project aimed to elucidate these gaps.

Methods: A exploratory sequential mixed methods study was developed to examine these gaps. Participants were recruited between August 2021-August 2022. **AIM 1 (Chapter 2)** used a qualitative methodological approach to explore childhood adversities experienced by Latinx young adults, and social support needs wanted during the adversity (n=20). **AIM 2 (Chapter 3)** tested moderating effects of social support types on the relationship between ACEs and risky drinking in a sample of second-generation Latinx young adults (n=143). **AIM 3 (Chapter 4)** tested whether depression and anxiety mediated this relationship.

Results: Aim 1: Themes that surfaced include enduring financial insecurity, taking on adult-like responsibilities, witnessing community violence, food insecurity, deportation-related adversity, racism-related adversity, housing instability, and being bullied. Participants reported wanting emotional, instrumental, informational support in addition to individual therapy during the adversity. **Aim 2:** Multiple hierarchical linear regression analyses showed a positive association between ACEs and risky drinking (AUDIT total score, AUDIT-C, Heavy Episodic Drinking). Only emotional/information support significantly moderated the relationship between ACEs and risky drinking (AUDIT total); this effect was opposite of what was predicted. Specifically, emotional/information support strengthened the relationship between ACEs and risky drinking **Aim 3:** Mediation analyses showed positive associations between ACEs, depression, and risky drinking as measured by the AUDIT. Depression partially mediated the relationship between ACEs and risky drinking (AUDIT total score). Significant effects were not observed for other measures of risky drinking or other models investigated.

Conclusions: The findings support the need to enhance the ACE scale and develop interventions focused on mental health to reduce risky drinking behaviors among this group of individuals

CHAPTER 1: INTRODUCTION

OVERVIEW

Latinx young adults have the second-highest rates of alcohol use (42.5%) and heavy episodic drinking (HED) (25.7%) compared to non-Latinx White adults who report the highest rates of use and HED.[1] Despite non-Latinx white adults reporting higher alcohol consumption and HED, Latinx populations face a multitude of alcohol-related disparities that affect the health and welfare of this population. For instance, Latinx youth consume alcohol younger than other racial/ethnic groups.[2,3] For example, findings from 2018 Monitoring the Future Survey indicate that 26.8% of Latinx 8th graders reported lifetime alcohol consumption compared to 21.5% and 19.6% non-Latinx white and African American same-age youth.[2,3]

In addition, Latinx adults are less likely to seek or obtain alcohol and substance use treatment once an alcohol use disorder (AUD) or a substance use disorder has developed.[4] This is often because Latinx populations face structural and social barriers that prevent help-seeking behaviors towards alcohol use and substance use concerns. These barriers contribute to the substance use treatment disparities observed for this group.[4] Such barriers are not limited to but include a low perceived need of help,[4] stigma,[5] access to health insurance,[6,7] cost,[7] and language barriers.[8]

These early alcohol initiation rates and treatment disparities place Latinx individuals at a higher risk for developing an AUD as well as alcohol-related social and health consequences.[2,9–12] For instance, Latinx populations develop more chronic alcohol liver diseases than other racial and ethnic groups in the U.S.[13] and they encounter more deaths due to driving under the influence than other racial/ethnic groups.[11,12] Latinx adults are also at risk of developing relational and legal consequences due to alcohol intoxication. For example, alcohol has been

associated with intimate partner violence (IPV) and intimate partner homicide (IPH)[14,15] and Latina adults are more at risk of encountering both IPV and IPH than non-Latinx White women.[14,15] Latinx adults are also more likely to get arrested for driving under the influence, which can result in significant legal consequences.[11,12] Demographers have predicted that the Latinx community will make up one-third of the U.S. population by 2060.[16] Thus, this population growth may amplify existing alcohol-related health and social consequences and lack of treatment opportunities, widening health disparities in this group.

Research has shown a positive association between adverse childhood experiences (ACESs), alcohol use,[16] and AUDs,[17,18] across many populations, including Latinx.[16] ACEs are childhood events occurring in one's family / social environment that may vary in mental distress and physical severity.[19–22] Experiencing ACEs is not uncommon for Latinx youth. Researchers have found youth from underrepresented groups experience more ACEs than non-Latinx White youth.[23–25] For example, Latinx families experience higher rates of household AUDs compared to non-Latinx White and African American families[23] and experience higher rates of familial incarceration compared to non-Latinx Whites.[26] Given the association between ACEs and alcohol use, Latinx youth may have an increased risk of developing alcohol misuse problems later in life.

Although studies have shown the positive relationship between ACEs, alcohol use,[16]**,** and AUDs, [17,18] studies have not attempted to explore and characterize the ACEs experienced among Latinx young adults nor sought to explore what social support was received/wanted at the time of the adversity. Most ACE studies, specific to Latinx populations, have utilized the same 10-item measure, the Adverse Childhood Experience Questionnaire.[27] Researchers have criticized the ACE measure as it was developed using predominantly non-Latinx White

participants.[28,29] One qualitative study found that African American and Latinx youth experienced other adverse childhood hardships compared to what is measured in the Adverse Childhood Experience Questionnaire.[30] This study had limitations that precluded any definitive conclusions. Regardless, a culturally enhanced ACE scale has not been developed, which is needed in the future to reassess the ACE and alcohol association among Latinx young adults.

In addition to the ACE questionnaire limitations, few studies have investigated what factors might blunt or buffer the association between ACEs and risky drinking. Social support is defined as having friends and family members to lean on during a time of need.[31] Social support may buffer the existing relationship between ACEs and risky drinking as it has buffered other existing associations such as the relationship between victimization and depressive symptomatology in Latinx populations.[32] To date, only one study has tested whether social support buffers or moderates the relationship between ACEs and alcohol use in a Latinx subsample.[33] Although the study results did not support the buffering role of social support on the relationship between ACEs and alcohol use, there was a multitude of study limitations precluding any definitive conclusions. Furthermore, there is no existing research which tests whether depression and anxiety mediates or explains the relationship between ACEs and risky drinking among Latinx young adults. Because studies have found evidence of an association between ACEs and depression as well as ACEs and anxiety in non-Latinx and Latinx populations, investigating such mediators is necessary because U.S. Latinx populations are also heavily burdened with high rates of depression and anxiety.[34] Members of the Latinx community experience more ACEs, use alcohol at an earlier age, engage in high rates of HED, experience substance use treatment disparities, and suffer from high rates of anxiety and depression; thus,

there is a critical need to identify factors that could be leveraged for interventions designed to reduce harmful alcohol use in this community.

To address these gaps in the literature, the **primary goals** of this research are to further explore what other negative childhood hardships are experienced by Latinx community members and to determine whether social support moderates and depression/anxiety mediates the relationship between ACEs and risky drinking in Latinx young adults. The long-term goal of this research was to obtain information that would help develop a trauma-informed, Latinx alcohol-specific intervention aimed at strengthening social support among those experiencing ACEs as a method of reducing alcohol use in this population. The specific aims of this research are to **1)** Explore what negative childhood hardships were experienced by Latinx young adults, **1b)** Explore what types and sources of social support were needed at the time of their adversity, **2)** test whether social support subtypes independently moderate the relationship between ACE score and risky drinking among Latinx young adults, and **3)** test whether depression and anxiety independently mediates, or partially mediates, the relationship between ACE score and risky drinking among Latinx young adults. The results of these studies have the potential to support the need to 1) enhance the ACE questionnaire and 2) develop an intervention aimed at reducing risky drinking among Latinx young adults by integrating social support and mental health components.

An exploratory sequential mixed-methods study was conceptualized, designed, and executed to obtain the necessary data to meet these aims. The first phase of the research study analyzed qualitative data from 20 Latinx young adults, ages 19-24, who were recruited using paid Instagram promotion techniques between August 2021-October 2021 (AIM 1). Participants who were interviewed resided across various cities in California. The second phase of this

research (AIMS 2-3) analyzed quantitative data from 143 Latinx young adults living in California, ages 19-30, who were recruited using a variety of methods, including passing out and posting fliers across the San Diego State University campus and Latinx-concentrated communities, community college listservs, Latinx-specific listservs, and college campus Latinx Resource Centers between January 2022 and August 2022.

BACKGROUND

Latinx Adults and Alcohol Use

Although Latinx adults generally abstain from consuming alcohol (31.8%) compared to non-Latinx White adults (15.5%), Latinx who drink are more likely to consume alcohol at higher volumes.[35,36] For example, recent data shows a higher percentage of Latinx drinkers reported drinking 3+ alcoholic beverages per usual drinking day (42.4%) compared to non-Latinx White adults (31.6%).[37] Latinx individuals from specific countries are also at an increased risk for consuming more significant amounts of alcohol.[37] For instance, the average number of drinks per week is most notable among Puerto Rican males (16.9) and females (9.5), followed by Mexican males (15.9) and females (3.0) compared to Cuban males (8.4) and females (3.4).[37] In 2018, nearly half (48.9%) of Latinx young adults, ages 18 to 25, reported consuming alcohol within the past month[1] compared to Asian/Native Hawaiians and other Pacific Islanders (43.9%)[38] and African Americans (43.1%).[39] Furthermore, approximately 9.4% of Latinx Americans between the ages of 18 and 25, were diagnosed with an AUD[1] compared to 5.6% of African Americans.[39] These statistics indicate the need to investigate further what is driving these alcohol use rates in this population and what factors could be leveraged to reduce alcohol use in this group of Americans.

Generation Status and Alcohol Use in Latinx

Second-generation Latinx populations (e.g., Latinx individuals born in the U.S. but have at least one immigrant parent) have a higher risk for developing problematic drinking and drug using behaviors compared to Latinx immigrant populations.[40] This could be attributed to the fact that second-generation Latinx individuals often develop similar patterns of substance use behaviors from non-Mexican-American peers through individual processes of acculturation.[37,40–42] The higher alcohol use rates among second-generation Latinx adults supports the need to focus on this subgroup for research conducted in these studies.

Alcohol-Related Consequences among Latinx Populations

Latinx individuals experience more alcohol-related consequences than non-Latinx White individuals as studies have found that Latinx adults often have higher rates of alcohol-related morbidity and mortality than other racial or ethnic groups.[43] For example, chronic alcoholic liver disease is more prevalent among Latinx individuals with 16.9 cases out of 100,000 compared to non-Latinx Whites (11.1), African Americans (9.9), American Indians (9.9), and Asians (2.2).[44,45] This is likely a result of Latinx adults consuming more significant amounts of alcohol per month and consuming large amounts of alcohol for extended periods of time.[9,45] Furthermore, compared to non-Latinx White male adults, Latinx males, with the exception of Cubans, had higher cirrhosis mortality rates illustrating another disparity in alcohol-related conseuqneces.[10,45]

Latinx adults also suffer disproportionately from alcohol-related traffic accidents. According to a report on traffic safety among Latinx adults in California, alcohol-involved fatal car collisions are highest among young Latino males between the ages of 20-35 and over 55 compared to other racial or ethnic groups.[11] Moreover, research has also shown alcohol-related

driving deaths are highest among Latinx populations across all age and racial and ethnic groups.[46,47] The Annual Report of the California Driving Under the Influence Management Information System stated Latinx drivers are also disproportionately arrested for alcohol-related DUIs.[12] It is critical to note, however, that a higher percentage of arrests could be explained by biased policing where police officers are pulling over a disproportionate number of Latinx drivers compared to non-Latinx White drivers.[12]

Latinx young adults also have a higher likelihood of experiencing alcohol-related employment consequences as a result of the alcohol-related treatment barriers experienced by this population.[48] Studies have found that alcohol misuse and dependence can lead to personal harm within the workplace, work absenteeism, reduced work performance and safety, poor co-worker relations, and job loss.[49–51] Additional alcohol-related costs include societal and relational consequences. For example, nearly 1 in 6 Latinas experience IPV.[14] This is an important issue given that 80% of IPV perpetrators use alcohol, and the risk of violence after alcohol consumption is 10 times greater for those with an AUD in the general population.[52] Moreover, many alcohol-related deaths have been attributed to IPH.[53] Various studies have shown alcohol-involved homicidal prevalence rates to be the highest among Latinx populations.[53,54] One study found that when the victim was female, the odds of IPH were 70.5 times greater for Latinas compared to non-Latinx White women (27-times) and African American women (32.7-times).[15,53] It is apparent that Latinx adults experience more significant alcohol-related consequences than other racial/ethnic groups. Because of these alcohol-related health and social impacts, it is imperative to explore and develop methods to reduce harmful alcohol consumption in this population.

Adverse Childhood Experiences (ACEs) among Latinx Populations

Adverse childhood experiences are events that occur before the age of 18 in one's familial and social environment.[55] The ACEs may differ in severity and have the potential to cause long-lasting harm and distress to the individual across many different stages of development.[55] Several examples of ACEs include experiencing neglect, household dysfunction, and/or parental separation/divorce.[55] Early research studies indicated the critical associations between childhood experiences of abuse, neglect, and household dysfunction with later development of physical and mental health problems.[27,28] A multitude of population-based studies have established this association and have shown relationships between ACEs and a clinical diagnosis of alcohol and substance use disorders,[17,18] depression,[56,57] and anxiety.[58]

Researchers have demonstrated that Latinx and African American populations encounter more ACEs than non-Latinx Whites.[23,25] One study illustrated that 10.92% of Latinx adults experienced more household mental illness during their childhood compared to African Americans (8.80%) and non-Latinx Whites (9.86%).[25] This is a significant finding as studies have shown how parental figures with mental illnesses have a greater chance of becoming involved with child welfare services than parental figures without mental illnesses.[59,60] Additionally, children who live with parental figures who have underlying mental health conditions have a 50% chance of developing a mental health disorder in the future, such as anxiety, depression, or substance use disorder.[61] Compared to African Americans (25.99%) and non-Latinx Whites (22.18%), Latinx individuals experience the highest rates of alcohol use disorders in the home in the form of a caregiver or parent (28.43%).[23]

Household drug abuse is also highest among Latinx individuals (15.21%) compared to non-Latinx White adults (8.95%).[23] This is problematic as familial substance use has been linked with greater externalizing and internalizing problems among youth whose parents are dependent

on other drugs.[62] These realities place Latinx children and adolescents at a higher risk for developing a substance use disorder, AUD, depressive disorder, and posttraumatic stress disorder.[61,62]

Furthermore, Latinx youth experience more emotional abuse (37.48%) compared to non-Latinx White (35.81%) and African American youth (32.55%).[23] A study illustrated that children are more likely to be emotionally abused by drug-abusing Latina mothers.[63,64] This, too, poses a problem as emotional abuse has the potential to create stress, affect one's mental health, and has been strongly linked with suicidal ideation and suicidal attempts.[63,64] Additionally, physical abuse is also highest among Latinx individuals.[23] One study found that 24.42% of Latinx adults experienced physical abuse during their childhood compared to 17.24% of African Americans and 15.77% of non-Latinx Whites.[23] Longitudinal studies have also shown that experiencing physical abuse as a child significantly increases the risk of using both licit and illicit substances later in life.[65]

In a research study comparing childhood adversities across 22,297 children and youth of different racial/ethnic backgrounds, results illustrated second-generation Latinx children and youth had a greater risk of encountering at least one ACE (33%) compared to first-generation (32%), and third-generation Latinx youth (30%).[66] Once 2+ ACEs were measured across multiple generational statuses, the third-or-higher generation, nonimmigrant Latinx children experienced more childhood adversities (17%) compared to second (10%), and first-generation Latinx youth (12%).[66] These results support the immigrant paradox, which states immigrants, who are typically low SES, experience better-than-expected health and mortality outcomes.[67] Regardless, second-generation Latinx young adults are more at risk for having less access to

treatment and for engaging in heavy episodic drinking; two major points underscoring the importance of the present set of empirical studies.

For decades, research has shown the association between ACEs, alcohol use, [23] alcohol abuse,[68], and AUDs across multiple racial and ethnic groups, including the Latinx population.[23] For example, in a Latinx-specific ACE study that included data from 5,117 adults, results showed a strong association between ACEs and alcohol use.[33] However, the alcohol use measure included in this study asked participants to report their drinking status (e.g., "never," "previous," or "current") rather than drinking quantity or frequency. Furthermore, a measure of risky drinking was not included. Thus, this study could not determine whether the relationship between ACEs and alcohol use is dose-dependent or if ACEs are associated with riskier drinking behaviors.[69] The results of a different study were comparable; however, the participant sample contained fewer Latinx participants (e.g., the sample was mainly older non-Latinx White adults).[23,40] Furthermore, this study did not include generational status, which is an important factor to consider in studies investigating Latinx alcohol use.[23,40]

Recently, a Latinx-specific ACE and alcohol use study found a similar dose-related relationship between ACEs and alcohol use. [16] Specifically, Latinx participants with 3+ ACEs were eight times greater to have an alcohol or substance abuse problem compared to Latinx participants with 0 ACEs.[16] Despite its unique findings, this sample was comprised of rural Latinx adults.[16] This is a significant limitation as past studies have found rates of alcohol use are typically higher among urban Latinx residents than rural Latinx residents.[70]

Limitations of the Adverse Experience Questionnaire

Although there are different limitations across many of the ACE and alcohol-related association studies specific to Latinx individuals, one consistent limitation is how adverse

childhood experiences are measured. Specifically, although the Adverse Childhood Experience Questionnaire[27] is often used with participants from diverse racial/ethnic backgrounds, there was limited diversity in the sample used during the development of the ACE questionnaire.[27] Specifically, the data that was used to develop the 10-item ACE questionnaire was collected from an insured and predominantly non-Latinx White group of participants who were recruited from Kaiser Permanente's San Diego Health Appraisal Clinic.[27] Specifically, of the nearly 9,000 Kaiser Health Plan members who were eligible to participate in the study, approximately 80% were non-Latinx White, 43% were college-educated, and all were insured.[27] Although the first ACE study in 1998 was ground-breaking and led to almost 800 publications by 2018, the ACE measure is often applied to racial/ethnic groups for which the standard measure was not developed.[56,71,72]

Recently, studies have attempted to expand on the ACE measure by conducting research that includes diverse populations. One study attempted to expand on the ACE questionnaire by including a sizable sample of low-income women who obtained home visiting services in Wisconsin.[73] Data obtained from Wisconsin's Family Home Visiting Program uncovered how participants experienced other childhood adversities not captured by the ACE Questionnaire.[73] Several childhood adversities that were experienced by this particular sample included housing instability, financial problems, food insecurity, parental absence, familial death, peer victimization, and encountering being the victim of a violent crime.[73] Except for experiencing familial death, all childhood adversities were further associated with outcomes such as smoking and perceived stress.[73] Although this research included low-income women, the sample had a limited selection of Latinx women and did not include men.[73] The findings of this study highlight

the importance of expanding on the childhood adversities experiences included in the original ACE Questionnaire.

In a separate study that utilized qualitative methods, researchers attempted to identify the range of childhood adversities faced by low-income young adults who resided in a low-income area within Philadelphia.[30] A total of 17 content-generating focus groups with 105 participants were conducted.[30] Some of the childhood adversities that surfaced from the focus groups included having negative experiences with familial relationships, peer relationships, encountering financial hardships, personal victimization, community stressors, discrimination, and experiences with the juvenile justice system and child welfare services.[30] Despite these findings, there were several limitations to this research as well. First, collecting information from participants in focus groups may have prohibited participants from discussing sensitive topics specific to abuse, sexual orientation-based discrimination, racism, and other types of victimization.[30] Additionally, the sample included a larger sample of African American participants (60%) and only 10% Latinx young adult participants.[30] Regardless of these limitations, this study significantly contributed to the needed research to include childhood experiences lived by individuals in underserved, minoritized communities in measures of adverse childhood experiences.

Social Support and Its Potential in Reducing the ACE and Alcohol Use Relationship

Even though Latinx individuals are more likely to abstain from consuming alcohol than non-Latinx White individuals, Latinx individuals still consume the highest amount of alcohol once consumption has begun.[36,37] This is problematic because Latinx individuals suffer from more alcohol-related consequences [46,47] in addition to experiencing significant barriers to alcohol and substance use treatment when needed.[6] For decades, these consequences and barriers have

been deeply rooted in the systemic oppression transcending Latinx families. Thus, it is imperative to study what factors might mitigate or buffer the existing effect of early childhood adversity on risky drinking into adulthood.

One factor, social support, has been shown to be an important mechanism mitigating the negative effects of victimization as well as depression. For example, one study found that peer social support buffered the association between relational victimization and depressive symptomatology among Latinx populations.[32] Additionally, a different study found familial social support decreased depression and perceived stress among first-generation Latinx college students.[74] To date, only one study investigated whether social support buffers the relationship between ACEs and alcohol use among Latinx adults.[33] Results from this research indicated social support did not buffer this relationship; however, the social support scale that was utilized in the study was not comprehensive enough, nor did they measure types of social support such as positive interaction and informational support.[31] In addition to these limitations, the investigators did not measure risky drinking, quantity, nor frequency of alcohol consumption.[33] Researchers have yet to investigate how multiple social support subtypes impact the relationship between ACEs and risky drinking. Multiple types of social support, such as emotional support, informational support, instrumental support, and social companionship, are said to buffer the existing relationships between a stressful life event and a psychological or behavioral outcome according to the Stress-Buffering Hypothesis.[75]

Given the importance of developing tailored interventions to reduce risky drinking in young adult, Latinx populations that leverage cultural concepts that resonate better with this population, it is critical to test whether social support moderates the relationship between ACEs and risky drinking.

Does Depression and Anxiety Mediate the ACE and Alcohol Use Relationship?

In addition to testing the attenuating role of social support in the association between ACEs and risky drinking, it is also critical to test what factors may explain this relationship as a means of developing tailored, trauma-informed alcohol-specific interventions for Latinx young adults. In particular, it is essential to investigate whether mental health symptomatology explains the relationship between ACEs and risky drinking.

In addition to enduring high rates of ACEs during their childhood and high alcohol-related morbidity and mortality rates during their adulthood, second-generation Latinx young adults are also heavily burdened with higher depression rates (8.6%) compared to non-Latinx Whites (7.9%) and Asian Americans (3.1%).[76] Moreover, Latinx adults have the second-highest anxiety rates (8.8%) compared to African Americans (8.6%) and Asian Americans (5.6%).[77] Once again, these rates of mental health diagnoses are highly problematic as Latinx individuals are less likely to obtain mental health treatment services due to similar individual and systemic barriers that prevent them from seeking specialized treatment for an AUD or SUD.[78]

Researchers have demonstrated multiple relationships between ACEs with alcohol use, depression, and anxiety in the Latinx population.[16,23,25,33] However, the question remains, are depression and anxiety symptomatology the underlying mechanisms that explains the association between ACEs and risky drinking in this population? If so, this would support the Stress and Negative Affect Model which states alcohol and substance use behaviors are in response to reducing any potential negative emotions likely caused by a stressor.[79] To date, only one recent study tested whether mood and anxiety disorders explain the relationship between ACEs and substance use disorders among non-Latinx, African Americans, and Latinx adult subgroups.[80] This study found childhood abuse or exposure to violence was positively associated with both the number of lifetime mood and anxiety disorders and substance dependence risk.[80] Most

importantly, the study found mood and anxiety disorders partially mediated the relationship between ACEs and substance dependence.[80] However, the sample of this study was primarily non-Latinx White (39%) and African American (53%).[80]

CONCEPTUAL FRAMEWORK

According to the Stress-Buffering Hypothesis, any mild to severe stressor experienced is likely associated with reduced well-being and negative behavioral health outcomes.[75] Study AIMs 2 was guided by the Stress-Buffering Hypothesis, where experienced ACEs maps onto the "stressor" construct, and risky drinking, depression, and anxiety map onto the "reduced well-being and negative behavioral health outcome" construct of this framework. In this framework, four forms of social support have been theorized to buffer the relationship between stressors and mental and behavioral health outcomes.[75] These four forms of social support are: Emotional Support-where an individual feels accepted and esteemed despite any existing individual flaws;[75,81] Informational support-aiding others in defining, understanding, and helping an individual cope with a problematic event that may be perceived as stressful;[75,81] Social companionship-entails spending quality time with others to reduce perceived stress;[75,81] Instrumental support-aiding, financially or materialistically, to help reduce perceived stress and its potential adverse outcomes.[75,81] In this dissertation, it is critical to distinguish the multiple social support subtypes as social support can be defined or experienced differently by individuals. Research for AIM 2 helped determine what social support subtypes worked and did not work when considering ACEs and risky drinking outcomes.

This dissertation was also guided by the Stress and Negative Affect Model. According to the Stress and Negative Affect Model, alcohol and substance use behaviors are in response to attempting to reduce any negative affect caused by an experienced stressor.[79] Study AIMs 3 was

guided by the Stress and Negative Affect Model where ACEs map onto the "stressor" and risky drinking maps onto the "substance use behavior." Additionally, depression and anxiety mapped onto the "negative affect" construct from this theory.

AIMS AND HYPOTHESES

The proposed research study used an exploratory sequential mixed methods design to meet the three proposed aims and hypotheses. The qualitative and quantitative methods were designed to assess the following aims and corresponding hypotheses:

AIM 1: Explore the types of childhood adversities experienced by Latinx young adults. Aim 1 utilized a semi-structured interview guide to explore what diverse childhood adversities have been experienced among Californian second-generation Latinx young adults between the ages of 19 and 24.

AIM 1b: Explore what types and sources of social support were needed at the time of their childhood adversity. Aim 1b utilized a semi-structured interview guide to explore what social support was needed during recalled childhood adversity among Californian second-generation Latinx young adults between the ages of 19 and 24.

AIM 2: Test whether social support subtypes independently moderate the relationship between ACE scores on risky drinking among Latinx young adults. Aim 2 included one predictor variable: an ACE score derived from the Adverse Childhood Experience Questionnaire [27] and multiple outcome variables: AUDIT total score, AUDIT-C, and the HED questionnaire item. All outcomes derived from the Alcohol Use Disorder Identification Test.[82] Moderators that were measured included: Social Support total score, Emotional/Informational Support, Tangible Support, Positive Interaction, and Affection which derived from the Medical

Outcomes Study Social Support Survey.[83] Covariates included participant age, gender, origin, level of education, income, employment, and marital status.[16]

Hypothesis 2a-d: A positive association between ACEs and risky drinking will have a smaller slope, indicating a weaker association, among Latinx participants who have higher levels of **1)** social support total score, **2)** emotional/informational support, **3)** tangible support, **4)** positive interaction, and **5)** affection compared to Latinx participants with lower levels of these four constructs.

AIM 3: Test whether depression and anxiety independently mediate or partially mediate the relationship between ACE scores on risky drinking among Latinx young adults. Aim 3 included one predictor variable: an ACE score derived from the Adverse Childhood Experience Questionnaire [27] and multiple outcome variables: AUDIT total score, AUDIT-C, and the HED questionnaire item. All outcomes derived from the Alcohol Use Disorder Identification Test.[82] Mediators included depression symptomatology, measured by the Patient Health Questionnaire,[84] and anxiety symptomatology measured by the Generalized Anxiety Disorder Screener.[85] Covariates included participant age, gender, origin, level of education, income, employment, and marital status.[16]

Hypothesis 3a-b: The relationship between ACE score and risky drinking will be fully or partially mediated by more significant **1)** depressive symptoms and **2)** anxiety symptoms among Latinx young adults.

CHAPTER 2: Let's Talk about the "Other" Adversities Experienced by Second-Generation Latinx Populations and the Social Support Wanted

ABSTRACT

Background: Studies have used the Adverse Childhood Experience (ACE) Questionnaire, a 10-item scale used to assess childhood adversity. However, the ACE scale does not include diverse childhood adversities such as experiences of racism, community violence, and familial deportations which are often faced by Latinx children. Additionally, there are no studies that have explored the social support needs of Latinx children and youth at the time of experienced childhood adversity.

Methods: I conducted a qualitative study to inform future ACE research among Latinx young adults. Participants (N=20) identified as Latinx young adults and were between the ages of 19 and 24. Participants were interviewed via Zoom between August 2021 and October 2021 and were recruited using Instagram paid advertising techniques. A trauma-informed semi-structured interview was developed to explore topics specific to childhood adversity, emotions experienced during lived adversities, coping strategies, and desired social support. Demographic data was collected during the interview. This paper will discuss the findings pertaining to the adversities experienced and the social support wanted at the time of the adversity.

Results: Among the participants, 55% were female, 35% were male, and 10% identified as non-binary. The average age of the participants was 22 years of age. Adversities that were experienced were specific to financial insecurity, taking on adult-like responsibilities, witnessing community violence, food insecurity, deportation-related adversity, racism-related adversity, housing instability, and being the victim of bullying. Most of the participants wanted social support, specifically emotional, instrumental, and informational support. In terms of social support sources, many participants shared their desire of wanting individual therapy at the time

of the experienced adversity. Barriers to seeking social support was also a finding seen in this study. Many participants shared that they did not seek support from others because they were either afraid of encountering child protective services or they did not want to burden their parents or had internalized stigma around seeking support.

Discussion: These findings demonstrate the need to create a culturally tailored ACE inventory that accounts for adversities experienced by Latinx individuals. Additionally, these findings suggest the need to increase mental health receipt in addition to providing emotional, instrumental, and informational support to help Latinx children and youth who may be facing the adversities discussed in this study.

INTRODUCTION

Adverse childhood experiences (ACEs) refer to events occurring before the age of 18 in one's social and/or family environment that vary in severity and have the potential to cause long-lasting harm or distress at various stages of development.[55] Several examples of ACEs, based on the 10-item Adverse Childhood Experience Questionnaire,[27] include experiencing childhood neglect, physical abuse, household dysfunction, and/or familial incarceration, among other adversities. Population-based studies confirmed ACEs are associated with alcohol and substance use disorders,[17,18] depression,[56] anxiety[57], and other adverse physical health outcomes.

Latinx populations experience more ACEs than non-Latinx White individuals.[23,25] Latinx adults have the highest rates in some ACEs compared to African Americans and non-Latinx White individuals. For example, Latinx adults experienced more household mental illness (10.92%) compared to African American adults (8.80%) and non-Latinx White adults (9.86%).[25] In that order, Latinx adults also experienced more household alcohol use disorders (28.43% vs. 25.99% vs. 22.18%), emotional abuse (37.48% vs. 32.55% vs. 35.81%), and physical abuse (24.42% vs. 17.24% vs. 15.77%) compared to African American and non-Latinx White adults.[23] These higher rates of ACEs place Latinx individuals at an increased risk for developing adverse mental and physical health outcomes compared to other racial/ethnic backgrounds.

Although these statistics demonstrate a racial/ethnic disparity in who experiences more ACE outcomes, *how* ACEs have been investigated in the scientific literature reveals a critical limitation. Specifically, the ACE assessment tool was developed using a population of study participants that may not reflect the lived experience of people of color, specifically Latinx populations. This limitation is rooted in the sampling used to create the ACE questionnaire. The 10-item ACE questionnaire was developed utilizing data from a sample who were all insured, predominantly non-Latinx White (80%), college-educated (43%), and recruited from Kaiser

Permanente's San Diego Health Appraisal Clinic.[27] Although numerous ACE studies have helped to increase our understanding of the long-term impact of ACEs on adverse health outcomes [56,72] and contributed to over 800 publications in this area of research[71], the ACE measure does not include other adversities people of color often experience. Such adverse experiences may include having a family member deported or encountering frequent financial problems.

Research studies have attempted to explore what other childhood adversities have been experienced among diverse populations by conducting research that included diverse populations. In one study, researchers administered the conventional adverse childhood experiences scale and assessed for other childhood adversities from participants who were partaking in Wisconsin's Family Home Visiting Program.[73] Questionnaires were quantitatively evaluated by researchers.[73] This study found that participants endorsed additional adverse events during their childhood, such as food insecurity, housing instability, and financial problems, among others.[73] Several limitations of the study included the study assessing adversities in a sample of low-income women where a small sample of Latinx women was queried about their childhood adversities.[73] Men were excluded from this study.[73] Regardless of these limitations, the findings of this study underscored the importance of expanding on the adversities experienced by racial/ethnic groups through the inclusion of different childhood adversities.

A qualitative study with young adult participants who were primarily non-Hispanic Whites or non-Hispanic Black, who grew up in the Philadelphia neighborhoods as a youth, identified a different range of childhood adversities experienced that were not included in the ACE questionnaire.[30] These adversities included personal victimization, community stressors, discrimination, experiences with the child welfare system, and experiences with the juvenile

justice system.[30] The ACE questionnaire is often applied in research with racial/ethnic populations. Although many racial/ethnic groups may experience adversities listed in the original ACE questionnaire, the ACEs may be underreported in diverse populations because other adversities, such as those found in this study, are not being measured. The results obtained from this research are informative but also underscore the necessity of including adversities experienced by diverse individuals. Despite these findings, there were several critical limitations to the study. For example, data was collected from focus groups which may have prevented participants from discussing sensitive topics such as lived experiences with abuse, sexual orientation-based discrimination, racism, and other types of victimization. Perhaps most pertinent to expanding knowledge of ACEs in the Latinx population, only 13 participants (of a sample of 105 participants), identified as Latinx young adults.[30] This likely contributed to not capturing a full range of specific adversities typically experienced by Latinx young adults (e.g., deportation or fear of having a parent deported) that were not observed in this research.

Multiple quantitative and qualitative studies have addressed the need to expand the ACE measure to include more lived experiences of minoritized populations that have not been captured in most ACE-related research. The continuous use of the ACE measure, which does not capture the unique experiences of Latinx (or other people of color) individuals, continues to be problematic. There are missed opportunities in investigating the true association between childhood adversities and other health outcomes among Latinx individuals if researchers continue to apply the standard ACE measure while investigating specific health-related outcomes. When researchers fail to include these diverse adversities, the development of successful prevention efforts to equip Latinx youth with skills to navigate inevitable adversities could be stalled.

The present study departs from the status quo by qualitatively assessing childhood adversities in a sample of Latinx young adults so that new ACE scales can be developed in the future that appropriately include childhood adversities experienced by more diverse samples and populations. A secondary aim of this research study is to provide information on what types and sources of social support were wanted at the time of the experienced adversity. Exploring what social support was desired is critical as past research has confirmed that Latinx young adults have experienced more childhood adversities compared to non-Latinx White young adults.[22,24] Information regarding the social support needs of Latinx children and adolescents who experience childhood events has not been investigated in the literature. This area of research is essential because it has the potential to inform researchers, practitioners, and caregivers on where to allocate the necessary support for this group of young people.

METHODS

Sampling and Recruitment

The findings from this study derived from an exploratory sequential mixed methods parent project. For the qualitative phase of the overall parent project, I promoted a recruitment flier to recruit Latinx young adults on a social media platform, Instagram. The recruitment flier contained information specific to the purpose of the study, eligibility, and my academic contact information. The recruitment photograph post included a description of the research and further guidance to help prospective participants click a questionnaire link in the Bio section of the Instagram Profile. The questionnaire link was necessary for all participants to partake before interviewing as it determined eligibility.

The recruitment flier linked prospective participants to an eligibility questionnaire. Inclusion criteria included people who **1)** identify as second-generation Latinx, **2)** reside within

California, **3)** are between the ages of 19 and 24, and **4)** have experienced at least one childhood adversity before the age of 18. Other inclusion criteria were specific to their willingness to participate in a 45-60 minute zoom interview, be audio-recorded, and provide an active email for incentive purposes.

Data Collection

Participants who met eligibility were later contacted via email and sent an informed consent form embedded within a questionnaire. Participants needed to sign the informed consent before scheduling an interview electronically.

I conducted all individual interviews. All interviews ranged between 45-and-60 minutes long and were administered over Zoom. Interviews were conducted between August 2021 and October 2021. Before running the Zoom interview, I revisited the consent form and verbally went through the purpose, risks/benefits, confidentiality, and Zoom recording information with the participant. Audio recording began once verbal consent was obtained.

A trauma-informed semi-structured interview guide was developed. All participants were interviewed using the trauma-informed semi-structured interview guide. Multiple drafts were created to ensure that the guide was trauma informed. With the guidance of Dr. Samantha Hurst, a Qualitative researcher at UCSD, we focused on how to best reframe all questions to avoid any participants getting re-triggered (removing “why” or “how come” questions). We also focused on asking participants to only go over one or two impactful childhood adversities they felt comfortable sharing with me rather than requesting the participant to revisit all their adversities chronologically. Again, this was meant so that participants were not re-triggered or emotionally drained after the interview was completed. There was also close attention placed in how to probe and carefully navigate the possibility of an emotionally charged interview. For instance, there

would be check-ins throughout the interview to ensure they are okay in moving forward with the interview. When the participant became emotional, which was often the case, I would ask participants if they would want to 1) take a quick pause and then revisit the topic, 2) skip over the topic entirely, or 3) end the interview early. Participants were also given accessible resources which was thoroughly walked over with them.

All documents utilized during the interview have been added to Appendix A. Briefly, the semi-structured interview guide covered topics specific to identifying what childhood adversities have been experienced, what hardships were the most impactful, and the narratives surrounding the adversities participants felt comfortable sharing. Other topics the interview addressed were specific to how the participants felt and coped at the time of adversity in addition to what social support they received and/or needed at the time of the adversity.

Positionality

It was critical for my participants to know my positionality as a researcher but also as a member of the group being queried. Participants, from the beginning, knew that I am a second-generation Latina who underwent diverse adversities (which were not disclosed) which motivated the initial conception of my entire studies. Participants also knew that my views, beliefs, and experiences shaped the kind of questions I asked during the interviews (diverse adversities, emotions experienced, seeking support, coping, and the affects childhood adversities have on the participant today). Many participants referenced feeling comfortable given my positionality as a member of the community and as a culturally informed researcher. My shared positionality may have allowed participants to feel comfortable speaking in Spanish/Spanglish when they wanted to, aided them in elaborating on certain adversities, and perhaps allowed them to feel comfortable when the interview became emotionally-charged.

Data Analyses

I transcribed the first five interviews within a week to ensure the participant interview transcript informed how the semi-structured interview guide should be modified for subsequent interviews. Qualitative data analyses yielded quotes, codes, and themes upon transcription. The findings of this study are based on thematic analyses. Part of the data analyses included demonstrating trustworthiness by engaging in reflexivity throughout the data collection and thematic analysis.

Given my personal experiences with certain childhood adversities, reflexivity was necessary to ensure my experiences did not influence how the data was collected and interpreted. As a member of the population that was being studied, I sought to practice reflexivity by engaging in reflexive memos. I memoed and reflected on every interview to self-monitor the impact of my beliefs, biases, and personal experiences on how the data were collected and analyzed.[87] Each memo included information specific to my first impressions of the participant, any participant observations and self-observations, the feelings I experienced that emerged during each interview, and how the interview influenced my way of thinking. After each transcript was finalized and analyzed, I revisited these reflections to evaluate how my thinking evolved.

Upon completing interview transcriptions, I conducted open coding for every transcript using grounded theoretical methods. Grounded theory is a qualitative methodological approach that allows the researcher to investigate specific phenomena or processes; theories/themes, and emergent themes are discovered during the collection and general analysis of the data.[88] Data collection, analysis, and theoretical/thematic development take place over an iterative process until the researcher then reaches theoretical/thematic saturation.[88] The grounded theoretical approach was pursued, given the exploratory nature of the study.

During the coding process, I developed a qualitative codebook which was later presented to a graduate student who received training in qualitative research and qualitative coding. The codebook included a list of 237 codes which were created upon transcribing and coding a set of randomly selected transcripts (12 out of 20 transcripts). Four separate sections organized the codebook: categories, code names, abbreviated code names, and the code definition that the second coder could utilize during their coding process. How the codes were categorized were specific to the interview topics. Based on the code created, they were then added to categories such as “adversities”, “coping”, “wanted informational support”, “wanted emotional support”, “emotion-specific categories”, “adult outcomes of childhood adversity”, among other categories. There were a total of 52 categories created. These categories were used to organize the codes and gauge how the analysis of the qualitative data may look like in the future.

A total of 20 interviews were analyzed for this study based on achieved thematic saturation. Although 20 transcripts were transcribed, I provided the codebook with 12 shortened transcripts to the second coder. Each week, the second coder was provided with 3 shortened transcripts. The second coder was provided with condensed transcripts to help remove the heavy burden of coding multiple transcripts. Additionally, the shortened transcripts removed pages worth of the consenting process, transitions, and resources provided to each participant. Each shortened transcript contained information specific to the participant’s demographic information along with several highlighted quotes from each participant. The second coder would then be tasked to apply codes to the highlighted quotes, using the codebook as a tool, in a text document. During this process, the second coder used their own judgment to code each highlighted segment.[89] Although some studies have applied multiple coders to the entire data collected, studies have indicated that only 10-25% of the data units are typical.[89] Regardless, I surpassed

this recommended range. The second coder and I held multiple discussions to discuss code differences when they emerged. The second coder and I resolved the coding differences at the end of these discussions. I then indexed the codes using the comment function on Google Docs, which were then downloaded as Microsoft Word documents.[89] Multiple google excels spreadsheets were created when conducting/discussing the intercoder comparison, which allowed for this process to run smoothly.[89]

Ethical Considerations

The study was approved by San Diego State University IRB (Protocol Number: HS-2021-0122). Participants who met eligibility were followed-up and sent an additional questionnaire link via email that contained a complete consent form that needed to be electronically signed before participating. Participants were asked to save a copy of their consent form.

Once their consent form was signed, I connected back with the participant to schedule their interview. Before the participant's interview, I reviewed the informed consent form verbally before proceeding with audio-recording. Participants were reminded the interview session would address topics about childhood adversities which had the potential to lead to emotional discomfort during and after the interview. Participants were also reminded they could withdraw from the study and could refuse to answer questions at any point during the interview.

Due to the trauma-related content collected during the interview, all participants received a PDF file containing my contact information and a list of resources on depression, anxiety, and addiction services. All resources were accessible and online based. Participants were given a $20 Amazon electronic gift card for participating in the study.

RESULTS

Assessing Eligibility

Figure 1 illustrates a CONSORT diagram depicting the assessment of eligibility and informed consent of prospective participants. Of a valid sample of 106 potential participants, only 50 individuals met eligibility and provided their email addresses. Fifty prospective participants were then individually emailed an informed consent form and were asked to sign the consent form electronically; 30 prospective participants electronically signed the informed consent form. Of the 30 prospective participants, only 22 young adults scheduled and completed the Zoom interview with me. Two participants were removed from data analyses as I was confident that the two participants did not meet eligibility but indicated otherwise. The remaining 20 Latinx young adults self-identified as Latinx young adults and met all other study criteria.

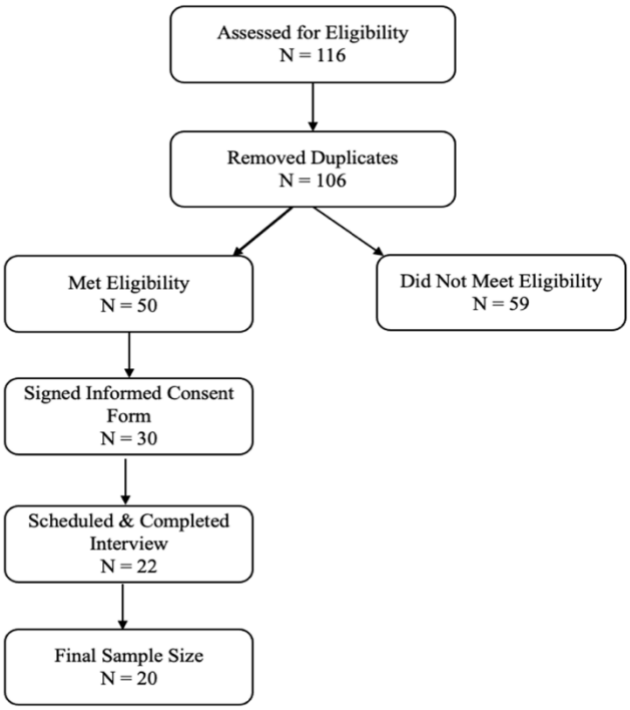

Figure 1: CONSORT Diagram Assessing Eligibility and Informed Consent

Sample Characteristics

During the individual zoom interviews, demographic data was collected from each participant. All participants reported at least five diverse childhood adversities. The average number of experienced adversities was 12.15; SD = 3.87. Table 1 shows how over half of the participants were female (55%), with the remaining being male (35%) and non-binary (10%). Participants ranged from 19-24 years of age with an average age of 22 years old, SD = 1.88 . Participant occupations ranged from being unemployed (15%), having a full-time position (35%), being a full-time college student (30%), to being a part-time college student and part-time employee elsewhere (30%).

For this publication, only several adversities commonly experienced by participants were discussed in detail. Themes that emerged about adversities experienced by participants were financial instability, taking on adult responsibilities, community violence, food insecurity, deportation-related adversity, racism-related adversity, bullying, and housing instability. Adversities were organized based on how many participants endured similar adversities during their childhood. Table 2 displays a list of all the adversities discussed, the number of participants who experienced the adversity, in addition to the number of participant quote references.

Table 1: Participant demographics from interviews between August 2021 - October 2021 (N=20)

	***N* (%)**	***M***	***SD***
Gender			
Female	11 (55%)		
Male	7 (35%)		
Non-Binary	2 (10%)		
Age		22	1.88
Age Range	19 - 24		
19	4 (20%)		
20	3 (15%)		
21	3 (15%)		
22	2 (10%)		
23	4 (20%)		
24	4 (20%)		
Occupation			
Unemployed	3 (15%)		
Full-time occupation	7 (35%)		
Full-time college student	6 (30%)		
Part-time college student + work	4 (20%)		

Adversities

Financial Instability

Participants (N=15) shared narratives about their childhood experiences with familial financial instability. Financial instability was defined as witnessing their parents endure financial instability. This, in turn, affected the participant either physically or emotionally. Familial financial instability, for some, entailed wearing overly used clothes and shoes or wearing inexpensive clothes that were different from their peers at school. Participants recalled self-comparing themselves to other peers during their childhood, typically comparisons with non-Latinx White youth or youth with different generational statuses.

Others shared how financial instability played a role in their living situation, whether it pertained to living in a one-bedroom room with their family members or in a smaller house with non-traditional rooms created to create space for all family members. Several participants recounted witnessing their parents take on multiple jobs labeled ‘dead-end’ jobs to push through financially. Participants recalled seeing their parents borrow money from family members, parents stretching out their finances, or pulling out multiple credit cards to survive financially. As a child, participants recalled being conscious or worried about their finances or when shopping; for many, it affected their daily livelihood as their parental financial instability played a role in how the participant was raised.

> Both of my parents are Mexican immigrants, right? So… they came here without anything. No jobs, no money. And so… money has always been really tight. It's always been… it's always barely enough to get by, you know, so it's like they pay the rent they pay the food… and then just whatever else is left. (Male, 20)

Several participants referenced a connection between their experienced familial financial instability and their experiences with other adversities. For instance, some participants indicated that it was their familial financial instability that led to their food insecurity or their housing

instability. Several participants were evicted from their homes due to increasing bills that could not be paid; others did not have food or nutritious food because of high food costs.

> When you're living in that motel, like, just paying so much for, like, just to stay there, like, and obviously doesn't have all the appliances or whatever, so like cooking microwave meals and...You know, having two little burners and a mini fridge so, yeah, we were just too broke to have it all. Like good food, good shelter, and financial security. We couldn't have these basics when this [financial instability] took place (Male, 22)

Taking on Adult-like Responsibilities

Several participants (N=11) shared narratives regarding the adult-like responsibilities they took on during their early childhood years. Adult-like responsibilities were defined as tasks a child performed that adult often perform. Some participants referenced adult-like responsibilities such as translating, working at a young age, or babysitting/caregiving. Participants, when younger, were often expected to read and translate formal and legal documents, bills, doctor appointments, or interactions with law enforcement. One participant had to translate for his Spanish-speaking deaf mother throughout childhood and late adolescence, a different form of translating and interpreting altogether.

> Being the kind of … parent for my parents. Uhm, when it came to appointments, like doctors' appointments, parent school meetings or parents…what do you call that one… back to school night? Yeah, um interactions with law enforcement. Interactions at the bank, at the supermarket, anything that involved my parents having a dialogue with someone else in English, I had to step in and kind of mediate that or interpret. You know, doctors, like all… whatever, like, whatever the person said in English, I had to translate to Spanish. Whatever my mom said in Spanish, I had to translate to English. (Male, 24)

Participants who recalled having to translate during their childhood were asked to remember how they felt because of this experience. Some participants reported feeling stressed as a child because they either did not know how to always interpret everything or because it

introduced them to their parents' problems. Once aware of their parental stressors, it was difficult for some participants to remain tranquil.

> it robbed me of my childhood to an extent because I was stressed out for them, because I was reading all these things that they were going through and I was like *chale. Porque no mas a ellos*? Why isn't this happening to my other friends? Did their parents just know the language or maybe they just didn't involve their children with the situation they were going through. … I had to kind of walk my parents through their prescriptions, I had to walk my parents through their emergency room visits. I had to read them doctors notes to their supervisors or things like that. (Male, 24)

> I was always stressed out when I needed to help her with that [translating]. Then, like, I grew up and I became more stressed out as I started to understand more, like, WHY we needed food stamps, WHY I needed to ask around to help my mom get access to, like, a food bank. (Female, 19)

Several participants indicated that they worked at a young age to help their family financially or to earn enough money to buy food and other products for themselves. Some participants worked early because one of their parental figures fell ill or reappeared in their lives. In contrast, others felt the need to work because they were worried about their familial financial situation and wanted some financial relief.

> My dad had a stroke and it made it so that he was unable to work… he wasn't able to pay his taxes and he got audited by the IRS and…we got our house foreclosed. I had to start making money for myself to have something to eat… to be able to … keep going to school … And so… uhm… I started having to make money to pay for gas, to pay for my own food, to pay for laundry, school supplies and stuff like that. And so… I started working from 2am to 10am and then going to school right after that. (Male, 19)

Other participants recalled having to babysit as a way to help their working parents constantly. Participants recounted having to cook for their siblings or help them with their schoolwork so that both parents could work to earn a living. One participant indicated they took on a parental role to help their mother and siblings.

> … I had to find, like, the line between being like a, you know, a dad and then being…like just the big brother. I feel like I had to do a lot of, like, talking to my

> brothers and, like, kind of helping out my mom. I guess that's where the responsibilities come in for me. I was taking my dad's role even though I didn't need to… but I had to step up for my mom and my brothers. (Male, 22)

Community Violence

Participants (N = 11) also recounted multiple narratives about their community violence exposure. Community violence was defined as a participant living in a neighborhood or being raised in a neighborhood where the participant was exposed to or witnessed violence. Some participants described their experiences with hearing gunshots or witnessing one or multiple drive-by shootings in their neighborhood before age 18.

> I think I remember being twelve one time … and I was closing the balcony to my door uhm… to our apartment that we were at… and this group of people were just outside in our neighborhood hanging out like just hanging, you know, on a Friday night listening to music outside and then… this person just, like, came out of nowhere and shot up the entire group. (Non-binary, 23)

For the same participant, drive-by shootings were so common in his life that he was surprised he survived the community violence he was exposed to as a child, *"I'm glad I… I made it to the age of 21 because, I mean…multiple times, people just got killed right next to me, you know? People have been killed in drive-bys."*

Other participants referenced witnessing gang-related, and non-gang-related fighting occurring in their neighborhood before age 18. Fighting would not only take place in the community but continued within participant school settings. Several participants recalled witnessing community gang members fight with other opposing gang members, while others referenced that they witnessed BIPOC community members fight one another.

> His son and [name redacted] started like bringing around more…more of their friends, you know? Homies basically, you know, other cholos. And they would hang out in a big group, literally, like just 10 of them like posting outside of the house… and I can vividly remember, like my junior or senior year in high school, they were hanging out there… and a lot of times, like I said, people from [gang

> names redacted] would come over to start something… and they would literally like chase each other…like as if they were about to brawl, you know? (Male, 21)

> … like community violence just among ourselves. I think a lot of the times my, you know, like people of color BIPOC folks… uhm there constantly fighting each other… and like we're… we're… not doing anything to better ourselves and our communities if we're just constantly fighting one another. (Female, 24)

Although not particularly labeled as community violence, a few participants recalled witnessing domestic violence within their neighbor's households. A few also referenced neighbor intoxication, drug possession among community members, and hearing police sirens growing up. These experiences align more closely with community physical and social disorders often linked to community violence.

Food Insecurity

Multiple participants (N = 10) also recalled experiencing food insecurity growing up. Food insecurity was defined as being in a state without having reliable access to enough affordable or nutritious foods. Food insecurity was experienced differently among the participants. Some participants recalled sleeping hungry or not having enough food while young. One participant had inconsistent access to water or clean water. Several participants had food to eat but were aware that their parents would skip a meal to ensure their children ate first. Three participants recognized their food insecurity upon realizing they were limited in what they bought or acknowledging that many of their peers had snacks in their homes while they didn't.

> So, it's either like…*comia yo* [I ate] and my mom and he [dad] would just be cool with the lunch that he would get but, it was never like… lush…there was never, like, a luxurious kind of, like, dinner. Or it wasn't, like, I couldn't choose or I couldn't be like, 'oh, let's go to McDonalds or let's go to, you know, to like fast food" because it was never like an option. So, it was always like, *lo que haiga en la casa y si no hay nada, pues comes tu y...* [whatever was in the house and if there was nothing, then me and…] and my mom and dad wouldn't eat. (Male, 24)

Deportation-Related Adversity

Several participants (N=10) referenced having an immediate or extended family member deported, developing constant fear and anxiety of having their parents deported, or being exposed to Immigration and Customs Enforcement (ICE) raids before the age of 18. Deportation was defined as either witnessing or knowing of a family member getting deported before 18. Some participants had a family member deported. One participant had a parent deported at the age of 3 years old. Other references to familial deportations were specific to the participant's extended family, whether it was a sibling, cousin, aunt, or uncle.

> It was actually in high school. It was my cousin's husband and then like the closest cousin that I'm closest to … it was her partner and he's um… the father of all her kids' closest nephews and nieces that I'm closest to … and so … that was shocking to see happen uhm… and hear about. You know? Because I thought that my nieces and nephews, this next generation, was never going to have to really endure any of that [deportation]. … Just existing as a Latina, like, it's hard not to hear these stories so, like, just hearing my mom on the phone sometimes about someone we know… someone I've seen physically, in person, has been deported. You know what I mean? So, like, just acknowledging that this person is no longer going to be at the BBQ or at the baby shower or something like that… is just kind of like… it's sad.. when that does happen. Uh, and it's just kind of like I don't know. We … we have to have a mindset I feel like sometimes … and I don't always know what mindset that is. (Female, 24)

Five participants referenced enduring anxiety or fear surrounding the potential deportation of their parents, given their immigrant status. Participant anxiety grew with more consistent exposure to familial and community deportations.

> **…** So I've always been anxious every time my mom is driving. [Voice Cracks / getting emotional] Every time, like, my mom is uhm… away from me… I get this horrible anxiety that something could happen. Because it's… I guess I've seen it my whole life. (Female, 22)

Several participants did not have a family member deported but were exposed to ICE raids before 18. ICE exposure was defined as being directly exposed to ICE raids or engaging in

ICE-related conversations. Although a small sample, some participants referenced having ICE raids in their own community, while one participant had ICE come into their own home and detain their mother, a US citizen.

> … and it… it was really weird cause she's a citizen. She's been a citizen for several years… but they still cuffed her and so… I was in bed… I was um… yeah no I was in bed. Everybody, except for my mom, was in bed of course but then like, ICE raided our house, like, looked around… they went into the bedroom. They, like, put flashlights at me and my siblings. They told my siblings to all get out… and they were chill with me staying in bed for whatever reason they were like "OK they can go… they can stay asleep ". But everyone else was in the kitchen and all the while frantically looking for my mom's passport to prove that she's a citizen while… like she's just sitting there cuffed up. And I'm… I'm completely awake but I didn't wanna go out into the kitchen to see any of this. I wasn't certain on how it would affect me. And so to kind of like take care of myself I stayed in bed but just, like, listened … um to be, like, to everything going on… And in my head I was kind of thinking like "are they really gonna like deport my mom without telling me anything?" like "would they really take her without, like, saying anything to me?" like "am I just gonna pretend to be asleep this entire time?" well like ICE takes my mom and it's like really fucked with me because like the next morning I had to go to school. But, um eventually like someone was able to find my mom's passport and show them, like, look she's a U.S. citizen. I don't know why you cuffed her but like you don't need to deport her or anything. (Female, 20)

Racism-Related Adversity

Participants (N=10) referenced experiencing racism, in various forms, before age 18. Specifically, some participants experienced being targeted or witnessing other community members being racially targeted by their own racial/ethnic group members. One participant recalled being treated differently by their Mexican peers during their childhood, as the participant was not considered "Mexican enough" due to their lighter skin complexion. Another participant, Mexican American, was verbally harassed by another community member who was Salvadorian.

> You go to the store, and even amongst raza too, right. Like, I would go to the supermarket and the security would see me and he'd go, you can't ride your scooter in the store or you can't come in with your scooter. I'll be

> like ‘all right, fine’ and I would walk… and then he'll be like “Niño, de la calle, salte de aqui vago” [Boy from the street, leave from here lazy]. I’d be like, “dude, I’m here to just meet up with my parents”. (Male, 24)

Half of the participants witnessed or heard about their parents being racially and verbally harassed by other community members. Specifically, the participant’s mothers were often racially targeted. Although some participants were not targeted during these encounters, a few indicated that they were impacted by these events that took place in their life.

> … racism I’ve… like I’ve seen it from, like, my parents. like they've experienced racism, like, their whole lives. And that's something that I’ve always noticed and internalized myself. Just seeing it happen to them really messed me up (Female, 19).

Several participants have been called a racial slur before the age of 18. Racial slurs either came from outside members of the racial/ethnic group or members of the racial/ethnic group. Participants often endured these racial slurs in school settings.

> …I told someone that like I'm Salvadorian, he's Mexican, and he just called me a fucking serote which is like … what ugh… what Mexicans call Central Americans. And it was just so weird like… like now looking back at it it's like. yeah so I mean we're just like fucking in middle school just playing basketball… (Non-binary, 23)

Several participants recalled experiencing institutionalized racism before 18. Institutionalized racism was defined as racism that is embedded in the laws and regulations of a society or an organization. Participants shared their experiences with either feeling othered within the K-12th grade school system, being kicked out of class, or being verbally targeted by schoolteachers.

> I feel like growing up in Los Angeles I experienced racism pretty much every day in the K through 12th system. Just personally… like aside from my family being like Latinx and growing up in the K to 12th system … and like having nothing but white teachers. a lot of the times like they made sure that we felt othered or like felt like we were less than and like regularly tokenizing like a couple of us and

> then like treated the rest of us like we were pieces of shit. I feel like that's how I experienced racism in that way… when I was like in the K through 12th system and in that age. (Non-binary, 23)

Bullying

Several participants (N=9) reported being bullied before age 18. Bullying was defined as a person seeking to intimidate or harm someone, whether physically or verbally. Although there were numerous reasons behind the bullying, these participants shared a common experience of being the victim of being bullied. Most participants were bullied due to being different from their peers at school. For instance, several were bullied for being queer, "nerdy," brown, having a Spanish accent, or for being autistic. Most of the bullying was verbal, and their school peers bullied most of the participants.

> I was bullied. mostly because of the language barrier and, like, my accent. And like the lisp that I had. But, I feel like that contributed to the bullying. (Female, 19)

> I was very different among my peers. And if you think about it… growing up as… an autistic individual who didn't know who had that disability… or he didn't understand … what it was…it's like, … yes, these questions of like "Hey, why am I secluded from everything else?"… "Why am I ostracized and bullied for having something different than … the rest of the kids?" "Why am I isolated? Why was I being bullied?". (Male, 19)

Although not like most participants, two participants were severely abused by their peers at school. Severe bullying was defined as being physically assaulted and severely verbally abused by their bullies.

> …I went back school and I was being bullied. Girls would literally threaten to jump me and follow me home trying to jump me. And they would tell me the whole time, and they would carry knives on them, and they literally show me the knife and be like "Oh, this is going to be on you" and they cornered me… they would corner me into bathrooms…and one time they were like punching the walls… shaking it, as I was there on the toilet… literally just trying to go to the bathroom. And they would tell me… "kill yourself, kill yourself, the world is

better off without you, and you need to die". (Female, 19)

Housing Instability

Various participants (N=8) recounted their housing instability experiences before age 18. Unfortunately, some participants were kicked out of their family homes, lost their homes to a fire, had their homes foreclosed, or were evicted from their homes prior to the age of 18. All participants shared narratives of couch surfing with either friends or family members. Several participants and their nuclear family slept in a family member's garage, a single bedroom, or their grandparent's living room. Other participants were welcomed to live with a close family friend.

> Because, like, we weren't really, like, the best. I mean we had just moved out from our own apartment into a 1 bedroom place with, like, other families. So it was super cramped … so you can just imagine how cramped and, like, it was. With, like, especially with 2 parents and 5 kids. In one bedroom. And that's where we had our… we had 2 beds, uhm, and that's where we would stay the whole day because we didn't really like the other family. They were kind of like icky. (Female, 19)

Of the eight participants who spoke about their experiences with housing instability, over half shared how their housing instability was heavily influenced by the housing crash that took place in 2008. For some, finding a family home became difficult once their home was foreclosed.

> We lost kind of everything. We lost our…We lost our homes because of … the recession, you know, mortgages kind of just … fell off and banks… took back the houses and all that. (Male, 19)

Social Support Types and Sources

In addition to exploring what other childhood adversities have been experienced by Latinx young adults, a secondary objective of this study was to explore what social support types

and sources were wanted at the time of the experienced adversity. The most common social support type wanted by Latinx young adult participants was emotional support, followed by instrumental and informational support. The most common social support source wanted at the time of childhood adversity was individualized therapy.

Emotional Support Type

A majority of participants (N=13) mentioned wanting emotional support when they experienced childhood adversity. Emotional support was defined as sources of support providing expressions of empathy, love, trust and illustrating to the individual that they are cared for. Over half of the participants wanted emotional support as a child to address their emotions with others. Specifically, participants wanted to be heard, wanted to feel safe and cared for by an individual, wanted their feelings validated, and wanted to express their negative emotions that developed as a result of the adversities experienced.

Some participants wanted to receive emotional support during their childhood from sources who had similar lived experiences, could understand where the participant was coming from, or identified as a minority member. Specifically, participants referenced that they wanted emotional support from friends or adults who reminded them of themselves or their family members.

> People didn't understand me. What I was going through. So, I sort of wish I had that really caring, life-changing teacher. You know? Someone that understood my background, maybe connected with me through that way. And yeah. I had a lot of white teachers, so maybe someone like me that offered that kind of support. (Male, 21)

> Because I know, I think I had some White teachers who were showing that emotional support, but I feel like emotional support varies based on how you're brought up. And I think *raza* and Central and South American… like we have a very specific way of showing *cariño* and emotions, to the *gente* we care for. So, it was me… a lot of it was … was me rejecting that White emotional support and me searching for that emotional support that was of color. That was brown, that

was a reflection of my household. (Male, 24)

Instrumental Support

Although not as common as emotional support, several participants (N=9) referenced wanting instrumental support while experiencing childhood adversity. Instrumental support was defined as wanting tangible aid and services. Specifically, several participants referenced wanting reduced healthcare costs. Others wanted access to food, a better quality of food, or CalFresh services. Some wanted to find affordable housing opportunities. Although not as commonly seen, one participant referenced wanting a nutritionist during their childhood and access to an affordable gym. Another participant referenced wanting affordable mental health services.

> Like I could have used tangible aid and services. Like I was uninsured for the greater part of like my teenage years… and could have definitely used health insurance like also being food insecure… like we could have used more food. (Non-binary, 23)

Informational Support

Similar to instrumental support, several participants (N=9) referenced wanting informational support. Informational support was defined as wanting advice, suggestions, or information. All participants wanted access to resources or knowledge of available resources during their childhood adversity. Specifically, some participants referenced not knowing what they were eligible for during their childhood; participants shared that if they had known what services they were eligible for, perhaps it would have helped their unique situation. There were no common statements specific to what information was wanted at the time of the adversity. However, some participants referenced wanting more information about higher education, domestic abuse signs, legal support for unhoused youth, and information that is Spanish

accessible for their parents. Some participants referenced needing information on how to apply to certain resources. For some participants, learning how to navigate certain systems would have been helpful for them and their families.

> I think there's definitely some resources that we could have used that we didn't even know we were like eligible for kind of thing and then there were um… and then like knowing how to also navigate those different systems as well I think would have been super helpful. Because we were kind of… it was kind of like a trial and error right, like figuring out how you know… the health care system worked. (Female, 24)

Individual Therapy: A Desired Source of Support

When asked what source of social support the participant would have wanted at the time of their childhood adversity, the most common response was individual therapy (N=9) which can also be an example of instrumental support. A few participants wanted individual therapy earlier to heal and process their adversity faster. Others indicated that therapy would have been helpful as it would allow them to speak to someone else outside of their household.

> Like I would have… my healing process would have been a lot faster if I would have been able to have…you know the individual therapy and the talking with adults as a child. like I think um…my childhood would have been a little bit smoother if I had gotten those resources earlier (Female, 24).

Barriers to Social Support

Barriers to seeking sources of social support was an emerging theme in the study. Numerous participants (N=16) referenced internalized barriers that prevented them from seeking the full extent of support. Only the most referenced barriers are mentioned in this study, fear of burdening others, the internalized stigma for seeking support, and fear of being involved with child protective services.

Fear of Burdening Others

The most common barrier to seeking social support was the fear of burdening others (N=10). Specifically, most of these participants did not want to burden their parents by sharing

their adversities and the emotions they faced at the time of their adversity. Others did not want to speak to their friends about their adversities and the emotions they felt due to their adversities.

> I didn't talk to my parents either because, well… they were going through a lot. You know? I didn't want to place more weight by talking about my feelings. (Male, 21)

Stigma

Although not as common as fears of burdening others, participants (N=7) experienced internalized stigma towards seeking support in times of adversity. Specifically, many referenced that it was part of their upbringing and culture not to seek support from others. One participant referenced that, as members of the Latinx group, we are taught to push through adversity without seeking support.

> Because we're not supposed to. you're not. In the Hispanic culture, at least the Mexican culture, you are not supposed to talk about what happens behind closed doors. it's a hush "don't speak about the problems". (Female, 19)

CPS

A few participants (N=4) did not seek sources of support during their childhood due to internalized fears of being taken away by child protection services. Participants referenced being fearful of the foster-care system. Others were told, by their parents, to not mention some of the adversities they were going through out of fear of being seen as unfit parents. One participant, in particular, felt that opening up to someone would lead to their family being separated and their mother deported.

> What if this person is sincerely trying to help me?? and they say, you know, what we should do is call CPS because this girl hasn't washed her hair … she's wearing the same underwear…. and her brothers like, you know, he has good grades… but you know he has the same shoes, and they don't fit him. we should probably get CPS. CPS comes, they're trying to help us but in reality, all three of, you know, me and my two siblings, are separated. My mom is deported, and we may never know if we will see each other again (Female, 24)

DISCUSSION

Most researchers, to date, continue to apply the standard ACE measure when investigating specific health-related outcomes.[71] Researchers have acknowledged the limitation of the standard ACE scale, its lack of diverse adversities,[28,90] yet it is still being applied to diverse populations such as in the Latinx population.[16,33,66] This study aimed to qualitatively explore what childhood adversities have been experienced in a more diverse sample of second-generation Latinx young adults so that it can inform the potential development or enhancement of a new Adverse Childhood Experience Questionnaire. Furthermore, we do not have information regarding the social support needs of Latinx children and adolescents who experience childhood adversities. Obtaining such information is critical so that it can inform researchers, practitioners, and caregivers on where to allocate the necessary support for this group of young people. The secondary aim of this study included exploring what types and sources of social support were needed at the time of the experienced adversity. Although the overall study was a mixed methods project, the qualitative results were not incorporated into the subsequent methods using the ACEs measure but will be an area of future research.

Financial Instability

Recent data has shown that there are an estimated 2,740,000 California members who have immigrant status.[91] Of these residents, some of these members come from countries such as Mexico (61%), El Salvador (7%), and Guatemala (6%). From these 2.7 million, 34% reside with at least one U.S. citizen child under the age of 18.[91] Each year, these numbers grow significantly

It is critical to consider these growing statistics and how they relate to some of the findings in the present study. For instance, second-generation Latinx young adults recalled experiencing adversities, such as financial instability, during their childhood. Recent California data shows how 43% of the immigrant population, mostly Latino families, are at or above 200%

of the poverty level.[91] For a family of 4 in the state of California, this equates to earning an estimated $55,500 a year.[92] However, a family of 4 will need about $114,715 to live comfortably in California.[93] These statistics highlight why many participants indicated wearing overly-used clothes/shoes or noticeably inexpensive clothes compared to their peers.

In my study, participants recalled having limited space in their small homes or sharing rooms with other family members due to financial constraints. It is important to note how many of the adversities experienced, such as housing instability, were rooted in familial financial instability for many participants. Ultimately, these adversities are and will likely remain interrelated for minority families. For all families, housing consumes the majority of the family's income.[93] In California specifically, 55% of Latinx and 54% of African Americans families reported financial strain due to housing costs alone compared to 39% of non-Latinx White and 48% of Asian American families.[94] Because many immigrant parents endure job insecurity, low incomes, and the possibility of being detained or deported without notice, living in crowded households or renting is often considered a logical response.[95,96] Recent data has shown Latinx youth are five times more likely to reside in crowded housing and 50 times more likely to reside in a mixed nativity.[97] Disparities in housing crowding, often caused by financial constraints, affect the future of Latinx children and youth.[97] Overall, these findings are suggestive for more higher paying wages, housing policies, and economic relief resources.[95]

Housing Instability

Several participants also recalled losing their homes during childhood and living with family members. Unfortunately, Latinx youth are two times as likely to be evicted compared to non-Latinx White renters.[98] Studies have shown that evictions are often concentrated in low-income areas where Latino populations are heavily concentrated.[99] Regardless of race/ethnicity,

evictions are often disruptive to young children and their respective families. Experiencing an eviction has the potential to impact youth livelihoods. A longitudinal study found how people with experiences of housing instability or evictions are more likely to report being in poor general health or are more likely to experience mental health concerns up to 8 years after an eviction.[100] Experiences with evictions also place youth at risk for encountering other adversities, such as having a mother who has two times higher odds of experiencing criminal justice involvement[101] or increasing substance use among their parental figures.[102]

In this study, several participants indicated how their housing instability was influenced heavily by the 2008 housing crash. Nationally, Latino households lost their homes because of foreclosure and evictions more so than any other ethnic-racial group during the 2008 housing crash.[103,104] One study found that during the housing crisis, Latino homeowners were three times more likely than non-Latinx White owners to lose their homes to foreclosure; this eradicated many hard-won gains in family wealth that transcend for years.[97,104] These findings are suggestive of improving housing policies to ensure that any progress gained since the 2008 housing crash outlasts yet another crisis among Latinx families.[97] Programs aimed at preventing housing foreclosures should aggressively target minority homeowners to help ameliorate any housing foreclosure disparities.[104]

Food Insecurity

Participants also indicated experiencing food insecurity during their childhood. For many participants, food insecurity entailed sleeping hungry or witnessing their parents withhold eating so that their children could. This finding was to no surprise when a recent study found 42% of Hispanic/Latino youth endured household food insecurity; the study also found 33% of children endured food insecurity.[105] Food insecure families and households often experienced greater

economic stress and had fewer socioeconomic resources;[105] this study portrays an example of how both food insecurity and financial instability are difficult to separate when experiencing one or the other adversity. Unfortunately, enduring food insecurity places Latinx youth at risk for high lipoprotein cholesterol,[106] greater body-mass index for older youth, poor diet quality for U.S.-born youth, depression, and anxiety.[105] Multiple meta-analytical studies using a general population illustrated how food insecurity is associated with depression, stress,[107] anxiety, and sleep disorders.[108] This specific finding suggests the urgent need for developing future interventions to screen for food insecurity by either healthcare providers or community-policy-based interventions aimed at improving food security among Latinx children and youth.[109]

Adult-Like Responsibilities

This study also illustrated participants' experiences with taking on adult-like responsibilities during their childhood. For many of the participants, this involved having to translate for their Spanish-speaking parents. Children and youth of immigrant parents often serve as language brokers or act as the linguistic intermediary between their parents and the host's culture.[110] Interestingly, one study highlighted a positive association between youth translating for their parents and their higher academic achievement and academic self-concept.[111]

Although some benefits may exist with Latinx youth who translate for their parents, much of the research is concentrated on the negative effects translating may have on youth. Specifically, one study showed how youth experience stress when they are asked to interpret situations beyond their language capabilities, either in English or Spanish.[110,112] Past studies have also shown youth translating for their parents may also negatively affect their perceptions of parental authority and control, which in turn may be related to perceived stress.[113]

Participants also shared their experiences of caring for and babysitting their younger siblings due to their parents' heavy work schedules. Sibling caretaking is critical for both the sibling being cared for and the sibling providing the care; such tasks contribute to the overall family well-being and may aid in alleviating any additional stressors on the parents.[114] Sibling caretaking is valued in cultures that emphasize both familism and collective responsibility; Latinx populations emphasize both of these values.[115] Regardless of this being rooted in the Latinx culture, sibling caretaking may be perceived as a significant burden and may contribute to poor mental health, such as increased stress, depression, and lower school grades.[116] Because sibling caretaking is engrained in the lives of many Latinx youth who have immigrant parents, it is critical to provide as many resources to these youth to help ameliorate any potential stress.

Community Violence

Participants also recalled and shared their experiences with hearing gunshots or witnessing one or multiple drive-by shootings in their neighborhood before age 18. Latinx youth are more likely to reside in low-income urban households, which places these youth at an elevated risk for witnessing community violence compared to non-Latinx youth.[117] Youth exposed to community violence have a higher risk of developing anxiety, post-traumatic stress disorder, depression, and externalizing behaviors.[118–120] A different study found that exposure to community violence is positively associated with hypervigilance which in turn is associated with higher systolic blood pressure and other health outcomes.[121]

For racial/ethnic minorities, moving away from low-income neighborhoods may be difficult as it is tied back to familial financial insecurity, lower income wages, and systems that oppress racial/ethnic groups. Thus, there must be evidence-based practices in place, in addition to prevention and intervention strategies to help alleviate the negative effects Latinx youth may

encounter due to their likelihood of being exposed to community violence.[122] There is also a need to explore what protective factors may help curb these potential consequences of experiencing community violence.[122]

Deportation-Related Adversity

Several participants reported having an immediate or extended family member deported, recalling developing their fear and anxiety of having their parents deported or being exposed to ICE raids before they were 18. Having experienced deportation-related adversities places youth at risk of enduring other adversities. One study found economic hardship, barriers to education, parental arrest, poor health outcomes, deportation of multiple family members, and experiencing discrimination are all associated with having a parent who is of immigrant status.[123] A qualitative study with Latino immigrant parents as participants, asked about the emotional impact of anti-immigration legislation of their children.[124] Similar to my findings, children experienced fear, insecurity, and uncertainty under the potential threat of parental or familial deportation.[124] In the same study, Latinx children and youth also witnessed ICE raids and have seen families separated.[124]

Encountering this type of adversity during childhood places youth and young adults at risk of high-intensity drinking, prescription drug misuse, and illicit drug use.[125] Other studies have found that experiencing familial deportation is linked to elevated depression,[126] isolation, perceived constraints on future employment or educational opportunities, and anxiety.[127] My findings, in addition to past literature on the effects of familial deportation on youth, suggest the negative impact on the wellbeing of Latinx youth.[127] Additionally, policies specific to immigration must be considered a social determinant of health given the additional adversities and hardships often experienced by having a parental figure with an immigrant status.[127]

Racism-Related Adversity

In this study, some participants experienced being targeted or witnessing other community members being racially targeted by their own racial/ethnic group members. Others witnessed their parents being racially or verbally harassed by other community members, while others directly experienced institutional racism or racial slurs.

Most racism-related research, specifically Latinx groups, focuses on adult populations or other minority youth groups. Past literature has shown minority youth and adults who encounter racism, or racial discrimination are likely to develop psychological disorders such as major depressive disorder, agoraphobia, post-traumatic stress disorder, and substance use disorders.[128] Other studies have found an association between systemic racism and youth substance use,[129] low self-concept, low self-esteem, anxiety, behavioral/ delinquent problems, and other health outcomes such as metabolic disease.[130] The participants in this study may have also encountered these additional risks that were not probed during the interview. My findings, along with previous research, indicate the need for youth-serving institutions to create a safe place and explicitly convey their views against racism.[131] Additionally, organizations should aim to develop, implement, and evaluate interventions to help alleviate any effects caused by experiences with racism.[131]

Bullying

Although bullying can be experienced across all racial/ethnic groups, it is important to note how prevalent this theme was among this group of Latinx participants. In this study, there was no common theme on the reasoning behind why many of the participants were bullied during childhood. Past studies have found racial/ethnic youth are more at risk for being bullied

compared to non-Latinx White youth.[132,133] One study showed Latinx youth were 1.49 times more likely to be bullied by their peers.[134]

Regardless of race/ethnicity, bullying has been linked to experiencing severe symptoms of mental health problems that have the potential to persist until later adult years.[135] Children and youth who are targeted may be at risk for engaging in delinquent behavior,[136] may develop hyperactivity and inattention,[137] as well as show signs of aggression.[138] One study found that Latinx children and youth bully victims were more likely to engage in alcohol consumption, whereas other bully/victim groups were more likely to engage in tobacco use.[134] This study and past literature have implications for both the development and implementation of prevention and future intervention programs across minority racial/ethnic youth groups to help curve the negative effects of bullying.[134]

Social Support Types & Sources

In addition to exploring what other childhood adversities have been experienced, I wanted to explore what social support sources were wanted at the time of the experienced adversity. When asked what social support type was wanted, most referenced needing emotional support. Specifically, participants wanted to be heard and feel safe and cared for by an adult or parent, as they did not receive such support or received little of it.

Unfortunately, racial/ethnic parents may struggle to be as heavily involved with their children compared to non-Latinx White parents due to their financial stressors that require this subgroup of parents to work a lot and be away from the family.[139] Parental non-involvement or little involvement should not be interpreted as indifference.[139] However, one should consider the physical or internalized barriers to seeking emotional support from their parents, who may be

busy working multiple jobs or preoccupied with other stressors that have the potential to affect their family unit.

The most common social support source wanted at the time of childhood adversity was individualized therapy. Individualized therapy could also be considered an example of a specific type of support - instrumental. However, studies have found that Latinx children and youth are the least likely to receive mental health services.[140] This is likely due to Latinx youth encountering many barriers to mental health services, such as therapy going against one's cultural values, lack of insurance, lack of bilingual providers, low socioeconomic status, parental immigration status, and lack of awareness of mental health.[141] Researchers and clinicians must continue to extend formal individual therapy to Latinx youth. They must increase mental health engagement and retention so that Latinx youth can obtain the services they may need if exposed to adversities in this study.

Strengths

This study has numerous strengths. First, exploring what other childhood adversities were experienced by racial/ethnic children and youth is a new area of research. Although a few studies aimed to investigate other childhood adversities qualitatively and quantitatively,[30,73] no studies have explored such aims using only a Latinx second-generation young adult sample. This provides a more narrowed focus on a specific population of interest. Additionally, no studies have explored the social support needs of Latinx populations after encountering childhood adversities. Other strengths of the study pertain to the methodology used in the study. Specifically, interviews were conducted over Zoom during the COVID-19 pandemic. Zoom interviews allowed this project to be feasible and mindful of the ongoing pandemic. This study also incorporated intercoder reliability methods which aided in the rigorousness of this study.

Limitations

This study is not without limitations. First, the findings of this study cannot be generalizable. Regardless, qualitative research is not meant to be generalizable as this type of research is not based on random samples or statistical controls.[142] Qualitative research is meant to study a certain issue or occurrence within a specific population or ethnic group.[142] Related to this limitation, it is critical to note that I did not query those who chose not to participate in the study. Perhaps, those who participated in the study were different from those who chose not to participate in the study. It is possible the people who moved forward in participating in the study may have elicited more childhood adversities compared to those who chose not to participate. Or perhaps the sample underrepresented those with more severe childhood adversities.

Other limitations are specific to how the Zoom interviews were conducted. Specifically, Zoom interviews were only audio-recorded as participants had their web cameras turned off during the 45-60 minute interview. As mentioned, web cameras were turned off to allow participants to feel as anonymous as possible as they recalled any adversities, they were willing to share. This played a role in my inability to observe specific body language that would have allowed me to probe further on certain questions during the interview. Other limitations pertain to the demographics assessed during the interview. Specifically, I did not measure current socioeconomic status or their Latinx-specific origins. This information could have provided a more detailed description of the interviewed sample.

Another limitation worth noting was providing the participants with a list of adversities and asking participants if they experienced any of the adversities listed on the document or outside of the document. By integrating this process, participants were not able to address their own experiences with adversities listed in the traditional ACE scale. It is possible that

participants not only experienced adversities listed on the document but also the traditional ACEs. Capturing this information would have been beneficial in this qualitative study as it would have allowed me to assess the individual severity of ACEs and continue to query which ACE (traditional or nontraditional) were perhaps most impactful in their life.

Lastly, it is critical to acknowledge the limitation of how social support was queried during the interview. In this study, I asked young adults what social support they wished they could have had at the time of the experienced childhood adversity. Perhaps the social support that participants referenced wanting during their childhood may have been colored by their knowledge of different types and sources of social support. Or, perhaps the social support they referenced match more of their needs as a young adult. Maybe asking a Latinx child or teenager what support they need given their adversity may have prompted different discussions because what people think they need as an adult may be different than what they perhaps needed or wanted as a child or a teenager. Regardless, the multiple strengths and implications of the current study outweigh all these limitations.

Future Directions

This study has multiple future directions that should be considered. First and foremost, this study illustrates the critical need to enhance the ACE scale to include more inclusive adversities experienced among racial/ethnic children and youth. Adversities experienced, such as financial instability, taking on adult-like responsibilities, food insecurity, and many more, are not currently assessed in the standard childhood adversity scale. Given these findings, these results should enhance the ACE scale in the future and re-assess past literature specific to Latinx ACEs in relation to mental and health outcomes.

When looking at each specific adversity, this study has additional implications. The adversities experienced by second-generation Latinx children and youth are the aftermath of having immigrant parents - an uncontrollable situation. However, policies and interventions can be designed, implemented, and evaluated to help alleviate some of these adversities experienced by not only the children and youth but also their parents. For instance, there is a need for immigrant parents to have higher-paying wages, access to housing resources, and access to economic relief resources. Such resources may alleviate the stress the parents and their children feel. Additionally, there is a need to prevent future housing foreclosures among Latinx; interventions should aggressively target Latinx and other minority homeowners who are likely to be affected if another housing crisis occurs. Lastly, immigrant status must be considered a social determinant of health. Parental immigrant status influences how the family is brought up and the stressors the family unit faces together. These are possible solutions that are controllable on a state and federal level that can impact the lives of millions of Latinx children and youth who have parents with immigrant status.

The most common social support type wanted was emotional support from others who looked like the participant and/or had similar lived experiences (teacher or a peer). Public school systems should continue to employ more diverse teachers so that Latinx children and youth can feel comfortable and safe to confide in adults whom they can identify with within school settings. However, between 2017-2018, only 21.5% of all teachers in California identified as Latinx; [143] simply stated, there are not enough Latinx teachers for Latinx students. Reformation of the entire public school system would need to take place for this to work, a task proven difficult. Thus, after-school prevention programs should be designed to 1) address the racial and ethnic disparities many Latinx youth face and 2) discuss the emotions centered around these

disparities that many youths may be experiencing and internalizing. The program can help decrease any potential internalizations of experienced childhood adversity; in addition, it can help link youth to an adult and/or peers who may have faced the adversity or is currently facing the adversity. A program such as this can link youth to information that may help youth and their families, another social support type that was wanted by many participants in this study.

Many participants stated that they needed individualized therapy during their childhood and adolescent years, however many did not receive such support. This aligns with previous research which has seen Latinx pediatric mental health service disparities.[144,145] Future research and prevention programs should continue to be developed to help close these pediatric mental health service disparities. Schools and parental guardians should communicate and encourage Latinx youth to participate in pediatric mental health services if there are signs of negative emotions or adversity experienced by the youth.

Lastly, many participants shared their own barriers to seeking support such as their internalized fears of burdening others, stigma, or fears of being taken away by CPS. To help reduce these internalized fears among the next generation of young Latinx youth, parental figures need to encourage their children to communicate with them regarding their shared lived experiences and the emotions centered around those experiences. Discussing topics centered around adversity and emotions is not a simple task, especially when there is a cultural emphasis on emotional restraint.[146] However, these discussions may reduce the potential internalization that many Latinx youth face today.[146] In addition, public school systems should continue to reinforce the importance of mental health, communicating negative emotions, and the importance of seeking support from adults, peers, and professionals.

Chapter 2, “Let’s Talk about the “Other” Adversities Experienced by Second-Generation Latinx Populations and the Social Support Wanted” is currently being prepared for publication. Mark B. Reed, Laramie Smith, Maria Luisa Zúñiga, Eileen Pitpitan, Ryan Trim, and Harsimran Baweja are co-authors.

Appendix A

Initial Interview Protocol

Before beginning the interview/recording (Read only the Italics)
I would like to thank you for participating in my study. Before we get started with the interview, I would like that you switch off your camera. I chose to do the interviews with the cameras off as it will help add an extra layer of privacy for you. This means that when I begin the recording, only your audio will be saved. You may find that having the cameras off is more comforting – this is a bonus as for why cameras need to stay off.

Ensure that the camera is off before recording begins.

The purpose of this study is to understand the range of potential negative childhood hardships that can be experienced among young Latinx individuals before the age of 18. For the interview, we are interested in learning about the different types of childhood experiences you may have encountered such as racism, discrimination, housing instability, food shortage, familial deportation, witnessing of violence, or any other difficulty you would feel comfortable sharing with me. I am interested not only in whether you had one or several of these experiences but also, if so, how the experience affected you and the how you managed to persevere in spite of the difficulty.

The experience that you share with me can be difficult to talk about, but please remember that

you do not have to answer any question that you are not comfortable talking to me about. In the process of the interview, if you choose to pass on a question, I may ask you if you need either more time to answer the question or to move onto the next question entirely. This is for clarification. But ultimately you are free to tell me as much or as little as you choose to share.

Do you have any questions before I begin?
Let's begin the interview.

I would first like to take a moment to collect some brief demographic information from you.

1. Currently, how old are you?
2. When you think of your identity, do you identify first by your ethnicity or your gender?
    A. Probe: Can you tell me more about that?
3. How do you identify yourself regarding your gender/pronouns?
4. What is your current occupation?

I would like to move forward with the questions specific to our study. Remember, if any questions make you uncomfortable, we can always skip entirely or come back to it later.

I want you to recall back on your childhood, meaning before the age of 18. I am going to show you a list of many different events **(Share Zoom Screen with List of different Negative Events)**

5. I am wondering whether you have experienced any of these experiences:
    a. Probe: Could you tell me at what age or age range you experienced each of these experiences?
6. Thinking of these experiences that you just identified, which one or two do you feel were the most difficult for you to go through as a child?
    a. Probe: Can you describe how you coped with the feelings you had from this experience?
    b. Probe: Do you think any of your previous negative childhood experiences contributed to how you experienced the issue that you just described?
7. Was there anyone that you were close to that you talked to about this experience when it was happening?
    a. Probe: How did this impact you when you were a child?
    b. If participant says no:
        i. Probe: What about your parents? What about your friends? Was there anyone else?
        ii. Probe: Was there a particular reason why you decided not to share what you were experiencing at that time?
        iii. Probe: How did it make you feel to carry all of this on your own?

iv. Probe: Looking back now, how did you eventually recover from this experience? Or how did you cope on your own?

8. What were the feelings that you carried after the experiences that you had?
    a. Probe: could you tell me more about that?

9. I am going to ask you to comment on the different types of social support and whether <u>if</u> you have received that social support, during all your events, <u>if</u> that would have helped you. Briefly, social support is defined as: having friends and other people, including family, to turn to in times of need or crisis to give you a broader focus and positive self-image. I completely understand that multiple types of social support could have been beneficial. If so, please share that with me **(<u>Share Zoom Screen with support type list</u>).**
    a. Probe: How do you think X would have helped you when you were a child?
    b. Probe: How do you think X would not have helped you when you were a child?

10. Is there anything else that you would like to add that we have not addressed?

Appendix B

Adapted Interview Protocol

Before beginning the interview/recording (Read only the Italics)
I would like to thank you for participating in my study. Before we get started with the interview, I would like that you switch off your camera. I chose to do the interviews with the cameras off as it will help add an extra layer of privacy for you. This means that when I begin the recording, only your audio will be saved. You may find that having the cameras off is more comforting – this is a bonus as for why cameras need to stay off.

Ensure that the camera is off before recording begins.
The purpose of this study is to understand the range of potential negative childhood hardships that can be experienced among young Latinx individuals before the age of 18. For the interview, we are interested in learning about the different types of childhood experiences you may have encountered such as racism, discrimination, housing instability, food shortage, familial deportation, witnessing of violence, or any other difficulty you would feel comfortable sharing with me. I am interested not only in whether you had one or several of these experiences but also, if so, how the experience affected you and the how you managed to persevere in spite of the difficulty.

The experience that you share with me can be difficult to talk about, but please remember that you do not have to answer any question that you are not comfortable talking to me about. In the process of the interview, if you choose to pass on a question, I may ask you if you need either more time to answer the question or to move onto the next question entirely. This is for clarification. But ultimately you are free to tell me as much or as little as you choose to share.

Do you have any questions before I begin?
Let's begin the interview.

I would first like to take a moment to collect some brief demographic information from you.

1. Currently, how old are you?
2. When you think of your identity, do you identify first by your ethnicity or your gender?
    a. Probe: Can you tell me more about that?
3. How do you identify yourself regarding your gender/pronouns?
4. What is your current occupation?

I would like to move forward with the questions specific to our study. Remember, if any

questions make you uncomfortable, we can always skip entirely or come back to it later.

I want you to recall back on your childhood, meaning before the age of 18. I am going to show you a list of many different events **(Share Zoom Screen with List of different Negative Events)**

5. I am wondering whether you have experienced any of these experiences:
    a. Probe: Could you tell me at what age or age range you experienced each of these experiences?

6. Thinking of these experiences that you just identified, which one or two do you feel were the most difficult for you to go through as a child?
    a. Probe: What emotion or feeling comes to your mind regarding this experience?
        i. Explore the numbness if brought up.
    b. Probe: Can you describe how you coped with the feelings you had from this experience?
        i. If school helped with coping:
            1. Probe: How did school help cope with these adversities?
        ii. If family member or friend was deported
            1. Probe: How did you cope when your family member or friend was deported?
            2. Probe: As a child, did you know what deportation was?
    c. Probe: Do you think any of your previous negative childhood experiences contributed to how you experienced the issue that you just described?
        i. Re-worded Question: Did you experience a different emotion for a different adversity?

7. Was there anyone that you were close to that you talked to about this experience when it was happening?
    a. Probe: How did this impact you when you were a child?
    b. If participant says no:
        i. Probe: What about your parents? What about your friends? Was there anyone else?
        ii. Probe: Was there a particular reason why you decided not to share what you were experiencing at that time?
            1. Explore how come he/she/they felt the need to hide this if brought up? (CPS? Immigrant family member? ashamed?)
        iii. Probe: How did it make you feel to carry all of this on your own?
        iv. Probe: Looking back now, how did you eventually recover from this experience? Or how did you cope on your own?

8. What were the feelings that you carried after the experiences that you had?
    a. Re-worded: Or How did X adversity change who you are today?
    b. Probe: could you tell me more about that?
        i. Explore the sense of independence if brought up? Feelings around that?

9. I am going to ask you to comment on the different types of social support and whether if you have received that social support, during all your events, if that would have helped you. Briefly, social support is defined as: having friends and other people, including family, to turn to in times of need or crisis to give you a broader focus and positive self-image. I completely understand that multiple types of social support could have been beneficial. If so, please share that with me **(Share Zoom Screen with support type list).**
    a. Probe: How do you think X would have helped you when you were a child?
    b. Probe: How do you think X would not have helped you when you were a child?
        i. Explore participants wanting adults that looked like them/could understand them (if brought up).

10. Is there anything else that you would like to add that we have not addressed?

Appendix C

Tables Presented to the Participants during their Individual Interviews

List of Potential Negative Childhood Experiences	
Have you experienced any of the following events before the age of 18?	
Housing instability	Bullied
Lack of resources (health care)	Death within the family
Food insecurity	Death within peer group
Racism	Felt unsafe in your neighborhood
Discrimination	Foster care system
Family or friend was deported	Juvenile justice system
Poverty	Single-parent homes
Frequent family financial problems	Violent crime (non-sexual)
Needing to take adult responsibilities	Witnessed community violence
Absence of a parent	**Any other adversity not listed?**

Social Support Types and Sources	
Type	**Definition and/or Examples**
Emotional Support	Expressions of empathy, love, trust and caring
Instrumental Support	Tangible aid and services
Informational Support	Advice, suggestions, and information
Positive Interaction / Social Companionship	Spending time with others to reduce stress, having a good time, getting together, etc
Affection	Getting hugged, being told that you are loved, etc.

Interview Questions:

1. If you would have received one or more of these social support types; which one or two do you think would have helped you? If so, how?
2. Are there any types that you think would have not helped you? How come?

Examples of Sources of Social Support	
Individual therapy	Group therapy (Co-ed and/or same sex)
Talking to your peers	Talking to your family unity (parents, siblings)
Talking to adults (teachers/mentors)	Social groups / clubs
Religion organization	Online social networks
Community organization	**Any others that were not listed?**

Interview Questions:

1. If you could have received one or more of these types of social support sources, during your negative event(s), what source(s) do you think would have helped you? How?
    a. Please share any other sources that you've experienced that perhaps was not listed.
2. Are there any sources that you think would have not helped you? How come?

Table 2: Adversities discussed during the interview, number of participants experiencing similar adversity, and the number of quote references.

Adversity	# Of Participants with Adversity	# Of Quote References
Financial Setback / Frequent Financial Instability	15	29
Adult Responsibility	11	31
Community Violence	11	29
Food Insecurity	10	17
Deportation-Related	10	19
Racism-Related	10	31
Bullied	9	26
Housing Instability	8	32
Temporary Single Parent household / inconsistent parent	7	11
Poverty	6	9
Discrimination	6	9
No healthcare or inconsistent healthcare	5	5
Single Parent Household	5	9
Felt Unsafe due to Community Violence	4	11
Parental Verbal Arguments	4	4
Parental Mental Health	4	8
Sibling Separation	4	8
Parental Separation / Divorce	3	4
Microaggressions	3	3
Traumatic Friend Death	3	3
Familial Death	3	5

Table 2: Adversities discussed during the interview, number of participants experiencing similar adversity, and the number of quote references continued

Adversity	**# Of Participants with Adversity**	**# Of Quote References**
Familial Incarceration	2	2
Physical Abuse	2	2
Neglect	2	2
Violent crimes (non-sexual)	2	3
Juvenile Justice System	1	1
Fat Shamed / Forced Diets	1	1
Sexually Assaulted	1	1
Verbal Abuse	1	1
Community Shootings (Mass Shootings)	1	1
Media Exposure of Shootings	1	2

CHAPTER 3: Investigating whether Social Support Subtypes Moderates the Relationship between ACEs and Risky Drinking among Latinx Young Adults

ABSTRACT

Background: Latinx young adults have the second-highest rates of alcohol use (42.5%) and heavy episodic drinking (HED) (25.7%) compared to non-Latinx White adults who report the highest rates of use and HED. There is a positive association between adverse childhood experiences (ACEs), alcohol use, and AUDs among Latinx populations. ACEs are childhood events occurring in one's family / social environment before age 18 that may vary in mental distress and physical severity. Researchers have found Latinx youth experience more ACEs than non-Latinx White youth and other minority youth. Studies have shown how social support has a buffering effect between life stressors and various mental health and behavioral outcomes. To date, one study tested whether social support moderates the relationship between ACEs and alcohol use among Latinx young adults; this study found that social support did not moderate the association between ACEs and alcohol use. Risky drinking was not assessed in the research, and social support subtypes were not independently examined as potential moderators (i.e., emotional support, informational support, etc.). This study aimed to test whether social support subtypes independently buffer the relationship between ACE scores on risky drinking among Latinx young adults. Its findings have the potential to inform future interventions aimed at reducing risky drinking among Latinx young adults by integrating social support components.

Methods: Questionnaire data from 143 second-generation, Californian, Latinx young adults were collected between January 2022-August 2022. Data was collected using a variety of different recruitment methods such as social media, emails/list-servs across CSUs, UCs, and community colleges, on foot methods across Latinx concentrated communities, snowball sampling, and physical flier postings across multiple college campuses. The questionnaire

assessed for ACEs, measured by the Adverse Childhood Experience Questionnaire, risky drinking, measured by the Alcohol Use Disorder Identification Test, and social support subtypes, measured by the Medical Outcomes Study Social Support Scale. Multiple moderation analyses were conducted to examine whether different social support types buffered the relationship between ACEs and risky drinking outcomes (AUDIT total score, AUDIT-C, and heavy episodic drinking).

Results: Of the collected sample, 59.4% identified as male, and 40.6% identified as female. The average age of the sample was 24 years of age. More than half of the participants self-identified as Mexican, Mexican American, or Chicano. Multivariable linear regression demonstrated ACEs were associated with the AUDIT total score, AUDIT-C score, and heavy episodic drinking. Of 15 moderation analyses, only emotional/information support buffered the relationship between ACEs and the AUDIT total score. However, the buffering effect was antagonistic, which contradicted my initial hypotheses.

Discussion: Future researchers should aim to reduce ACEs' impact on risky drinking among this unique population. One way we can do that is to get practitioners, interventionists, and school personnel to continue to support its Latinx youth by integrating them into early prevention programs to address topics specific to adverse lived experiences, alcohol consumption, and substance use. Perhaps this potential integration during adolescent years can help decrease the existing association between ACEs and risky drinking that researchers continue to see in later adult years.

INTRODUCTION

Although Latinx usually refrain from drinking alcohol (31.8%) compared to non-Latinx Whites (15.5%),[14] Latinx young adults who do consume alcohol are more likely to consume in higher volumes.[36] For example, in a study, a higher percentage of Latinx drinkers reported drinking three or more alcoholic beverages per usual drinking day (42.4%) compared to non-Latinx Whites (31.6%).[37] This is problematic as recent data has shown 9.4% of Latinx young adults between the ages of 18-25 have been diagnosed with an alcohol use disorder (AUD)[1] compared to other racial/ethnic minority groups such as African Americans (5.6%)[39] and Asians/Native Hawaiians and other Pacific Islanders (6.6%).[38] When considering second-generation status, one study found 90.4% of Latinx individuals consumed alcohol in their lifetime compared to individuals who are Mexico born and migrated at 13 years or older (81.88%).[40]

Studies have found that Latinx individuals experience more alcohol-related consequences than non-Latinx White groups. Specifically, Latinx adults have higher rates of alcohol-related morbidity and mortality[43] because of the higher prevalence of chronic alcoholic liver disease among Latinx individuals than in any other racial/ethnic group.[44,45] In addition to the physical health consequences of heavy alcohol consumption, Latinx adults also suffer disproportionately from alcohol-related traffic accidents,[11] alcohol-related driving deaths,[46,47] and are disproportionality arrested for alcohol-related DUIs. [12] These alcohol-related consequences may pose additional social and legal challenges for some Latinx communities.

Because of the heavy alcohol consumption disparities and the high rates of alcohol-related consequences among Latinx in the U.S., it is critical to understand what contributes to alcohol use as well as heavy episodic drinking. Studies have shown associations between adverse

childhood experiences (ACEs) and alcohol use,[23] alcohol abuse,[68] and alcohol use disorders,[18] across multiple racial and ethnic groups, including the Latinx population in the U.S.[16,33]

Adverse childhood experiences refer to the negative childhood events/hardships that an individual experienced either in their social and familial environment before the age of 18.[147] The events may differ in severity and may cause long-lasting harm or distress to any individual across different stages of development.[147] Studies have found that Latinx and African American populations experience more ACEs than non-Latinx Whites.[23,25] Specifically, Latinx populations experience more household mental illness,[25] household alcohol use disorders, and emotional and physical abuse compared to non-Latinx Whites and African American subgroups.[23]

Although studies have demonstrated the relationship between ACEs and alcohol use among Latinx populations, there is a shortage of research testing the association between ACEs and risky drinking (e.g., heavy episodic drinking). Furthermore, few studies have tested what factors potentially buffer or moderate the association between ACEs and risky drinking. Thus, it is critical to investigate what factors might blunt the effects of ACEs on alcohol use in this population to help facilitate the development of interventions to reduce the harmful use of alcohol in populations of Latinx who experience adverse events earlier in childhood. Social support may have the potential to buffer the relationship between ACEs and risky drinking, given research has demonstrated evidence of social support buffering the association between a negative experience and a negative health outcome. For example, one study found Latinx populations who had peer social support had reduced levels of depressive symptomatology despite experiences with relational victimization.[32]

To date, only one study has tested whether social support moderated the relationship between ACEs and alcohol use among Latinx adults.[33] Results from the study found social

support did not moderate the association between ACEs and alcohol use; however, limitations to the study may preclude definitive conclusions about the role of social support in blunting the effects of ACEs on alcohol use in this population.[33] First, the study's results were limited to vague response options measuring alcohol use (*Never*, *Previous, or Current*), because risky drinking was not measured. The measures used to assess alcohol consumption did not measure the frequency or quantity of alcohol consumption. Second, the social support measure used was the Interpersonal Support Evaluation List which only measures emotional support, instrumental support, and sense of belonging.[31] This measure was not comprehensive enough as it did not measure other important subtypes of social support, such as informational support and positive interaction.[31]

Researchers have yet to explore how multiple social support subtypes impact the relationship between ACEs and risky drinking–such as heavy episodic drinking. This study aims to test whether social support subtypes independently buffer the relationship between ACE scores on risky drinking among Latinx young adults.

Theoretical Framework

This study was guided by the Stress Buffering Hypothesis. According to the Stress Buffering Hypothesis, any mild to severe event (e.g., ACEs) experienced by an individual has the potential to be associated with an individual's reduced well-being and negative behavioral health outcomes such as risky drinking.[75] Four different forms of social support are theorized to buffer the impact of a stressor on an individual's mental health and behavioral health outcomes.[75] The theoretical constructs include **1)** emotional support, **2)** informational support, **3)** social companionship, and **4)** instrumental support.[75] Esteemed support, also regarded as emotional support, refers to the information a person receives that allows them to feel both accepted and

esteemed.[75] Informational support refers to an individual receiving help in either defining, understanding, or coping with the adversity/problematic event.[75] Social companionship is defined as spending time with other individuals in either leisure or recreational activities.[75] Lastly, instrumental support refers to receiving financial aid, needed services, or material resources as a form of support.[75] This study will also measure affectionate support, given its availability to measure this construct as a form of support. Affectionate support refers to behavioral manifestations of love, such as hugging an individual or being hugged by someone.[83] For this study, it was critical to distinguish the multiple types of social support, as social support can be defined and may be experienced differently across individuals.

Hypotheses

The research described tested the following hypotheses:

1. **Hypothesis 1:** There will be a positive association between ACEs and risky drinking outcomes among Latinx participants.
2. **Hypothesis 2:** A positive association between ACEs and risky drinking will have a smaller slope, indicating a weaker association, among Latinx participants who have higher levels of **1)** social support total score, **2)** emotional/informational support, **3)** instrumental support, **4)** positive social companionship and **5)** affection compared to Latinx participants with lower levels of these constructs.

METHODS

Sampling & Recruitment Methods

Prior to recruitment, I obtained approval by San Diego State University IRB (Protocol Number: HS-2021-0122) to conduct the study. Once approval was obtained, I promoted various recruitment strategies to recruit young Latinx adults to participate in the study. First, I attempted to recruit a young adult Latinx sample using promotional advertising techniques on the social media platform Instagram. Initially, the recruitment flier linked prospective participants to a questionnaire to screen potential participants for eligibility. Initial inclusion criteria included people who **1)** identified as second-generation Latinx, **2)** resided within California, **3)** were between the ages of 19 and 24, **4)** experienced at least one childhood adversity experience, and **5)** consumed 4+ alcoholic beverages (for women) or 5+ alcoholic beverages (for men) within a 2-hour setting. Other inclusion criteria were specific to their willingness to participate in a 35–45-minute online questionnaire and provide an email address for incentive purposes. Participants were excluded from participating in the study if they did not meet the eligibility, participated in the zoom interview that attempted to answer the qualitative objectives, and indicated alcohol consumption at the time of wanting to take the online questionnaire for the quantitative phase.

Obtaining hundreds of bot data daily, more so than real human data, motivated me to modify my recruitment approach. After the recruitment challenges, I modified the recruitment method and some eligibility criteria. First, the recruitment method no longer utilized paid Instagram advertising techniques as it was responsible for the receipt of hundreds of bot data and the receipt of ineligible participants who indicated otherwise. Much of my time was spent on screening bot data. The new recruitment strategies included: posting and passing out fliers in Latinx-concentrated communities, San Diego State University, and community colleges while

also emailing the flier to Latinx-specific email listservs and organizations across several California State University and University of California campuses as well as several community colleges. Additionally, I utilized more active social media techniques, such as direct messaging Latinx young adults to share the recruitment flier among their inner circle of friends and family and posting on other Latinx-specific Facebook Groups.

As noted above, I decided to expand on the eligibility criteria after significant delays in sufficient weekly participant recruitment. Specifically, the age range was expanded to include young adults between 19 and 30. This criterion change was done due to numerous friends, family members, and media personnel sharing their inability to partake in my study due to not meeting the age range despite meeting all other criteria listed in my study. Additionally, I modified the HED criterion to include consuming 4+ alcoholic beverages (for women) or 5+ alcoholic beverages (for men) on any one occasion during the past 30 days due to several participants screening out on this particular eligibility question. Because the inclusion criteria were too strict, it hindered my ability to recruit participants promptly; thus, a slight modification was conducted to help reduce potential participants from screening out.

Data Collection

Regardless of the recruitment method, participants completed an initial online screening questionnaire to assess their eligibility for the study. Before taking the eligibility questionnaire, participants were directed to a brief message that discussed the study procedures, risks, benefits, and confidentiality of the eligibility questionnaire. Participants were asked to consent or not consent in participating in the screening questionnaire. If prospective participants consented and met the study eligibility criteria, they were then directed to a larger online questionnaire that contained the informed/full consent form for the research study. Participants gave consent

electronically using the one-click method. This method is often sought out in online research. Specifically, researchers will replace the consent signature lines with clickable response options such as "I consent" or "I do not consent."[148] In my study, those who did not consent were thanked for their time and were not permitted to move forward with the questionnaire.

Participants who consented to participate were asked questions measuring participant demographics, drinking quantity and frequency as well as risky drinking (e.g., the alcohol use disorders identification test or AUDIT,[82] Adverse Childhood Experience Questionnaire (e.g., ACEs,[27] Medical Outcomes Study Social Support Survey,[83] Perceived Social Support (Family/Friend) Scale,[149] Center for Epidemiological Depression Scale (CDES)[150] the Generalized Anxiety Disorder Scale[85] as well as other measures of alcohol use and drinking consequence. The focus of this present study was on the measures of risky drinking, ACEs, and social support. The online questionnaires were created and administered through Qualtrics, a cloud-based questionnaire software. The questionnaire took an average of 42 minutes to complete.

Assessment of Bot Data Procedures

I went through an extensive procedure to assess for bot data. First, geolocation and IP address data[151] collected by Qualtrics was examined to screen for duplicate responses from the same person, assess for questionnaire bots, and ensure California residence. Five questions were asked to re-assess for eligibility to screen out questionnaire bots. These questions included re-confirming both 1) age and 2) gender in a text response question. In addition, there was an attention-check question that instructed participants to select a specific response option; this question was meant to capture both bots and quick questionnaire takers.[151] Two text questions were meant to capture nonsensical replies to questions such as 4) What is your favorite holiday

and why, and 5) What is your favorite animal and why. These open-ended response questions[151] were effective in helping me capture numerous bots. Other items were monitored throughout daily data bot screenings such as time of questionnaire completion, questionnaire completion timestamps, and responses to a text question specific to which adversities were hardest to experience during childhood. Bots often provided nonsensical responses or similar responses across multiple completed questionnaires, with different IP addresses, when provided with a text response question.

The bot-detecting lengths were taken to ensure that limited funds did not go towards incentivizing a bot rather than a real human being. Participants who completed their questionnaire with a minimum time of 20 minutes or more, who resided in California as seen in the geolocation data and did not fail these bot-detecting questions were sent a $10 Amazon Electronic Gift Card as an incentive. Data were collected between January 2022 and August 2022.

Measures

Demographics

Ten questions assessed participants demographics and included: gender (Males, Transmasculine, Transfeminine, Female, Other), age, Latinx origin (Mexican, Mexican American, Chicano; Puerto Rican; Cuban; and a text response where participants had an option to type down their origin), educational status (No schooling; Nursery School; Grades 1 through 11; 12th grade - no diploma; High school diploma; GED or alternative credential; some college credit, but less than 1 year of college; 1 or more years of college, no degree; Associates degree; Bachelor's degree; Master's degree; Professional degree beyond Bachelor's degree; and Doctoral degree).[152] An item on marital status was asked (Never married; Married; Separated; Divorced;

Widowed), income (<$15,000; $15,000-$24,999; $25,000-$34,999; $35,000-$49,999; ≥$50,000)[153,154], employment status (Employed; Unemployed; Homemaker; Student; Retired), and how they came to discover the recruitment flier (flier post located at SDSU; flier post located in community; a friend or family member shared the flier; social media; and a text response where participants had an option to type down a response).

Adverse Childhood Experiences

The Adverse Childhood Experience Questionnaire was used to assess adverse childhood experiences.[27] The measure is a 10-item questionnaire that measures the presence or absence (yes/no) of different types of adversities that occurred before the age of 18.[27,155] Of the ten items, five questions assess personal afflicted adversity while the remaining five questions assess adversity related to other family members.[156] For example, participants were asked whether they had experienced child maltreatment, familial disruption, household dysfunction, and other childhood adversities.[27,155] A point was added for every question the participant answered in the affirmative to determine ACE severity.[27,155] Latinx young adults were screened for a minimum of having experienced one childhood adversity; thus, each participant could have a total ACE score between 1 and 10. Higher scores indicated more adversity. A score of 4 or more on the ACE questionnaire is considered serious as it is associated with leading causes of death in later adult years, such as liver disease, chronic lung disease, cancers, and heart disease.[27] In the current study, the ACE scale demonstrated good internal consistency (Cronbach's alpha = .690).

Social Support

The Medical Outcomes Study Social Support Survey (MOS-SS) was used to measure social support subtypes which contains subscales that map onto the Stress-Buffering Hypothesis Framework.[83] MOS-SS is a 20-item measure where 19 questions assessed four various dimensions of social support, **1)** Tangible (**instrumental**) support ("Someone to prepare your

meals if you were unable to do it yourself), **2)** Emotional/Informational support (**combined emotion and information support**); ("Someone to give you information to help you understand a situation"), **3)** Positive interaction (**social companionship)**; ("Someone to do something enjoyable with"), and **4)** Affection ("Someone who hugs you").[83] All items were answered using a 5-point Likert scale, where 1 = *None of the time* and 5 = *All of the time*.[83] Participants also had the option of selecting 'Don't Know' or 'Refused.' In this study, tangible support demonstrated a Cronbach's alpha = .772, emotional/informational Cronbach's alpha = .897, positive interaction Cronbach's alpha = .840, and affection had a Cronbach's alpha = .758. For this study, the MOSS-SS had an excellent internal consistency, Cronbach's alpha = .955. These four social support constructs were tested individually to test whether each social support dimension moderated the association between ACEs and risky drinking among Latinx young adults. Thus, total scores were computed for each dimension as well as for MOSS-SS scale overall. For these items, they were averaged so that 1 = low and 5 = high support.

Alcohol Use and Risky Drinking

I measured risky drinking behavior using the Alcohol Use Disorders Identification Test (AUDIT) questionnaire. The AUDIT is a 10-item questionnaire that is used to measure excessive drinking and alcohol-associated problems within the past year.[82] In this scale, the first three questions of the AUDIT measured drinking quantity, frequency, and heavy episodic drinking.[82] The remaining seven questions assess alcohol dependence symptoms and harmful alcohol use.[82] Each item from the questionnaire is measured using a 5-point Likert response option where 0 = *Never* and 4 = *Four or more times a week*.[82] The AUDIT is scored by summing up the values from each item. Using the AUDIT measure, one outcome measured was the AUDIT total score which was computed. If a participant scored between 0 and 7 they were

classified as *low risk*; if a participant scored between 8 and 15 they were then classified as *at risk.*[82] Additionally, if a participant scored between 16 and 19 then they were classified as *high risk,* and participants who scored between 20 and 40 were classified as severe risk.[82] In the current study, the AUDIT demonstrated good internal consistency (Cronbach's alpha = .877).

In addition to the AUDIT total score that was computed, I computed a total score for the first three questions of the measure, which measures alcohol quantity, frequency, and heavy episodic drinking.[157] These questions make up what is known as the AUDIT-C.[157] This 3-item total score made up its own outcome variable and was further analyzed in this study. In the current study, the AUDIT-C demonstrated poor internal consistency (Cronbach's alpha = .562). Another measured question captured from the AUDIT was the single item that measures heavy episodic drinking.[82].

Analytic Approach

Prior to running the multivariable regression analyses, I ran a descriptive test on the study demographic variables (i.e., gender, age, Latinx origin, educational status, marital status, income, employment status, and recruitment type), the ACE measure, social support, AUDIT, AUDIT-C, and engagement of heavy episodic drinking in the past year.

To test whether social support subtypes independently moderated the relationship between ACEs and the drinking outcome measures, I conducted three hierarchical multivariable regression analyses on: **1)** AUDIT Total Score, **2)** AUDIT-C total score, and **3)** the single item measure of heavy episodic drinking. To test whether social support and social support subtypes (e.g., tangible, emotional, etc.) moderate the relationship between ACE and risky drinking, I first created standardized values of the predictor variables by centering. This removes the possibility of multicollinearity.[158] Next, interaction terms between ACE exposure and social support (the

total support score across each of the support subtypes) as well as ACE exposure and the following social support subtypes: emotion/information support, tangible support, positive social companionship, and affection was created. Participant age, gender, origin, level of education, income, employment status, and marital status were entered as covariates (categorical covariates were dummy coded).[16] For the hierarchical models, covariates, ACEs, and each social support (total and subscales) were entered separately in the first step. The interaction term was then each entered in the second step. Significant changes in variance accounted for between model steps indicates the addition of the interaction terms uniquely contributed to model prediction. It was critical that all social support moderators were tested separately to reduce multicollinearity from occurring; thus, there were a total of 15 moderation analyses conducted. A significant interaction term indicates moderation exists.[159] Significant interactions were plotted to further explore at what specific level (low or high social support) each moderator affected the association between ACEs and risky drinking.

RESULTS

Assessing Eligibility and Research Questionnaire Submissions

There was a total of 2,534 cases who entered the eligibility survey. Of these cases, 1,388 indicated they lived in California despite geolocation estimate data indicating otherwise. The remaining 1,146 had geolocation data showing a residence within California. Of those who entered the eligibility survey, only 1,645 had completed the eligibility questionnaire (i.e., answering all nine items and thus directed to the research questionnaire). It is critical to note that selecting certain responses in the eligibility survey would allow people and potential bots to move forward to the full research questionnaire. This experience led me to thoroughly screen

every questionnaire submission in the full research questionnaire (i.e., those who consented and provided data to the research questions) before incentivizing.

A total of 1,357 cases were directed to the research survey. I screened the data for four criteria which were used to flag exclusion criteria for the study: bots, duplicates, time completion, and geolocation. From those who were directed into the research survey, 1,202 cases were identified as bots based on how they answered text-based questions meant to identify bots; additionally, 411 were identified as duplicates based on having the same IP addresses with the same time-stamps completions. A total of 380 cases did not meet the minimum completion time requirement (20 minutes) and 603 cases indicated they resided in CA despite geolocation maps indicated otherwise. Many cases were flagged across one or more of these areas. After screening cases out, I've achieved a total sample of 143 participants; this is the sample that was incentivized and analyzed for this study.

Data Screening and Assessing the Assumptions of Normality

There was an assessment of the overall assumptions of normality. The following tests were run to assess the assumption of multivariate normality: Mahalanobis distance, cooks test, and leverage tests were performed for each of the five multivariable models. Results indicated the data for six participants met the criteria for a multivariate outlier; however, these participants were not removed given that this study is an interim analysis, and I did not want to reduce the sample size even more.

Additivity

There was an assessment of the additivity between the predictor variables and the moderators. After conducting a correlation with these variables, it was determined that there was an additivity between the total social support scale and the dimensions that make up the support

scale (Table 3). However, these high correlations were expected due to the dimensions coming from the same scale. The high correlations were dealt with once centering of all the moderators took place.

Table 3: Variable Correlation Matrix

	ACE	AUD-10	AUD-C	HED	SS Total	Emo/Inf S	Tang S	Affect S	Comp S.
ACE	1								
AUD-10	.28**	1							
AUD-C	.22**	.76**	1						
HED	.23**	.69**	.78**	1					
SS. Total	-.07	-.18*	-.16	-.06	1				
Emo/Inf S.	-.06	-.19*	-.18*	-.06	.96**	1			
Tang S.	-.12	-.16	-.17*	-.05	.85**	.77**	1		
Affect S.	-.04	-.10	-.08	-.04	.87**	.77**	.66**	1	
Comp. S	-.02	-.18	-.11	-.04	.85**	.76**	.60**	.74**	1

SS Total = Social Support Total Score; Emo/Inf Support = Emotional and Informational Support; Tang Support = Tangible Support; Affect Support = Affectionate Support; Companion Support = Positive Social Companionship Support.
** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Linearity, Homoscedasticity, and Heteroscedasticity

Multiple histograms, scatterplots, and Normal P-P plots were conducted to assess for the remaining assumptions of normality, linearity, and homoscedasticity/heteroscedasticity on the study variable of interest. Across all outcomes, multiple histograms were conducted to assess for normal distribution of the variable. All outcomes assessed in the study showed a normal

distribution. This is especially critical when a study has a small sample size, such as in this study.[160]

To examine linearity of the outcomes, Normal P-P plots were conducted. All outcomes examined in the study met the linearity assumption as the data-points were closely centered around the linear plot line. This is especially significant as it indicates the linear model was able to predict the data accurately.[160] Lastly, homoscedasticity and heteroscedasticity was examined by viewing the scatter plot provided. To determine homoscedasticity, the residuals provided in the plot should be randomly scattered around zero.[160] Heteroscedasticity is shown when the residuals are not evenly distributed around the central line in the plot.[160] The AUDIT total outcome generally met the assumptions of homoscedasticity and heteroscedasticity; however, the AUDIT-C and the single HED item did not meet these assumptions. This could result from these outcomes being composed of three items (AUDIT-C) or a single item (HED).

Sample Characteristics

Categorical demographic variables were collapsed to create dummy coded variables. The collapsed response categories were categories with low-frequency rates in the study. The collapsed demographic variables include gender, employment, education, and marital status. As such, I only reported the collapsed categories for the study.

A description of the sample demographics is seen in Table 4. Of the collected sample, 59.4% are male, and 40.6% are female. The average age of the sample was 24.32 (SD: 2.95). Over half of the sample (55.2%) self-identified as Mexican, Mexican American, or Chicano; 10.5% identified as Puerto Rican, while 8.4% identified as Cuban. The remainder self-identified as “other” to the origin question (25.9%). The majority of the sample were not married (69.9%),

were employed (67.8%), and were mostly recruited via social media (38.5%) or by word of mouth (30.1%). 77.7% of the sample scored 4+ on the ACE measure.

Table 4: Sample Characteristics (N=143)

Variable	**N (%)**	***M***	**SD**
Age		24.32	2.95
Gender			
Male	85 (59.4%)		
Female	58 (40.6%)		
Origin			
Mexican, Mexican American, Chicano	79 (55.2%)		
Puerto Rican	15 (10.5%)		
Cuban	12 (8.4%)		
Other	37 (25.9%)		
Highest Degree			
No High School Degree or Less	11 (7.7%)		
High School Degree or Equivalent	33 (22.4%)		
Some College, No Degree	39 (27.3%)		
Some College Degree	61 (42.7%)		
Marital Status			
Not Married	100 (69.9%)		
Married	32 (22.4%)		
Separated	10 (7.9%)		
Employment Status			

Table 4: Sample Characteristics (N=143) Continued

Variable	N (%)	*M*	SD
Employed	97 (67.8%)		
Unemployed	19 (13.3%)		
Student	27 (18.9%)		
Income			
<$15,000	6 (4.2%)		
$15,000 - $24,999	20 (14.0%)		
$25,000 – $34,999	35 (24.5%)		
$35,000 - $49,999	52 (36.4%)		
≥$50,000	27 (18.9%)		
Recruitment			
Flier: SDSU	16 (11.2%)		
Flier: Community	20 (14.0%)		
Friend or Family	43 (30.1%)		
Social Media	55 (38.5%)		
Other	9 (6.3%)		

Predictor, Moderator, and Outcome Characteristics

Means, standard deviations, skewness, and kurtosis descriptive statistics were obtained from each independent and moderator variable of interest (Table 5). The total score for the Adverse Childhood Experience Questionnaire had a mean of 5.32 (SD: 2.44). The mean of the Medical Outcomes Study Social Support Survey (MOSS-S) scale was 3.19 (SD: .74). The emotion/information subscale had a mean of 3.14 (SD: .78). In contrast, the tangible support

dimension had a mean score of 3.12 (SD: .81). The affectionate support subscale had a mean score of 3.25 (SD: .93). The positive social companionship subscale had a mean of 3.26 (SD: .93). The total AUDIT had a mean score of 17.14 (SD: 8.39) indicating a high level of risky drinking in this sample. The mean of the AUDIT-C was 5.93 (SD: 2.31). A mean of 4 or more is an indication of risky drinking behavior. Lastly, the single item heavy episodic drinking (HED) measure had a mean of 1.97 (SD: .94).

Table 5: Descriptive Statistics for the ACE, Social Support, and Risky Drinking Outcome Measures

Measures	**Mean**	**SD**	**Skewness**	**Kurtosis**
Adverse Childhood Experiences	5.32	2.44	.02	-.75
Social Support Total Score	3.19	.74	.47	.10
Emotional/Information Dimension	3.14	.78	.41	-.02
Tangible Support Dimension	3.12	.81	.39	-.11
Affectionate Support Dimension	3.25	.93	.36	-.50
Positive Social Compan. Dimension	3.26	.96	.10	-.34
AUDIT Total Score	17.14	8.39	-.19	-1.03
AUDIT – C Score	5.93	2.31	.09	-.34
Heavy Episodic Drinking	1.97	.94	-.20	-.70

Hierarchical Regression Results

Outcome: AUDIT Total. Four of the seven covariates were significant for the model testing whether the social support total score moderated the relationship between ACEs and the AUDIT total score. Specifically, identifying as a male compared to the reference group, female, was associated with higher AUDIT scores (β=.278, p = .001). Cubans also had higher AUDIT

scores compared to the reference group, other (β=.251, p = .005). Employed participants reported higher AUDIT scores compared to the reference group, students (β=.212, p = .034), while those with a high school degree (or equivalent) reported higher AUDIT scores than the reference group, obtained college degrees (β=.219, p = .017). As shown in Table 6, the relationship between ACEs and the AUDIT total was significant (β=.316, p < .001) and indicates that a higher number of adverse childhood events reported before the age of 18 is associated with significantly higher scores on the AUDIT total. Social support total and the interaction between social support total and AUDIT total were not significant (Tables 6 - 8).

For the other models testing whether each social support subtype moderates the relationship between ACEs and AUDIT total, the ACE measure was significantly and positively associated with the AUDIT total (all p-values <0.05; Tables 6 - 8); however, none of the social support subtypes were significantly associated with the AUDIT. An interaction term for one of the social support subtypes–emotional/informational–was significant (Table 6). The inclusion of the interaction term also significantly increased the variance accounted for in the model, $\Delta R2 = .285$, $\Delta F (1, 128) = 4.765$, $p = .031$. Figure 2 displays the relationship between ACEs, emotional/informational support, and scores on the AUDIT total. The relationship between ACEs and risky drinking is stronger with higher levels of emotion/information social support; this is indicated, given the steeper slope. The slope is much flatter for lower emotional/information social support levels. It indicates that the relationship between ACEs and risky drinking is weaker with low emotional/information social support levels. This contradicts my study hypothesis and the Stress Buffering Hypothesis theory, which indicates that high levels of social support should weaken the relationship between the stressor (ACEs) and the health outcome (risky drinking).

Table 6: The Effect of Moderator Variables (Social Support Total and Emotion/Information Support) on the Relationship Between ACEs and AUDIT-10

	Social Support Total			**Emot/Infor Support**		
Variable	**β**	R^2	**p**	**β**	R^2	**p**
Step 1: Main Effects						
ACE Score	.316	.238	<.001	.315	.241	<.001
Social Support	-.046	.329	.559	-.075	.332	.341
Step 2: Interaction Effect						
ACE Score x Social Support	.118	.341	.127	.162	.356	.031
	Adjusted R^2=.269, F=2.356, p = .127			Adjusted R^2=.285, F=4.765, p = .031		

*****Covariates entered: Age, Gender, Origin, Education, Marital Status, Income, & Employment Status

Table 7: The Effect of Moderator Variables (Tangible Support and Affectionate Support) on the Relationship Between ACEs and AUDIT-10

	Tangible Support			Affectionate Support		
Variable	**β**	R^2	**p**	**β**	R^2	**p**
Step 1: Main Effects						
ACE Score	.321	.235	<.001	.319	.233	<.001
Social Support	.011	.327	.893	.012	.327	.884
Step 2: Interaction Effect						
ACE Score x Social Support	.013	.327	.870	.056	.330	.468
	Adjusted R^2=.254, F=.027, p = .870			Adjusted R^2=.257, F=.529, p = .468		

*****Covariates entered: Age, Gender, Origin, Education, Marital Status, Income, & Employment Status

Table 8: The Effect of Moderator Variables (Positive Social Companionship) on the Relationship between ACE and AUDIT-10

	Positive Social Companionship		
Variable	**β**	**R**	**p**
Step 1: Main Effects			
ACE Score	.316	.24	<.001
Social Support	-.077	.33	.315
Step 2: Interaction Effec			
ACE Score x Social Supp	.355	.33	.250
	Adjusted R^2=.267, F=1.337 p = .250		

*****Covariates entered: Age, Gender, Origin, Education, Marital Status, Income, Employment Status

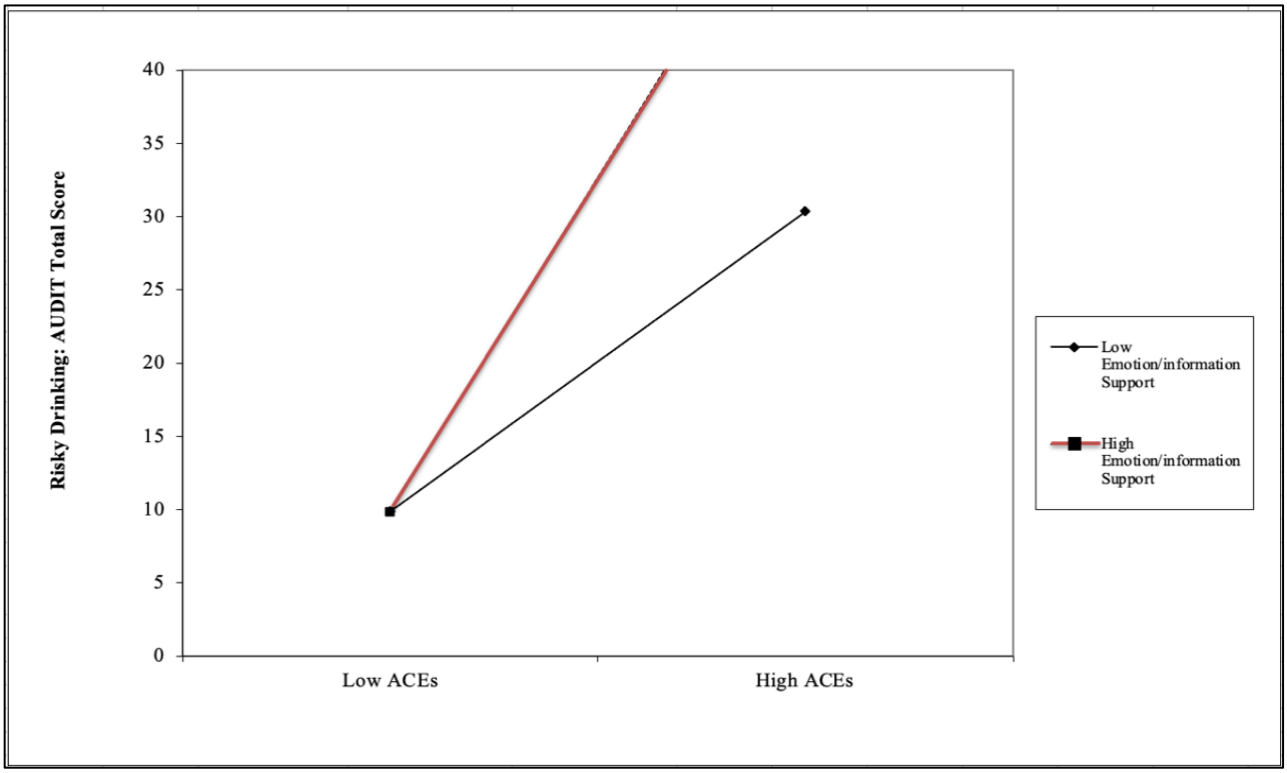

Figure 2: Moderating Effect of Emotion/Information Support on the Relationship between ACEs and Risky Drinking

Outcome: AUDIT-C. Table 9 shows the multivariable regression results for the models testing whether social support moderates the relationship between ACEs and the AUDIT-C. Two of the seven covariates for this model were significant. Specifically, having a high school degree, or equivalent, was associated with higher scores on the AUDIT-C compared to the reference group, obtained college degrees (β=.232, p = .031). Furthermore, being employed relative to being a student was associated with higher scores on the AUDIT-C (β=.203, p = .03). Scores on the ACE scale were positively associated with the AUDIT-C (β = .224, p = .006; Table 9); increases in ACE scores are correlated with increases in AUDIT-C scores. The relationship between the total social support score and the AUDIT-C was insignificant. The interaction between ACEs and social support total score was also not significant (Table 9). For the other models testing whether each social support subtype moderates the relationship between ACEs and the AUDIT-C, the ACE measure was significantly positively associated with the AUDIT-C (all p-values <0.05). However, none of the social support subtypes were significantly associated with the AUDIT-C, and none of the interaction terms for these models were significant (Table 9 - 11).

Table 9: The Effect of Moderator Variables (Social Support Total and Emotion/Information Support) on the Relationship Between ACEs and AUDIT-C

	Social Support Total			Emot/Infor Support		
Variable	**β**	R^2	**p**	**β**	R^2	**p**
Step 1: Main Effects						
ACE Score	.224	.186	.006	.233	.191	.006
Social Support	-.060	.232	.483	-.097	.237	.250
Step 2: Interaction Effect						
ACE Score x Social Support	.049	.234	.554	.097	.246	.231
	Adjusted R^2=.151, F=.352, p = .554			Adjusted R^2=.163, F=1.449, p = .231		

*****Covariates entered: Age, Gender, Origin, Education, Marital Status, Income, & Employment Status

Table 10: The Effect of Moderator Variables (Tangible Support and Affectionate Support) on the Relationship Between ACEs and AUDIT-C

	Tangible Support			Affectionate Support		
Variable	**β**	R^2	**p**	**β**	R^2	**p**
Step 1: Main Effects						
ACE Score	.221	.188	.007	.229	.181	.005
Social Support	-.058	.232	.500	-.019	.230	.819
Step 2: Interaction Effect						
ACE Score x Social Support	-.032	.233	.697	-.014	.230	.897
	Adjusted R^2=.149, F=.152, p = .697			Adjusted R^2=.145, F=.028, p = .867		

*****Covariates entered: Age, Gender, Origin, Education, Marital Status, Income, & Employment Status

Table 11: The Effect of Moderator Variables (Positive Social Companionship) on the Relationship between ACE and AUDIT-C

	Positive Social Companionship		
Variable	**β**	**R^2**	**p**
Step 1: Main Effects			
ACE Score	.228	.182	.005
Social Support	-.017	.229	.833
Step 2: Interaction Effect			
ACE Score x Social Support	.177	.231	.593
	Adjusted R^2=.147, F=.287 p = .593		

*****Covariates entered: Age, Gender, Origin, Education, Marital Status, Income, & Employment Status

Outcome: Heavy Episodic Drinking (HED). For the model testing whether social support moderates the relationship between ACEs and HED, only one covariate, education, was significant. A high school degree, or equivalent, was associated with higher levels of HED compared to a college degree (β=.218, p = .029). As shown in Table 12, scores on the ACE scale were positively associated with HED (β = .243, p = .004), indicating that as ACE scores increase, so does HED within this sample. The relationship between social support total and HED was not significant. The interaction between ACEs and social support total was not significant. For the other models testing whether each social support subtype moderates the relationship between ACEs and HED, the ACE measure was significantly positively associated with HED (all p-values <0.05). None of the social support subtypes were significantly associated with HED, and none of the interaction terms for these models was significant (Table 12 - 14).

Table 12: The Effect of Moderator Variables (Social Support Total and Emotion/Information Support) on the Relationship Between ACEs and HED

	Social Support Total			Emot/Infor Support		
Variable	**β**	R^2	**p**	**β**	R^2	**p**
Step 1: Main Effects						
ACE Score	.243	.157	.004	.241	.157	.004
Social Support	.035	.211	.691	.018	.211	.834
Step 2: Interaction Effect						
ACE Score x Social Support	.037	.213	.658	.062	.214	.451
	Adjusted R^2=.126, F=.196, p = .658			Adjusted R^2=.128, F= .572, p = .451		

*****Covariates entered: Age, Gender, Origin, Education, Marital Status, Income, & Employment Status

Table 13: The Effect of Moderator Variables (Tangible Support and Affectionate Support) on the Relationship Between ACEs and HED

	Tangible Support			Affectionate Support		
Variable	**β**	R^2	**p**	**β**	R^2	**p**
Step 1: Main Effects						
ACE Score	.250	.158	.003	.241	.157	.004
Social Support	.068	.214	.438	.027	.211	.754
Step 2: Interaction Effect						
ACE Score x Social Support	.002	.214	.981	.012	.211	.888
	Adjusted R^2= .127, F =.001, p = .981			Adjusted R^2= .124, F= .020, p = .888		

*****Covariates entered: Age, Gender, Origin, Education, Marital Status, Income, & Employment Status

Table 14: The Effect of Moderator Variables (Positive Social Companionship) on the Relationship between ACE and HED

	Positive Social Companionship		
Variable	**β**	**R^2**	**p**
Step 1: Main Effects			
ACE Score	.241	.157	.004
Social Support	.012	.210	.887
Step 2: Interaction Effect			
ACE Score x Social Support	.092	.211	.786
	Adjusted R^2= .124, F= .074, p = .786		

*****Covariates entered: Age, Gender, Origin, Education, Marital Status, Income, & Employment Status

DISCUSSION

The study aimed to investigate the potential moderating effects of social support dimensions on the relationship between ACEs and multiple risky drinking outcomes among second-generation Latinx young adults. I focused on this population given their high rates of Aces and heavy episodic drinking patterns in this population of young people. My goal was to investigate the potential moderating effects of social support in hopes that it can inform the potential development of an intervention aimed at reducing risky alcohol use by integrating social support components into the intervention.

First, it is worth noting this study focused on a population of heavy drinkers who had high scores in the adverse childhood experience questionnaire. Specifically, this sample had a mean score of 17.14 on the AUDIT total indicating a heavy drinking sample. Risky and heavy drinking has been linked to numerous negative health outcomes such as alcohol use disorders,[161] tobacco and cannabis use, visitation to emergency departments,[162] and sleep problems.[163] Young adults who are heavy drinkers, regardless of racial/ethnic background, are also susceptible to

encountering alcohol-related consequences such as alcohol poisoning, alcohol-related injuries, suicide, and potential for engaging in condom-less sex and contracting sexually transmitted diseases.[164]

Additionally, the average mean score of the ACE questionnaire was 5.32, an unexpected and exceedingly high score for this sample. Over three quarters (77.7%) of the sample had a score of 4 or more on the ACE inventory. A score of 4 on this measure indicated potentially serious future mental and physical health outcomes. For example results of a study found that adults with an ACE score of 4 or more are 460% more likely to become depressed, 1,220% more likely to attempt suicide, and 4,600% more likely to use intravenous drugs compared to a person without any ACEs.[165]

In this study, hierarchical multiple linear regression analysis confirmed the relationship between ACEs and risky drinking. This association has been seen across other racial/ethnic groups.[24,56,166,167] From my understanding, this is the first study that confirmed this relationship within a second-generation, Latinx young adult sample. Those who are exposed to adversity during childhood may use alcohol to decrease any negative emotional reactivity that may emerge because of their negative lived experiences.[168] In short, alcohol use is theorized as serving as a way to cope for individuals that have had these experiences.

In this study, social support was not negatively associated with any of the risky drinking outcomes. This contradicts recent research that has confirmed higher levels of social support is associated with less alcohol use overall.[169] Despite this nonsignificant finding, most of the coefficients for the models tested were in the direction of the predicted hypotheses (negative values). Perhaps the social support participants received from others did not match what was needed to have potentially played a role in reducing their risky drinking behavior. Furthermore,

other cultural factors may better aid in reducing risky drinking behavior among second-generation Latinx young adults, such as *familismo* or ethnic identity.[170,171] These cultural-specific factors were not assessed in the current study but would present possibilities for future research testing possible moderators of the relationship between ACEs and risky alcohol use.

Across the fifteen models, only one was found to demonstrate a significant interaction between ACEs and social support. Specifically, emotional/information social support moderated the relationship between ACEs and risky drinking such participants with more ACEs who received more support had higher scores on the AUDIT total than participants with lower levels of support. These findings contradict the Stress-Buffering Hypothesis which posits that social support can weaken the associations between experienced stressors and negative behavioral health outcomes.[75] This finding is contradictory to my hypothesis. Although not specific to alcohol-related research, one study found social support can be linked with unwanted confrontation and undesirable reactions and can exacerbate existing negative health outcomes.[172] A different study was able to show that excess support is associated with negative outcomes such as fewer positive feelings and more negative feelings.[173] Perhaps unwanted social support may exacerbate the stress related to childhood adversity, and in the case of the present study, increase risky drinking.

Although these findings contradict the Stress-Buffering Hypothesis, our findings can also be interpreted with a concept called homophily. Homophily refers to the tendency to associate with others who are like the individual.[200] Perhaps the study participants who were characterized as being heavy drinkers may associate and/or receive social support from others who are also heavy drinkers. Studies have shown how an individual's alcohol consumption can be significantly influenced and associated with relative and peer drinking behavior.[201] This concept

may explain why low levels of emotional/informational social support increased the association between ACEs and heavy episodic drinking among this sample. Future studies should ask participants to indicate their relative and peer alcohol and substance use behaviors to better understand whether this may be driving heavy episodic drinking behavior.

It is also likely that the statistically significant moderation found in the study may have not been a real effect; this is specific to type 1 concerns. Because there were 15 separate moderation analyses that were conducted, without a Bonferroni correction, this may have increased the possibility of encountering a type 1 error. To reduce type 1 errors, the future publication of this study will only investigate few moderators in addition to only focusing on one risky drinking outcome, the AUDIT total score. Furthermore, a Bonferroni correction will be conducted to reduce the chances of obtaining false-positive results.

Limitations & Strengths

This study has several limitations worth noting. First, the study is likely underpowered, and as such, these findings should be considered cautiously. Before the commencement of this research, a power analysis was conducted to determine how many second-generation Latinx young adult participants were needed for this study. Using the G-power sample size estimation software, a sample of 264 participants were needed to reach 0.80 power based on an effect size of 0.03 and alpha of 0.05. Unfortunately, it took nearly 8 months to recruit 143 participants given multiple recruitment challenges that could be attributed to the COVID-19 pandemic as well as the quality of the data received (e.g., bot data, duplicate submissions, etc.) through much of my data collection efforts.

A second limitation to the current study concerns the fact that a convenience sampling recruitment methodology was used; thus, limiting the generalizability of these findings given the

types of participants recruited using the methods described in this study. For example, many participants (38%) were recruited using social media and other online recruitment methods. This recruitment modality may have limited others from participating if they did not have access to emails and/or had a social media account such as Facebook or Instagram. However, it is important to note that other non-electronic recruitment methods were deployed (e.g., the posting of recruitment fliers in and around Latinx-concentrated cities, the posting of fliers at colleges across multiple cities, and snowball sampling strategies). The fact that an online data collection methodology was utilized also likely deterred some in the Latinx community from participating who did not have access to a computer, mobile phone or the internet; thus, affecting the generalizability of the results.

Lastly, self-report is considered another limitation of the study given the nature of how the data were collected. The self-reporting of alcohol use has the potential to increase the likelihood of social desirability effects.[175] Social desirability effects may play a role in underreporting alcohol consumption, social support, or adverse childhood experiences; however, the mean scores on the AUDIT and ACE measures were rather high so this was likely not an issue. Furthermore, most substance use research utilizes self-report data collection strategies. Despite these limitations, the study remains significant as it confirmed critical associations between ACEs and risky drinking.

Regardless of these limitations, there were a few strengths seen in the study. First, this study focused on a narrowed population, second-generation Latinx young adults regarding childhood adversity and current risky drinking. Investigating this sample, in this context, has never been done before. It was imperative for me to conduct this research given their high

likelihood of encountering ACEs and engaging in risky drinking behavior.[40,66,76,77] Such narrowed focus, on a particular group, adds to the innovativeness of the study.

Second, although this study did not find the moderating effects of all social support types on the relationship between ACEs and risky drinking (in the hypothesized direction), this study was able to confirm the relationship between ACEs and risky drinking with this sample. The associations between ACEs and risky drinking outcomes have not been established in the Latinx-specific racial/ethnic group. As indicated before, much of the research is focused on ACEs and general alcohol use. Establishing the ACE and risky drinking association, in this narrowed group, has multiple implications that can propel this line of research forward.

Conclusions

Many study participants reported having four or more childhood adversities which underscored the importance of providing the appropriate support for Latinx children that can ensure a strong start for these children.[176] Ensuring a solid start for children may include providing high-quality child care or instilling early childhood home visitations by social workers so that any experienced adversity can be made known.[176] Because adversity can persist during the adolescent years, there is significant importance in connecting youth to caring adults and positive activities in school-settings.[176] This may be by introducing mentoring programs or early after-school programs to support positive growth and development during crucial years. These results underscore the need to intervene early in order to reduce the immediate and long-term harm resulting from experiencing these childhood adversities.[176]

The high level of risky drinking in this sample, as measured by the AUDIT, also illuminates the need for the future development of interventions designed to reduce harmful drinking behavior in Latinx youth and young adults. The future development of such

interventions can reduce the potential emergence of social and health consequences that are often more prevalent among Latinx populations compared to other racial/ethnic groups. This study also has clinical implications. Specifically, clinicians should aim to identify these youth or young adults who are heavy drinkers and provide support and resources, early on, to better reduce their probability in developing an AUD or encountering negative social and health consequences.[33] Perhaps a universal or targeted Screening, Brief Intervention, and Referral to Treatment (SBIRT) screening tool should be implemented in primary health care settings to identify Latinx risky drinkers.

Lastly, the relationship between ACEs and risky drinking was replicated across all three risky drinking outcomes; this new line of research, specific to Latinx groups, should continue to be investigated further. Given the high adversity and risky drinking rates for this group, future analyses should aim to capitalize on this, longitudinally, to aid in our understanding of this association. Longitudinal studies can help detect developments at both group and individual levels. Such studies can inform us whether experiencing childhood adversity in fact causes later risky drinking behavior in this group. Longitudinal studies can go a step further and help us identify, at what age does alcohol use transition into risky drinking to identify key periods where Latinx youth may need to be intervened.

Chapter 3, "Investigating whether Social Support Subtypes Moderate the Relationship between ACEs and Risky Drinking among Latinx Young Adults" is currently being prepared for publication. Mark B. Reed, Laramie Smith, Maria Luisa Zúñiga, Eileen Pitpitan, Ryan Trim, and Harsimran Baweja are co-authors.

CHAPTER 4: Investigating whether Depression and Anxiety Mediate the Relationship between ACEs and Risky Drinking among Latinx Young Adults

ABSTRACT

Background: Latinx young adults have the second-highest rates of alcohol use and heavy episodic drinking compared to non-Latinx White adults. In addition, Latinx youth experience more adverse childhood experiences (ACEs) than non-Latinx White youth and other minority youth. Second-generation Latinx young adults are also heavily burdened with higher depression rates compared to non-Latinx Whites and have the second-highest anxiety rates compared to other minoritized groups. There is a positive association between ACEs, alcohol use, and AUDs among Latinx populations. However, much is not known regarding the potential mediating effects of mental health symptomatology on the relationship between ACEs and risky drinking among Latinx young adults. Only one study tested and found that mood and anxiety disorders partially mediate the relationship between ACEs and substance dependence among non-Latinx White groups. This study aims to test whether depression and anxiety independently mediate the relationship between ACE scores on risky drinking among Latinx young adults. The findings from this study can potentially inform future interventions to reduce risky drinking by integrating mental health components.

Methods: Data from 143 second-generation Latinx young adults were collected between January 2022-August 2022. Participants were recruited via social media, emails/listservs across multiple college institutions, on-foot recruitment across Latinx concentrated communities, snow-ball sampling methods, and physical postings of fliers across various college campuses and communities. The survey assessed ACEs measured by the Adverse Childhood Experience Questionnaire, risky drinking (Alcohol Use Disorder Identification Test), depression (Center for Epidemiological Depression Scale), and anxiety (Generalized Anxiety Disorder Scale). Multiple

mediational analyses were conducted to examine whether depression and anxiety explained the relationship between ACEs and risky drinking outcomes (AUDIT total score, AUDIT-C, and heavy episodic drinking).

Results: Of the collected sample, 59.4% identified as male, and 40.6% identified as female. The average age of the sample was 24 years of age. More than half of the participants self-identified as Mexican, Mexican American, or Chicano. Linear regressions demonstrated that ACEs are positively associated with the AUDIT total score, AUDIT-C score, and heavy episodic drinking. ACEs are also positively associated with depression. Depression mediated the relationship between ACEs and risky drinking (measured by the AUDIT total score).

Discussion: Future researchers should aim to reduce ACEs' impact on risky drinking and depression among this unique population. Practitioners, interventionists, and school personnel should continue supporting Latinx youth by integrating them into early prevention programs to address topics specific to adverse experiences, alcohol consumption, and mental health.

INTRODUCTION

Studies have shown that Latinx young adults often abstain from drinking (31.8%) compared to non-Latinx White young adults (15.5%);[35] however, researchers have also found Latinx young adults are more likely to consume alcohol in larger volumes.[29] This is problematic as drinking in larger volumes places Latinx young adults at an increased risk of developing an alcohol use disorder (AUD). A past study confirmed that 9.4% of Latinx young adults between the ages of 18 and 25 had an AUD compared to 5.6% of African Americans.[36]

In particular interest are second-generation Latinx young adult populations who are Latinx born within the U.S. but have at least one parent who is of immigrant status. Second-generation Latinx young adults are more at risk for developing problematic drinking behaviors due to their higher alcohol consumption rates in comparison to Latinx immigrant populations.[40] This is concerning as research has shown that Latinx individuals face more alcohol-related consequences than non-Latinx White groups. For instance, Latinx young adults experience more alcohol-related traffic accidents,[11] alcohol-related driving deaths,[43,44] and have higher prevalence rates in getting arrested for alcohol-related DUIs.[11] Encountering the ladder of alcohol-related consequences may lead to other social and legal outcomes for members of this community. Lastly, Latinx adults have higher rates of alcohol-related morbidity and mortality [10,177] which is largely due to higher prevalence rates of chronic alcoholic liver disease compared to any other racial/ethnic group.[13,45]

Given the higher consumption and alcohol-related consequence disparities among Latinx young adults, researchers have focused on investigating what factors contribute to alcohol use and heavy episodic drinking within this group. For example, studies have demonstrated an association between adverse childhood experiences (ACEs) and alcohol use, [22] alcohol abuse [73]

and alcohol use disorders [17] across many racial/ethnic groups, including the Latinx populations within the U.S.[16,33,66] ACEs are negative childhood events that have occurred before the age of 18 that may have a long-lasting impact on the individual during their adulthood.[27] Negative hardships may have taken place within the different spheres of the individual, whether in their social or familial environment.[27] Unfortunately, African Americans and Latinx populations face more ACEs than non-Latinx Whites.[73] Research has shown the Latinx population experiences more household alcohol use disorders and emotional and physical abuse compared to non-Latinx Whites and African-American subgroups.[22]

Although the ACE and alcohol use association has been investigated across multiple studies within the Latinx population,[16,33,66] there are a few studies investigating what may potentially mediate this association. Possible ACE and risky drinking association mediators may include depression and anxiety. Today, we know second-generation Latinx young adults are also heavily burdened with higher depression (8.6%) than non-Latinx White groups (7.9%) and Asian Americans (3.1%).[76] Furthermore, Latinx young adults have the second-highest anxiety rates (8.8%) compared to African Americans (8.6%) and Asian Americans (5.6%).[77]

Researchers have demonstrated multiple associations between ACEs and alcohol use, depression, and anxiety in the Latinx population.[16,23,25,33] Depression and anxiety symptoms may be an underlying mechanism that explains the association between ACEs and risky drinking among Latinx populations. To date, only one study was able to determine whether mood and anxiety disorders mediated the relationship between ACEs and substance use disorders among non-Latinx adults, African Americans, and Latinx adults.[80] This study found childhood abuse or exposure to violence was positively associated with both the number of lifetime mood and anxiety disorders and substance dependence risk.[80] Additionally, this study concluded mood and

anxiety disorders partially explained the relationship between ACEs and substance dependence. Despite these findings, over 90% of the sample were other than Latinx adults.[80]

Conducting a similar study with Latinx young adults as participants is critical to developing tailored, trauma-informed, and alcohol-specific interventions for this population. Suppose my study finds that depression and anxiety mediate the association between ACEs and multiple risky drinking outcomes. In that case, this will inform the conceptualization of an alcohol-specific intervention that integrates mental health components to reduce risky drinking. Such an intervention has not been conducted before and should be to help alleviate the negative consequences of risky drinking in the Latinx young adult population.

Theoretical Framework

This study was guided by the Stress and Negative Affect Model. According to the Stress and Negative Affect Model, alcohol and substance use behaviors are in response to attempting to reduce any negative affect caused by an experienced stressor.[79] In this study, ACEs mapped onto the "stressor" and risky drinking mapped onto the "substance use behavior." Additionally, depression and anxiety map onto the "negative affect" construct from this theory.

Hypotheses

This study aims to test whether depression and anxiety independently mediate the relationship between ACE scores on risky drinking among Latinx young adults. The following hypotheses were examined:

1. **Hypothesis 1:** The relationship between ACE score and risky drinking outcomes will be fully or partially mediated by greater depressive symptoms among Latinx young adults.
2. **Hypothesis 2:** The relationship between ACE score and risky drinking outcomes will be fully or partially mediated by greater anxiety symptoms among Latinx young adults.

METHODS

The findings from this study were obtained from a larger exploratory sequential mixed methods design parent project. The goal of the larger project was to qualitatively explore what additional childhood hardships have been experienced by Latinx individuals and to quantitatively study if social support moderates and mental health symptomatology mediates the association between ACEs and risky drinking among a Latinx young adult group.

Sampling & Recruitment Methods

Prior to recruitment, I obtained approval by San Diego State University IRB (Protocol Number: HS-2021-0122) to conduct the study. I promoted various recruitment strategies to recruit Latinx young adults. Initially, I attempted to recruit a sample of Latinx young adults by posting a flier on Instagram using a paid promotional advertising technique. This method linked potential participants to a questionnaire to screen for eligibility. The initial inclusion criteria consisted of participants who **1)** identified as a second-generation Latinx young adult, **2)** were between the ages of 19 and 24, **3)** lived in California, **4)** experienced a minimum of one negative childhood hardship, and **5)** drank 4+ alcoholic beverages (for women) or 5+ alcoholic beverages (for men) within a 2-hour setting. Additional inclusion criteria were specific to participant willingness to provide an email address for incentive purposes and participate in a 35–45-minute online questionnaire. Participants were excluded from participating in the study if they did not meet the eligibility, participated in the zoom interview that attempted to answer the qualitative objectives, and indicated alcohol consumption at the time of wanting to take the online questionnaire for the quantitative phase.

Obtaining hundreds of bot data daily, more so than real human data, motivated me to modify my recruitment approach. After the recruitment challenges, I modified the recruitment

method and some eligibility criteria. First, the recruitment method no longer utilized paid Instagram advertising techniques as it was responsible for the receipt of hundreds of bot data and the receipt of ineligible participants who indicated otherwise. Much of my time was spent on screening bot data. The new recruitment strategies included: posting and passing out fliers in Latinx-concentrated communities, San Diego State University, and community colleges while also emailing the flier to Latinx-specific email listservs and organizations across several California State University and University of California campuses as well as several community colleges. Additionally, I utilized more active social media techniques, such as direct messaging Latinx young adults to share the recruitment flier among their inner circle of friends and family and posting on other Latinx-specific Facebook Groups.

As noted above, I decided to expand on the eligibility criteria after significant delays in sufficient weekly participant recruitment. Specifically, the age range was expanded to include young adults between 19 and 30. This criterion change was done due to numerous friends, family members, and media personnel sharing their inability to partake in my study due to not meeting the age range despite meeting all other criteria listed in my study. Additionally, I modified the HED criterion to include consuming 4+ alcoholic beverages (for women) or 5+ alcoholic beverages (for men) on any one occasion during the past 30 days due to several participants screening out on this eligibility question. Because the inclusion criteria were too strict, it hindered my ability to recruit participants promptly; thus, a slight modification was conducted to help reduce potential participants from screening out.

Data Collection

The parent project utilized an exploratory sequential mixed methods study design. This study used data obtained from the quantitative phase. All participants partook in the Qualtrics

screening questionnaire to assess eligibility for the set of studies. Participants who met eligibility were directed to a separate questionnaire that contained an informed consent form for the study. After consenting, they were directed to the full research study questionnaire. The research questionnaire consisted of 220 questions. Participants took an average of 42 minutes to complete the questionnaire. The PI collected geolocation and IP address data to screen for duplicates, assess for questionnaire bots, and confirm CA residence. Five questions were asked to confirm eligibility to screen out questionnaire bots and/or ineligible participants. Latinx young adults who completed their questionnaire with a minimum time of 20 minutes or more, resided in CA, and re-confirmed their eligibility were sent a $10 Amazon Electronic Gift Card via email. Questionnaire data was collected between January 2022 and August 2022.

Study Measures

Demographic information, adverse childhood experiences, heavy episodic drinking, depression, and anxiety measures were measured.

Demographics

Ten questions assessed the demographic information of incoming participants. Demographic information included: gender (Males, Transmasculine, Transfeminine, Female, Other), age, Latinx origin (Mexican, Mexican American, Chicano; Puerto Rican; Cuban; and a text response where participants had an option to type down their origin), educational status (No schooling; Nursery School; Grades 1 through 11; 12th grade - no diploma; High school diploma; GED or alternative credential; some college credit, but less than 1 year of college; 1 or more years of college, no degree; Associates degree; Bachelor's degree; Master's degree; Professional degree beyond Bachelor's degree; and Doctoral degree).[152] An item on marital status was asked (Never married; Married; Separated; Divorced; Widowed), income (<$15,000; $15,000-$24,999;

$25,000-$34,999; $35,000-$49,999; ≥$50,000)[153,154], employment status (Employed; Unemployed; Homemaker; Student; Retired), and how they came to discover the recruitment flier (flier post located at SDSU; flier post located in community; a friend or family member shared the flier; social media; and a text response where participants had an option to type down a response).

Adverse Childhood Experiences

The Adverse Childhood Experience Questionnaire was utilized to assess negative childhood experiences.[27] The scale consists of 10 items that measure the presence or absence of different types of adversities that occurred before the age of 18.[27,155] Examples include answering 'Yes' or 'No' to experiencing household dysfunction, sexual abuse, physical abuse, among other childhood adversities.[27,155] One point for every adversity experienced by participants was summed into an overall score. Higher scores indicate a higher ACE severity score.[27,155] Participants were screened for a minimum of having experienced one childhood adversity; a total ACE score can range between 1 and 10 for each participant. An ACE score of 4+ is considered grave as it has been linked to leading causes of death in adulthood such as heart disease, chronic lung disease, liver disease, and various types of cancers.[27] The ACE scale demonstrated good internal consistency (Cronbach's alpha = .690).

Alcohol Use and Risky Drinking

The Alcohol Use Disorders Identification Test (AUDIT) questionnaire was used to measure risky drinking. The AUDIT measure consists of 10 items which are used to assess risky drinking and alcohol-related problems.[82] The first three items of this measure assesses drinking quantity, frequency, and heavy episodic drinking.[82] The last seven items measure alcohol dependence symptoms and harmful alcohol use.[82] Each item of the AUDIT has a 5-point Likert

response option where 0 = *Never* and 4 = *Four or more times a week*.[82] The AUDIT measure is scored by summing the values from each item. A participant who scored between 0 and 7 was classified as *low risk* while a participant who scored between 8 and 15 was classified as *at risk*.[82] Additionally, a participant who scored between 16 and 19 was classified as *high risk* while a participant who scored between 20 and 40 was classified as *severe risk*.[82] The AUDIT total had a good internal consistency within this sample (Cronbach's alpha = .877).

In addition to the AUDIT total score that was computed, I computed a total score for the first three questions of the measure which measures alcohol quantity, frequency, and heavy episodic drinking.[157] These questions make up what is known as the AUDIT-C.[157] This 3-item total score made up its own outcome variable and was further analyzed in this study. The AUDIT-C had a good internal consistency within this sample (Cronbach's alpha = .562). Another question that was measured, captured from the AUDIT, was one single item that measures heavy episodic drinking;[82] this item too was its own outcome variable in the current study.

Depression

Depression was assessed using the Center for Epidemiological Studies Depression Scale (CES-D). The CES-D consists of 10 items designed to assess depression within primary care settings; additionally, the CES-D is a good indicator for determining the severity of depression.[150] The CES-D instructs individuals to indicate how often they have felt a certain way during the past week.[150] An example includes, "I felt everything I did was an effort" which was answered using a 4-point Likert scale with response options of 0 = *Rarely or none of the time (Less than 1 day)* and 3 = *All of the time (5-7 days)*.[150] Questions 5 and 8 are reverse coded.[150] The severity score was calculated by summing each item response by the

participant.[150] A score equal or above 10 is considered depressed.[150] The CES-D had a good internal consistency (Cronbach's alpha = .790).

Anxiety

Anxiety was assessed using the Generalized Anxiety Disorder Screener (GAD-7). The GAD-7 consists of 7 items designed to assess anxiety within primary care settings; additionally, the GAD-7 is a good indicator for determining the severity of anxiety and can identify symptoms of generalized anxiety disorder.[85] Questions such as, "Over the last 2 weeks, how often have you been bothered by feeling nervous, anxious or on the edge?" were answered using a 4-point Likert scale with response options of 0 = *Not at all* and 3 = *Nearly every day*.[178] The GAD-7 score has the potential to range between 0 to 21 where 5 - 9 = mild anxiety, 10 -14 = moderate anxiety, and 15+ = severe anxiety.[178] The severity score was calculated by summing each item response by the participant.[178] The GAD-7 had a good internal consistency (Cronbach's alpha = .866).

Analytic Approach

Prior to running the mediation analyses, I ran descriptive analyses on all study variables to assure that all variables, included in the mediation models, met the appropriate statistical assumptions (e.g., normality, etc.). After the descriptive analyses were performed, I then conducted my mediation analysis using the PROCESS macro, authored by Andrew Hayes, which runs as part of the SPSS data analysis program.[179] To test whether depression and anxiety independently mediated, or partially mediated the association between ACE score and multiple risky drinking outcomes a total of 6 meditation analyses were conducted. The cumulative ACE measure served as the predictor variable whereas depression and anxiety scores served as the mediator variables. Multiple risky drinking variables served as the outcome variable. In this model, the ACE score was proposed to be related to depression and/or anxiety (mediator 1 and

2), which in turn was proposed to be related to multiple risky drinking outcomes. Gender, origin, age, income, education, marital status, and employment were controlled in the set of mediational analysis.[16,180–184] Any categorical variables were dummy coded, and each had a respective reference. Each mediator and outcome variable were examined separately so that shared variance was not a limitation.

RESULTS

Assessing Eligibility and Research Questionnaire Submissions

There was a total of 2,534 cases who entered the eligibility survey. Only 1,357 cases were directed to the research survey. I screened the data for four criteria which were used to flag exclusion criteria for the study: bots, duplicates, time completion, and geolocation. From those who were directed into the research survey, 1,202 cases were identified as bots based on how they answered text-based questions meant to identify bots; additionally, 411 were identified as duplicates based on having the same IP addresses with the same time-stamps completions. A total of 380 cases did not meet the minimum completion time requirement (20 minutes) and 603 cases indicated they resided in CA despite geolocation maps indicated otherwise. Many cases were flagged across one or more of these areas. After screening cases out, I've achieved a total sample of 143 participants; this is the sample that was incentivized and analyzed for this study.

Data Screening and Assessing the Assumptions of Normality

There was an assessment of the overall assumptions of normality. The following tests were conducted to assess the assumption of multivariate normality: Mahalanobis distance, cooks test, and leverage tests were performed for each of the five multivariable models. Results showed data for five participants met the criteria for a multivariate outlier; however, these participants

were not removed given that this study is an interim analysis and I did not want to reduce the sample size even more.

Additivity

There was an assessment of the additivity between the predictor variables and the mediators. After performing a correlation with these variables, it was determined that there was no additivity (Table 15).

Table 15: Variable Correlation Matrix

	ACE	AUD-10	AUD-C	HED	DEPR	ANX
ACE	1					
AUD-10	.28**	1				
AUD-C	.22**	.76**	1			
HED	.23**	.69**	.78**	1		
DEPR	.22**	.23**	.07	.06	1	
ANX	.08	.13	.33	.03	.68**	1

** Correlation is significant at the 0.01 level (2-tailed).

Linearity, Homoscedasticity, and Heteroscedasticity

Multiple histograms, scatterplots, and Normal P-P plots were conducted to assess for the remaining assumptions of normality, linearity, and homoscedasticity/heteroscedasticity on the study variable of interest. Multiple histograms were conducted to assess for normal distribution of all outcome variables. All studied outcomes showed a normal distribution. Establishing normal distribution is necessary when a study has a small sample size.[160]

Normal P-P plots were conducted to examine linearity of the outcomes. All outcomes investigated met the linearity assumption as the data-points were closely centered around the linear plot line. Meeting linearity assumptions is also critical as it informs researchers that the

linear model was able to predict the data accurately.[160] I viewed the scatter plot provided to assess for homoscedasticity and heteroscedasticity. Only the AUDIT total score outcome had minor issues with homoscedasticity and heteroscedasticity; the rest of the outcomes had issues with these specific assumptions. This is likely because these outcomes are composed of three items (AUDIT-C) or a single item (HED).

Sample Characteristics

A description of the sample demographics is in Table 16. Of the collected sample, 59.4% are male and 40.6% are female. The average age of the sample was 24.32 (SD: 2.95). Over half of the sample (55.2%) self-identified as Mexican, Mexican American, or Chicano; a breakdown of additional origins is indicated in the table. Many participants were not married (69.9%) and were employed (67.8%). A total of 77.7% of the sample had a score of 4+ on the ACE measure.

Table 16: Sample Characteristics (N=143)

Variable	**N (%)**	***M***	**SD**
Age		24.32	2.95
Gender			
Male	85 (59.4%)		
Female	58 (40.6%)		
Origin			
Mexican, Mexican American, Chicano	79 (55.2%)		
Puerto Rican	15 (10.5%)		
Cuban	12 (8.4%)		
Other	37 (25.9%)		
Highest Degree			

Table 16: Sample Characteristics (N=143) Continued

Variable	N (%)	*M*	SD
No High School Degree or Less	11 (7.7%)		
High School Degree or Equivalent	33 (22.4%)		
Some College, No Degree	39 (27.3%)		
Some College Degree	61 (42.7%)		
Marital Status			
Not Married	100 (69.9%)		
Married	32 (22.4%)		
Separated	10 (7.9%)		
Employment Status			
Employed	97 (67.8%)		
Unemployed	19 (13.3%)		
Student	27 (18.9%)		
Income			
<$15,000	6 (4.2%)		
$15,000 - $24,999	20 (14.0%)		
$25,000 – $34,999	35 (24.5%)		
$35,000 - $49,999	52 (36.4%)		
≥$50,000	27 (18.9%)		
Recruitment			
Flier: SDSU	16 (11.2%)		
Flier: Community	20 (14.0%)		
Friend or Family	43 (30.1%)		
Social Media	55 (38.5%)		

Table 16: Sample Characteristics (N=143) Continued

Variable	N (%)	*M*	SD
Other	9 (6.3%)		

Predictor, Mediator, and Outcome Characteristics

For each independent and mediator variable of interest, means, standard deviations, skewness, and kurtosis descriptive statistics were obtained (Table 17). The Adverse Childhood Experience Questionnaire had a mean score of 5.32 (SD: 2.44). Depression had a mean score of 13.29 (SD: 5.10). Anxiety displayed a mean score of 9.85 (SD: 4.55). The total AUDIT had a mean score of 17.14 (SD: 8.39) indicating a high level of risky drinking in this sample. This score indicates the sample analyzed are high-risk alcohol consumers. The mean of the AUDIT-C was 5.93 (SD: 2.31). A mean of 4 or more is indication of risky drinking behavior. Lastly, the single item heavy episodic drinking (HED) measure, had a mean of 1.97 (SD: .94).

Table 17: Descriptive Statistics for the ACE, Depression, Anxiety, and Risky Drinking Outcome Measures

Measures	Mean	SD	Skewness	Kurtosis
Adverse Childhood Experiences	5.32	2.44	.02	-.75
Depression Total Score	13.29	5.10	.01	.51
Anxiety Total Score	9.85	4.55	.184	.021
AUDIT Total Score	17.14	8.39	-.19	-1.03
AUDIT – C Score	5.93	2.31	.09	-.34
Heavy Episodic Drinking	1.97	.94	-.20	-.70

Mediational Analyses

After assessing the assumptions of normality, I ran three mediational analyses where I tested whether depression or anxiety mediated the relationship between ACEs and the three outcomes I investigated for this study: AUDIT total, AUDIT-C, and HED. For each model, the

following covariates were included; age, gender, Latinx origin, level of education, marital status, employment status, and income. Tables 18 - 20 display the results of the six mediational models. The analyses included bias corrected 95% confidence intervals (CI) around the indirect effect from 5,000 bootstrap re-samples. I accepted the indirect effect as statistically significant only if its bias corrected 95% CI excluded zero (i.e., the upper and lower confidence intervals do not have a negative value).

Outcome: AUDIT Total.

Using SPSS PROCESS macro with bootstrapping methods, I tested the mediational effect of depression and anxiety on the relationship between ACEs and AUDIT total score.

As shown in Table 18, there was a significant total effect between ACEs and the AUDIT total score ($\beta = .304$, $p = .000$). Given the directionality of this result, this indicates that as ACEs increase so do scores on the AUDIT total score. The relationship between ACEs on depression was also significant ($\beta = .232$, $p = .008$), indicating that as ACEs increase so do depression scores. Additionally, the relationship between depression and AUDIT total score was significant ($\beta = .176$, $p = .026$). Similarly, as depression scores increase so do scores on the AUDIT total.

Lastly, the indirect or mediational effect was also significant given the lower and upper 95% confidence interval did not include zero (Table 18). Therefore, depression is considered to mediate the relationship between ACEs and the AUDIT total. As shown in table 18, the relationship between ACEs on anxiety was not significant ($\beta = .101$, $p = .251$). Additionally, the relationship between anxiety and AUDIT total score was not significant ($\beta = .116$, $p = .138$). Anxiety did not mediate the relationship between ACEs and the AUDIT total.

Table 18: Mediating effect of Depression and Anxiety on the Relationship between ACEs and AUDIT-Total Score

Mediator	IV → M B	M → DV B	IV → DV B	Indirect Effect B	BC 95% CI Low	BC 95% CI Up
Depress.	.232 (p=.008)	.176 (p=.026)	.304 (p =.000)	.140	.010	.342
Anx.	.101 (p=.251)	.116 (p=.138)	.304 (p =.000)	.040	-.035	.161

Outcome: AUDIT-C.

I also tested the mediational effect of depression and anxiety on the relationship between ACEs and AUDIT-C. As shown in Table 19, there was a significant total effect between ACEs and the AUDIT-C (β = .219, p = .008). Given the directionality of this result, this indicates that as ACEs increase so do scores on the AUDIT-C. The relationship between ACEs on depression was also significant (β = .232, p = .008), indicating that as ACEs increase so do depression scores. The relationship between depression and AUDIT total score was not significant (β = .105, p = .202). Depression did not mediate the relationship between ACEs and AUDIT-C.

As shown in Table 19, the relationship between ACEs on anxiety was not significant (β = .101, p = .251). Additionally, the relationship between anxiety and AUDIT-C was not significant (β = .074, p = .364). Anxiety did not mediate the relationship between ACEs and AUDIT-C.

Table 19: Mediating effect of Depression and Anxiety on the Relationship Between ACEs and AUDIT-C

Mediator	IV → M B	M → DV B	IV → DV B	Indirect Effect B	BC 95% CI Low	BC 95% CI Up
Depress.	.232 (p=.008)	.105 (p=.202)	.219 (p=.008)	.023	-.015	.081
Anx.	.101 (p=.251)	.074 (p=.364)	.219 (p=.008)	.007	-.012	.040

Outcome: Heavy Episodic Drinking.

Lastly, I tested the mediational effect of depression and anxiety on the relationship between ACEs and heavy episodic drinking. Table 20 shows a significant total effect between ACEs and HED (β = .234, p = .005). Given the directionality of this result, this indicates that as ACEs increase, so do scores on HED. The relationship between ACEs on depression was also significant (β = .234, p = .008), indicating that as ACEs increase, so do depression scores. The relationship between depression and HED was not significant (β = .029, p = .726). Depression did not mediate the relationship between ACEs and HED. The relationship between ACEs on anxiety was also not significant (β = .102, p = .244). Additionally, the relationship between anxiety and HED was not significant (β = .024, p = .770). Anxiety did not mediate the relationship between ACEs and HED.

Table 20: Mediating effect of Depression and Anxiety on the Relationship between ACEs and HED

Mediator	**IV → M B**	**M → DV B**	**IV → DV B**	**Indirect Effect: B**	**BC 95% CI Low**	**Up**
Depress.	.234 (p=.008)	.029 (p=.726)	.234 (p=.005)	.003	-.012	.023
Anx.	.102 (p=.244)	.024 (p=.770)	.234 (p=.005)	.001	-.006	.012

DISCUSSION

The study aimed to investigate the potential mediating effects of depression and anxiety on the relationship between ACEs and risky drinking among second-generation Latinx young adults. Three mediational analyses were conducted where depression and anxiety total scores were entered into the model as potential mediators. Risky drinking outcomes include the AUDIT total, AUDIT-C score, and HED. Gender, age, origin, income, employment, marital status, and educational status were covariates.

Similar to the previous study (Chapter 3), it is imperative to note the sample had a high mean score of 17.14 on the AUDIT total; this indicated the sample could be classified as being at severe risk for an AUD. This finding is important as heavy drinking has been associated with negative health outcomes such as AUDs,[161] other substance use behavior,[162] and sleep problems.[163] This particular sample is also at risk for encountering alcohol-related consequences such as alcohol poisoning and alcohol-related injuries.[164] Additionally, 77.7% of the sample had a score of 4 or more on the ACE measure. Research has shown when individuals experience 4 or more ACEs, mental and physical health consequences of adversity become more severe. Specifically, people who scored 4 or more on the ACE measure are more at risk for attempting suicide (460%), injecting drugs (1,220%), or becoming more depressed (4,600%) compared to people without ACEs.[165]

Six analyses were conducted to test the mediating effects of depression and anxiety on the relationship between ACEs and risky drinking. These analyses were based on the idea that individuals who experienced childhood adversities may develop depression or anxiety and thus drink as a way to cope; this follows a well-established line of research that is guided by the Stress and Negative Affect Model.[79] The results show only depression mediated the relationship between ACEs and risky drinking as measured by the AUDIT total. This result is similar to the

results of a recently published study that found an association between ACEs and depression in a sample of children of Latino immigrants in the U.S.[185] Regardless of this association, it must be acknowledged that participants who reported depressive symptoms cannot be assumed as having a major depressive disorder.[186] Although causality cannot be inferred with this association, the positive association of ACEs on recent depressive symptoms suggests the long-term impact ACEs have on the individual.[186]

Additionally, I found that depression was positively associated with risky drinking (AUDIT total score). Motivational models of problematic drinking indicate that individuals who are depressed are likely to consume alcohol to avoid or attempt to regulate any negative emotions.[187] Research has posited that co-occurring depressed mood and risky drinking behavior are prevalent among young adults; as seen in this sample of participants.[188] This co-occurring combination has been associated with alcohol-related impairment and earlier age of onset for an AUD;[189] in addition, it places young adults at an increased risk of suicidality.[190]

Lastly, the relationship between ACEs and risky drinking (for all outcomes) among second-generation Latinx young adults was confirmed. This association has been investigated across numerous racial/ethnic groups. [24,56,166,167] From my understanding, this is the first study that confirmed this relationship in a second-generation Latinx young adult sample. Past research has suggested that individuals who have endured adversity during childhood may use alcohol to decrease negative emotional reactivity that may have emerged because of their negative lived experiences.[168] Results from this study partially support this notion and provide more evidence for the Stress and Negative Affect Model.[79] It is critical to note that although the mediation effects were statistically significant, depression did not fully explain the relationship between ACEs and risky drinking. Regardless, these findings closely align with a recent study, informed

by the Stress and Negative Affect Model framework, which found the mediating effect of mood and anxiety disorders on the relationship between ACEs and substance dependence in a predominantly non-Latinx White and African American adult sample.[80]

One may ask, why was depression only mediating the relationship between ACEs and risky drinking as measured by the AUDIT total score. Why not anxiety? Perhaps this may have to do with the mean scores of depression being higher than the mean scores of anxiety. Specifically, the sample was characterized as having high levels of depression and low levels of anxiety. Additionally, the relationship between depression and alcohol consumption is much more pronounced in the literature compared to the relationship between anxiety and alcohol use. In fact, one meta-analyses found depression is associated with concurrent alcohol use and impairment.[203] Again, such association is theorized to act on behalf of a maladaptive coping mechanism. [203] Although anxiety has been shown to be associated with alcohol use and risky drinking behavior, it is more of social anxiety related to alcohol consumption as opposed to generalized anxiety.[204]

Limitations & Strengths

It is critical to recognize the limitations of the present study. First, the study is likely underpowered given the sample size that was recruited. Prior to running my study, I conducted a power analysis to determine how many second generation Latinx young adults needed to be collected for the proposed mediational analysis. Using the G-power program, a sample of 264 participants was needed to reach a power level of .80, at an alpha of .05, 1 tested predictor (ACEs), 2 mediators (depression and anxiety), and multiple dummy-coded covariates. Of a sample of 264, only 143 participants were recruited. Regardless of the sample size collected, previous research has shown that to determine an indirect effect, the upper and lower quartiles of

the sample size should range between 115 participants and 285 participants.[191] The median sample size to determine an indirect effect is 142.5 participants.[191] My sample size falls between the upper and lower limits and is above the median sample size seen in research. Additionally, only 7.94% of research uses a sample size between 251 and 300 participants to conduct mediational testing.[191]

One limitation of this study concerns the convenience sampling recruitment methodology undertaken. Convenience sampling is problematic as it limits the generalizability of these results given the types of participants who were recruited for this study. Take for example, the 38% participants who were recruited using online recruitment methods such as social media or emails. Although this yielded in a moderate recruitment percent, this modality may have limited other second-generation Latinx young adults who did not have access to emails or social media. Online data collection methodology also has the potential to deter some in the Latinx community from participating in this study who did not have access to a mobile phone, a computer, or internet. Taking all of this into account, this affects the generalizability of the findings. Regardless of this limitation, it is critical to note that other non-electronic recruitment methods were deployed. Specifically, I also posted fliers in and around Latinx-concentrated cities and college institutions; I also instilled snow-ball sampling strategies. These approaches can reduce the impact of this limitation.

The data analyzed were all self-reported; this is a second limitation that needs to be considered. Utilizing self-reporting measures, as seen in this study, has the potential to increase the likelihood of social desirability effects, specifically when researchers investigate childhood adversity and alcohol.[175] Social desirability effects may play a role in underreporting alcohol consumption, depressive symptoms, anxiety symptoms, or adverse childhood experiences.

Regardless of this limitation, it is critical to note the mean scores on the AUDIT and ACE measure were high, so this was likely not an issue.

Lastly, this study was cross-sectional which hinders my ability in interpreting the associations between ACEs and risky drinking as causal effects. Researchers should attempt to replicate this study, longitudinally, to assert the causal effects many seek for in mediation analyses. Longitudinal studies can determine whether this group was depressed prior to experiencing childhood adversities or developed depression shortly after experiencing an adversity. Despite the cross-sectional limitation, conducting mediation analyses have shown to be successful in previous studies where researchers have tested ACE-specific mediation research questions where studies were also cross-sectional.[80] Because the ACE measure asks participants to answer questions based on their childhood adverse experiences that have happened in the past, appropriate temporal ordering could be assumed.

Regardless of these limitations, there are various strengths found within the scope of this study. First, this study focused on a niche group when investigating the mediating effects of depression and anxiety on the relationship between ACEs and risky drinking outcomes. To date, second-generation Latinx young adult groups have not been investigated in the context of these scientific questions despite the knowledge of this group having higher ACEs, depression and anxiety scores in addition to risky drinking outcomes.[40,66,76,77] The study confirmed critical associations between ACEs, depression, and risky drinking. Such findings can now contribute to the limited research that pertains to Latinx alcohol-specific science. Additionally, the study aided in our understanding of the mediating role depression has on the relationship between ACEs and risky drinking as measured by the AUDIT total. To date, there has not been a single study

investigating such factors in the context of this group. This result has the potential to propel future research and has various implications.

Conclusions

There are multiple implications to the finding obtained in this study. Because over three-quarters of my study participants reported having four or more childhood adversities, there is a critical need for adults to provide appropriate support and resources to Latinx children and youth to help ensure a strong start.[176] This can include providing high-quality care.[176] Connecting youth to supportive adults and/or after-school programs may also positively impact Latinx youth given that adversity often persists across many years.[176] This may look like mentoring programs, instilled within school-settings, or participating in after-school programs.[176] Taken together, these strategies can help reduce the immediate and long-term harm many may experience after encountering childhood adversities.[176]

The high scores of risky drinking behavior indicates the immediate need for future development of interventions designed to ameliorate risky drinking behavior in this group of young adults. Such an intervention has the potential to not only reduce harmful drinking behavior but the potential emergence of legal, social, and health consequences that have been shown to be much more prevalent across Latinx adults. There are also implications to further this line of research. Specifically, future research should explore if there are gendered differences in the ACE-depression association among second-generation Latinx young adults. Studies have found that in general, women experience more ACEs[192] and are more at risk for getting depression compared to men.[193] If we commit to this science it can inform interventionists on who to prioritize when developing interventions aimed at reducing risky drinking among depressed young adults.

Furthermore, research should investigate what specific adversity is associated with higher scores on depression and risky drinking to prioritize which adversities must be intervened immediately during childhood to avoid potential long-term consequences. Research should also commit to finding strategies on how to reduce the co-occurring combination of depression and risky drinking among second-generation Latinx young adults. Whether it be in intervention or clinical settings, reducing these co-occurring symptoms will help improve the quality of life of this group.

Lastly, future research should enhance the ACE scale to include more diverse adversities likely experienced by Latinx young adults and then reassess the association and mediational relationships investigated in this study. Conducting this kind of research would allow for a more holistic investigation of adversity, depression, and risky drinking among this generational sub-sample of Latinx young adults. My larger exploratory sequential mixed-methods parent project allows me to test these associations and mediations, soon, with a more holistic view of childhood adversities experienced by second-generation Latinx young adults. This is the line of research that I plan to move forward with to help close these gaps within this population.

Chapter 4, "Investigating whether Depression and Anxiety Mediate the Relationship between ACEs and Risky Drinking among Latinx Young Adults" is currently being prepared for publication. Mark B. Reed, Laramie Smith, Maria Luisa Zúñiga, Eileen Pitpitan, Ryan Trim, and Harsimran Baweja are co-authors.

CHAPTER 5: GENERAL DISCUSSION

The primary goals of this proposed research were to: 1) qualitatively explore what other adverse childhood hardships have been experienced by second-generation Latinx young adults as well as to explore what social support types and sources were needed at the time the adversity was experienced (Chapter 2); 2) investigate whether social support moderates (Chapter 3) and whether depression/anxiety mediates the relationship between ACEs and risky drinking in a sample of Latinx young adults (Chapter 4). The long-term goal of this research is to 1) enhance the Adverse Childhood Experience Questionnaire and 2) develop a trauma-informed, Latinx alcohol-specific intervention aimed at strengthening social support and mental health to help ease risky drinking behavior in the young adult Latinx population.

In Chapter 2 (AIM 1), I found additional childhood adversities experienced by second-generation Latinx young adults that are not represented in Adverse Childhood Experience Questionnaire.[27] The results of the qualitative semi-structured interviews yielded additional adversities such as financial instability, taking on adult-like responsibilities, witnessing community violence, food insecurity, deportation-related fears, experiencing racism, housing instability, and being the victim of bullying. Most participants also reported wanting emotional support, instrumental, and informational support from family, friends, or adults (e.g., teachers). Individual therapy was also a source of instrumental social support that was not sought during childhood, but many participants indicated that this would have been helpful when experiencing these adversities during childhood. The results of the semi-structured interviews also included many participants noting specific barriers to seeking social support when they experienced these adversities. These barriers included fear of encountering child protective services, not wanting to burden their parents or friends, and internalized stigma around seeking social support.

In Chapter 3 (AIM 2), the results of the hierarchical regression analyses showed that ACEs were positively associated to all three measures of risky drinking (e.g., AUDIT total, AUDIT-C, and heavy episodic drinking) in a sample of second-generation Latinx young adults. Social support was not negatively associated with risky drinking outcomes, contradictory to findings in the literature. Only emotional/informational support moderated the relationship between ACEs and the AUDIT total score. However, the moderating effect was antagonistic and contradicted my hypotheses as well as the Stress-Buffering Hypothesis framework and related research. None of the other models investigated showed a moderating effect.

In Chapter 4 (AIM 3), findings showed the positive associations between ACEs with AUDIT total, the AUDIT-C, heavy episodic drinking, and depression. Depression was also positively associated with the AUDIT total. Results of the analysis testing whether depression mediates the relationship between ACEs and the AUDIT total demonstrated a partially mediated effect. However, the results of the other mediation models yielded no other significant effects.

Strengths

Overall, there are many strengths of my three-research studies worth noting. First, exploring childhood adversities experienced by Latinx young adults that are not included in the widely used ACE measure is a novel area of research with the potential to lead to the creation of a new more culturally sensitive measure that more accurately captures childhood adversities experienced by this population. To date, there have been no research studies which have attempted to examine these adversities using a sample of second-generation, Latinx young adults. Furthermore, no previous studies have explored the social support needs of Latinx who have experienced these types of childhood adversities. These qualitative aims alone have the potential to advance the ACE-related research literature by 1) enhancing the ACE questionnaire

with items relevant to some Latinx populations and 2) providing critical information on where to allocate the social support resources to Latinx children and youth who may be experiencing these types of adversities.

There were also strengths related to the methodological approach of the qualitative study. Specifically, the way in which interviews were conducted via Zoom allowed for this study to take place during the pandemic when conducting in-person interviews would have been nearly impossible. Turning off the camera allowed for participants to share their experiences, often emotionally charged, without any potential worry of being seen or judged if they became emotional during the interview. Furthermore, this study incorporated intercoder reliability methods which aided in the rigorousness of this qualitative approach.

The research questions posed in Chapters 3 and 4 have been answered in previous research, to a degree, utilizing samples that were often non-Latinx, White. Alcohol research, specific to Latinx groups, is a limited area of inquiry despite the many social and health consequences that alcohol poses to this group. Regarding the quantitative studies (Chapter 3 and 4) included in this dissertation, there were many strengths specific to the research conducted. First, these studies focused on a very narrow sub-group within the Latinx population—specifically, second generation individuals. Often, generational status and Latinx origin get lumped together. There has been a push to disaggregate what we mean when we explore questions with a sample that is Latinx or Hispanic. For my study, it was critical that I only focused on second-generation Latinx young adults given the high rates of risky drinking, ACEs, depression, and anxiety in this population.[40,66,76,77] It was also critical that I asked about Latinx origin which was entered as a covariate in models presented in chapters 3 and 4 as past research demonstrated alcohol use differences across certain groups of Latinx adults.[37]

Although the results of the models testing moderation and mediation yielded few significant results or results in the predicted direction (as in chapter 3), I did find that depression partially mediates the relationship between ACEs and risky drinking. This is a finding that has not been reliably established in the literature with second-generation Latinx young adults. This finding has implications in that it informs the need to develop an intervention aimed at reducing risky drinking behavior, by integrating mental health components, for second-generation Latinx young adults. Such interventions are needed given the high prevalence rates of risky drinking.[40]

Limitations

Despite these strengths, the present research does have several limitations. First, the results of the qualitative study are not generalizable. However, qualitative research is not meant to be generalizable, rather it is meant to study a certain issue or occurrence within a specific population or ethnic group.[142] The focus of my qualitative research did exactly that by identifying diverse adversities and social support needs within a sample of second-generation Latinx young adults. To the best of my knowledge, such a study has not been conducted before until now. Additionally, my qualitative findings have the potential to inform future population-based research. Specifically, incorporating the adversities uncovered from my qualitative work into future population-based surveys will be useful in measuring the prevalence of these adversities in larger, more representative samples.

Second, the Zoom interviews were only audio-recorded as participants had their web cameras turned off to reduce any potential internalized feelings of being watched and judged if the participant became emotional during the interview. Body language can be an equally important element to qualitative data that was not collected during my interviews. Such data could have allowed me to probe further on certain questions during the interview.[194] However,

my interviewing strategy was intentional as it allowed my participants to feel as anonymous as possible as they recalled any adversities. Understandably so, many participants cried during these interviews. Recalling one's childhood adversity can be an emotional yet cathartic process for some. If I left their cameras on, would my participant disclose the same amount of information they did? Would they feel vulnerable enough to let certain emotions come through during the interview, emotions that needed to be captured and explored further to get the full picture of their childhood adversity? These were the questions I had in mind during the conceptualization stage of this project. Missing out on body language data was a risk that I needed to take to obtain rich data across some of the emotionally charged topics.

There were also limitations of the quantitative research reported in this dissertation. First, the convenience sampling methods used to collect the data for papers 3 and 4 yielded non-representative samples of Latinx young adults, limiting the generalizability of the results. Specifically, more than one-third of the participants (38%) in the quantitative research study were recruited using social media as well as other online recruitment mediums such as FB, emails, listservs. Therefore, if potential recruits did not have access to a computer or mobile phone or if they did not have a Facebook or Instagram social media account, they would not have had an opportunity to participate. Thus, those who did participate may have had significantly different experiences with adverse childhood events, drinking history, etc. Regardless of this limitation, the results provided important information about the relationships between ACEs and risky drinking in an unexplored sample of second-generation Latinx young adults–a population of which few studies have focused.

A total of 143 participants were recruited due to multiple recruitment challenges such as receiving bot data, the ongoing pandemic that hindered in-person recruitment, and multiple

changes to the IRB protocol (5 amendments) to improve the recruitment methods given the challenges experienced. Prior to collecting data, an power analysis was conducted to determine how many participants were needed for the quantitative aims. A sample of 264 was needed for my studies based on an informed odd ratio[33] which was then converted into an F effect size of (.03).[195] Although my study did not meet this quota, past literature has confirmed my sample falls between an acceptable range for a study investigating testing moderating and mediating variables.[174,191]

A limitation of this research concerns the self-reporting of both adverse childhood experiences as well as alcohol consumption behavior. The nature of self-report has the potential to increase the likelihood of social desirability effects[175] and may have played a role in the underreporting alcohol consumption and adverse childhood experiences and over-reporting social support. However, this is unlikely given the high scores on the AUDIT and as well as on the adverse childhood experiences questionnaire. It is important to acknowledge, however, that most substance use research utilizes self-report methods rather than objective measures of use. A limitation of this research concerns the cross-sectional study design which hinders the ability to make causal connections between ACEs and risky drinking among this group. Because the ACE questionnaire asks participants to answer questions based on their childhood adverse experiences, prior to age 18, while risky drinking in the past year was assessed in participants between 19-30, appropriate temporal ordering could be assumed.

Future Directions: Research, Policy, and Clinical Implications

There is a critical need to enhance the ACE measure to include a wider array of adversities experienced by children and youth from underrepresented and minoritized groups. Although the ACE scale is reputable and has been utilized in a significant number of research

studies, there was a missed opportunity in investigating other diverse childhood adversities. The results of the qualitative phase of my research underscores the necessity of enhancing the ACE measure with these other adversities and re-assess past literature specific to Latinx ACEs in relation to mental and health outcomes. The findings in the qualitative study were able to support the notion of the need to change specific policies to improve equity and provide more resources to specific family units. Unfortunately, many of the adversities experienced by second-generation Latinx children and youth are related to having immigrant parents which is an uncontrollable situation. However, there is the potential to control the inequities and lack of resources by creating social policies to better support immigrants and immigrant families as well as through the development of interventions aimed to alleviate some of these adversities and the effects of these adversities. For example, many participants echoed their lived experiences with enduring familial financial insecurity and its impact on food and housing as many of their parents worked multiple, low wage jobs given. This finding underscores the need to advocate for higher-paying wages for immigrant parents to reduce the likelihood of experiencing financial insecurity. This would also reduce housing and food insecurity. We need to also advocate for this group to have access to more housing resources and create policies aimed at reducing housing foreclosures. Additionally, immigrant status must continue to be considered a social determinant of health - not only in the realm of research but in the political sphere as well.

The results of the qualitative study also revealed the types of social support that was needed at the time of the adversities were experienced. Specially, emotional support from others with similar backgrounds (e.g. Latinx) was wanted by many participants. We need to continue to push for hiring more diverse teachers within the public school system so that children and youth can feel represented and safe to confide in them. Simply stated, there is power and comfort in

confiding in someone who may have endured similar lived experiences such as discrimination, poverty, and other inequities. We must also consider the potential development of after-school programs designed to 1) address the racial and ethnic disparities many Latinx youth face and 2) discuss the emotions centered around these disparities that many youth may be internalizing. Additionally, a number of participants shared their need for wanting individual therapy yet did not seek it at the time of the adversity. Research has shown the disparities concerning the use of pediatric mental health services in Latinx youth populations. Future research is needed to develop prevention programs aimed at closing these disparities.

Lastly, the qualitative study pinpointed the many internalized barriers to seeking help and support from others such as stigma, fear of burdening others, and encountering child protective services. Given such barriers, parental figures need to encourage their children to communicate with them regarding their shared lived experiences and the emotions centered around those lived experiences. Public school systems should continue to reinforce the importance of mental health, communicating negative emotions, and the importance of seeking support from adults, peers, and professionals.

The results of the quantitative studies identified additional important implications for the literature. To date, there are limited interventions aimed at reducing risky drinking behavior within Latinx young adult populations. Interventions need to be developed to mitigate the high levels of risky drinking behavior as seen in my study and quantified on the AUDIT. We know risky drinking may pose a risk factor in the potential development of AUD or other alcohol-related consequences; however, this is a unique sample that has been shown to have lower access to mental health/substance abuse resources and lower seeking support behavior. Thus, culturally

sensitive interventions aimed at reducing such disparities and as well as risky drinking must be developed.

Additionally, the results of my quantitative studies demonstrated high levels of adversities. Specifically, more than three-quarters of the recruited study sample reported 4 or more ACEs. Taking this into consideration, politicians and clinicians need to ensure a strong start for children. This may include providing high-quality child care and instilling early childhood home visitations by social workers so that any experienced adversity can be made known to other adults who can help provide support to youth to prevent any long-term consequences.[176] Furthermore, the quantitative results demonstrated associations between ACEs and risky drinking. In addition, the results of one of the mediational models in Chapter 4 showed that depression mediates the association between ACEs and risky drinking. These findings support the critical need to continue to investigate mental and behavioral health outcomes among underrepresented groups who are known for encountering high levels of childhood adversities. The research presented in this dissertation aims to increase and continue this line of inquiry.

Recruitment Challenges

Social media recruitment was initially proposed as the recruitment approach for these studies given the difficulties of using face-to-face recruitment methods during the pandemic. Although social media recruitment via paid advertisements on Instagram, did not pose a major issue for my qualitative study, it did for the quantitative studies. Multiple changes were made to better improve the recruitment approach for the studies reported in chapters 3 and 4; each amendment presented below addresses these changes and the reasoning behind the modifications.

Piloting the Survey: Survey Problems Made Known

There were many recruitment challenges that I encountered for the quantitative phase of this research. Having to pivot quickly led to my own personal growth as a scientist as I needed to make quick decisions about how to best recruit, adapt my original methods, and make a number of amendments to the IRB protocol.

Before the launch of the quantitative phase of this research, pilot data was collected on December 10th, 2021, via Instagram, using paid advertising recruitment techniques. Keywords used to promote this flier to the Latinx community included: *Latino culture, Mexican, alcohol,* and *drinking*. Demographics targeted were specific to California, males and females, and 19–24-year-olds. Instagram does not allow for specific racial/ethnic backgrounds to be targeted. When screening the data from the pilot, I found many participants skipped over numerous questions by clicking "Next" on the bottom right of the survey. Overall, most of the items on the questionnaire were left unanswered which posed a potential large issue of encountering missing data in the data collection. Participants likely skipped over most of the survey solely to enter their emails for incentive-purposes.

Additionally, the pilot also demonstrated issues related to duplicate data, bots, and participants residing outside of California. Upon inspection, I learned a significant amount of data had the same IP address with similar completion times and text-responses; this led me to believe that it was likely a bot completing the survey rather than an entry made by a person. Bots did not always have the same IP address across multiple survey entries but were discovered based on nonsensical text-responses. Lastly, much of the pilot data obtained came from states (and countries) outside of California. This was indicated by geolocation stamps in the data and a visual map provided by Qualtrics.

This pilot prompted me to 1) consider different keywords for the social media advertising and to consider using other social media avenues to recruit participants. It also prompted me to 2) add a response requirement feature in Qualtrics for all the questions on my questionnaire to prevent fast-completion times and missing data. [196] Lastly, the pilot prompted me to 3) develop a strict protocol to identify potential duplicate cases (e.g., people who participated more than once) as well as bot submissions. Based on these considerations, I needed to amend my IRB protocol a second time.

IRB Amendment 2: Addressing Bots, Duplicates, and Out-of-State Data

The second IRB amendment addressed the concerns indicated above. The recruitment flier for the quantitative phase of my research was still promoted on Instagram but utilized different target words. Keywords included, *Mexican American culture, Hispanic, Latino, Chicano, alcoholic beverages, drinking, bars, alcohol, party,* and *research.* Demographics targets remained the same. In addition, I targeted other Latinx-specific Facebook Groups and email-listservs with the recruitment flier. Participants were required to complete the survey with a minimum time of 20 minutes to be considered for the incentive (e.g., to ensure they were not speeding through to get the incentive). Additionally, I screened for bot data, duplicate cases, and submissions from out-of-state participants. For this phase, I promoted the recruitment flier on three separate occasions via Instagram (11 days total). Based on data screening and the large number of submissions coming from bots, out-of-state submissions, and quick submissions, I removed the paid advertising social media recruitment method altogether in addition to the other online recruitment modalities. This necessitated a third IRB amendment.

IRB Amendment 3: College Listservs, Latinx-Concentrated Communities, Campuses

Given the significant number of bots encountered with my previous social media recruitment strategy, I decided to send my recruitment flier directly to Latinx young adults via email listservs at SDSU as well as other institutions of higher education in San Diego County and Southern California. Recruitment fliers were also posted on campus across multiple community colleges and CSU institutions. I also recruited participants at locations and events that drew large numbers of Latinx young people (e.g., bars, swap meets, restaurants). This new recruitment approach resulted in a much slower recruitment of Latinx young adults, but the data collected yielded no bot data. Slow recruitment across colleges and non-college locations was likely attributed to the lingering effects of COVID-19.

Through the course of in-person recruitment, I also learned that my eligibility criteria were likely hindering the recruitment of participants. Specifically, through qualitative feedback from participants who were not eligible to participate, I learned the age range (19-24) and HED eligibility criteria were excluding many potential participants. With this feedback in mind, I initiated a fourth amendment to the IRB protocol.

IRB Amendment 4: Eligibility Changes & Bringing back Online Methods

Because a higher number of potential participants than expected were screened out during the eligibility survey, a slight modification to the eligibility criteria was made. Specifically, I decided to expand the age range to 19 to 30 and the HED criterion was modified to include consuming 4+ alcoholic beverages (for women) or 5+ alcoholic beverages (for men) on any <u>one</u> occasion during the past 30 days (vs. within a 2-hour setting).

I also decided to add back social media recruitment methods by targeting *additional* Facebook groups, some were Latinx-specific, and others were college-specific (e.g., community

college and CSU transfer student Facebook groups). Additionally, social media direct-messaging strategies to actively recruit participants were employed. This entailed sending direct messages to Latinx young adults, over social media that asked them to share the recruitment flier to any close friends or family members whom they thought might be interested and eligible to participate. This recruitment method was in addition to posting fliers at SDSU, emailing Latinx-specific contacts, and posting/handing out fliers in Latinx concentrated communities around Southern California. I did not utilize Instagram promotional tools given the challenges mentioned earlier. I continued to recruit participants using these methods up until the middle of August 2022.

Amendment 5: Collecting the Remaining Participants using Web Panels (Post-Defense)

Given the ongoing recruitment difficulties and my relocation to Providence, RI for my Postdoctoral studies, I submitted a fifth amendment to the IRB to recruit the remainder of the proposed sample utilizing a Qualtrics Web Panel method. Qualtrics has partnered with over 20 web-based panel providers to aid researchers in supplying them with diverse and quality participants.[197] Qualtrics panels is a service that allows individuals to register and create an account to participate in survey research for which the participant is compensated with an incentive.[198]

For this new recruitment strategy, participants will be sent a pre-screening survey that addresses the eligibility criteria.[198] If participants meet the eligibility criteria they will be sent an individual invitation from Qualtrics indicating that they are eligible to participate in the full research study.[198] For this amendment, I modified the eligibility criteria to allow for more recruitment flexibility by allowing participants to be recruited outside of California (open to

other states). Participants will be provided with a monetary incentive, by Qualtrics; typical incentive ranges between $4-5 US dollars.[198]

The Qualtrics web panel may be the best method to recruitment given its many strengths (e.g., timely recruitment (12-14 days), boosting accuracy that is 47% more consistent than other standard sampling methods, and providing researchers with quality data that is bot-free and duplicate-free).[199] All analyses that will be presented during the interim defense will be re-ran using the full sample collected; I will control for recruitment method given this modification.

Timeline for Publications

The following timeline shows when papers 1-4 will be published. Although this dissertation has three set papers, paper #1 will be broken into two publications given its two different objectives that do not overlap.

Paper 1 Expanding on ACEs	**Paper 2** Social Support Wanted & Barriers	**Paper 3** Does Social Support Moderate the Relationship between ACEs and Risky Drinking	**Paper 4** Does Mental Health mediate the Relationship between ACEs and Risky Drinking
Submit by December 30th 2022	Submit by January 30th 2023	Submit by April 30th 2023	Submit by May 30th 2023

REFERENCES

1. 2018 National Survey on Drug Use and Health: Hispanics, Latino or Spanish Origin or Descent. :58.

2. Ramos-Olazagasti MA, Bird HR, Canino GJ, Duarte CS. Childhood adversity and early initiation of alcohol use in two representative samples of Puerto Rican youth. *Journal of youth and adolescence*. 2017;46(1):28-44.

3. Chen P, Jacobson KC. Developmental Trajectories of Substance Use From Early Adolescence to Young Adulthood: Gender and Racial/Ethnic Differences. *Journal of Adolescent Health*. 2012;50(2):154-163. doi:10.1016/j.jadohealth.2011.05.013

4. Pinedo M, Zemore S, Rogers S. Understanding barriers to specialty substance abuse treatment among Latinos. *Journal of Substance Abuse Treatment*. 2018;94:1-8. doi:10.1016/j.jsat.2018.08.004

5. DeFreitas SC, Crone T, DeLeon M, Ajayi A. Perceived and Personal Mental Health Stigma in Latino and African American College Students. *Front Public Health*. 2018;6. doi:10.3389/fpubh.2018.00049

6. Verissimo ADO, Grella CE. Influence of Gender and Race/Ethnicity on Perceived Barriers to Help-Seeking for Alcohol or Drug Problems. *J Subst Abuse Treat*. 2017;75:54-61. doi:10.1016/j.jsat.2016.12.013

7. Mojtabai R, Chen LY, Kaufmann CN, Crum RM. Comparing barriers to mental health treatment and substance use disorder treatment among individuals with comorbid major depression and substance use disorders. *J Subst Abuse Treat*. 2014;46(2):268-273. doi:10.1016/j.jsat.2013.07.012

8. Pagano A. Barriers to Drug Abuse Treatment for Latino Migrants: Treatment Providers' Perspectives. *Journal of Ethnicity in Substance Abuse*. 2014;13(3):273-287. doi:10.1080/15332640.2014.886320

9. Mandayam S, Jamal MM, Morgan TR. Epidemiology of Alcoholic Liver Disease. *Semin Liver Dis*. 2004;24(3):217-232. doi:10.1055/s-2004-832936

10. Yoon YH, Yi H ye, Thomson PC. Alcohol-Related and Viral Hepatitis C-Related Cirrhosis Mortality among Hispanic Subgroups in the United States, 2000–2004. *Alcoholism: Clinical and Experimental Research*. 2011;35(2):240-249. doi:https://doi.org/10.1111/j.1530-0277.2010.01340.x

11. Cooper JF, Wilder TR, Lankina E, Geyer JA, Ragland DR. Traffic safety among Latino populations in California: Current status and policy recommendations. Published online 2015.

12. Newsom GC. ANNUAL REPORT TO THE LEGISLATURE OF THE STATE OF

CALIFORNIA. :199.

13. Chronic Liver Disease/Cirrhosis. Accessed December 3, 2020. https://www.hopkinsmedicine.org/health/conditions-and-diseases/chronic-liver-disease-cirrhosis

14. Sabina C, Cuevas CA, Zadnik E. Intimate partner violence among Latino women: Rates and cultural correlates. *Journal of Family Violence*. 2015;30(1):35-47.

15. Swatt M. Summary Report: Latino Intimate Partner Homicide. :23.

16. Barrera I, Sharma V, Aratani Y. The Prevalence of Mental Illness and Substance Abuse Among Rural Latino Adults with Multiple Adverse Childhood Experiences in California. *J Immigrant Minority Health*. 2019;21(5):971-976. doi:10.1007/s10903-018-0811-9

17. LeTendre ML, Reed MB. The Effect of Adverse Childhood Experience on Clinical Diagnosis of a Substance Use Disorder: Results of a Nationally Representative Study. *Substance Use & Misuse*. 2017;52(6):689-697. doi:10.1080/10826084.2016.1253746

18. Fuller-Thomson E, Roane JL, Brennenstuhl S. Three Types of Adverse Childhood Experiences, and Alcohol and Drug Dependence Among Adults: An Investigation Using Population-Based Data. *Substance Use & Misuse*. 2016;51(11):1451-1461. doi:10.1080/10826084.2016.1181089

19. Windle M, Haardörfer R, Getachew B, et al. A multivariate analysis of adverse childhood experiences and health behaviors and outcomes among college students. *Journal of American College Health*. 2018;66(4):246-251. doi:10.1080/07448481.2018.1431892

20. Dube SR, Miller JW, Brown DW, et al. Adverse childhood experiences and the association with ever using alcohol and initiating alcohol use during adolescence. *Journal of Adolescent Health*. 2006;38(4):444.e1-444.e10. doi:10.1016/j.jadohealth.2005.06.006

21. Ege MA, Messias E, Thapa PB, Krain LP. Adverse Childhood Experiences and Geriatric Depression: Results from the 2010 BRFSS. *The American Journal of Geriatric Psychiatry*. 2015;23(1):110-114. doi:10.1016/j.jagp.2014.08.014

22. Merrick MT, Ports KA, Ford DC, Afifi TO, Gershoff ET, Grogan-Kaylor A. Unpacking the impact of adverse childhood experiences on adult mental health. *Child Abuse & Neglect*. 2017;69:10-19. doi:10.1016/j.chiabu.2017.03.016

23. Lee RD, Chen J. Adverse childhood experiences, mental health, and excessive alcohol use: Examination of race/ethnicity and sex differences. *Child Abuse & Neglect*. 2017;69:40-48. doi:10.1016/j.chiabu.2017.04.004

24. Campbell JA, Walker RJ, Egede LE. Associations Between Adverse Childhood Experiences, High-Risk Behaviors, and Morbidity in Adulthood. *American Journal of Preventive Medicine*. 2016;50(3):344-352. doi:10.1016/j.amepre.2015.07.022

25. Slopen N, Shonkoff JP, Albert MA, et al. Racial Disparities in Child Adversity in the U.S.: Interactions With Family Immigration History and Income. *American Journal of Preventive Medicine*. 2016;50(1):47-56. doi:10.1016/j.amepre.2015.06.013

26. Harris CT, Steffensmeier D, Ulmer JT, Painter-Davis N. Are Blacks and Hispanics disproportionately incarcerated relative to their arrests? Racial and ethnic disproportionality between arrest and incarceration. *Race and social problems*. 2009;1(4):187.

27. Felitti VJ, Anda RF, Nordenberg D, et al. Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults: The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine*. 1998;14(4):245-258. doi:10.1016/S0749-3797(98)00017-8

28. Cronholm PF, Forke CM, Wade R, et al. Adverse Childhood Experiences: Expanding the Concept of Adversity. *American Journal of Preventive Medicine*. 2015;49(3):354-361. doi:10.1016/j.amepre.2015.02.001

29. Control C for D, Prevention. Behavioral Risk Factor Surveillance System Prevalence and Trends Data, 2013. *Atlanta: National Center for Chronic Disease Prevention and Health Promotio*. Published online 2013.

30. Wade R, Shea JA, Rubin D, Wood J. Adverse Childhood Experiences of Low-Income Urban Youth. *Pediatrics*. 2014;134(1):e13-e20. doi:10.1542/peds.2013-2475

31. Timmerman IGH, Emanuels-Zuurveen ES, Emmelkamp PMG. The social support inventory (SSI): a brief scale to assess perceived adequacy of social support. *Clinical Psychology & Psychotherapy*. 2000;7(5):401-410. doi:https://doi.org/10.1002/1099-0879(200011)7:5<401::AID-CPP253>3.0.CO;2-I

32. Cooley JL, Fite PJ, Rubens SL, Tunno AM. Peer Victimization, Depressive Symptoms, and Rule-Breaking Behavior in Adolescence: The Moderating Role of Peer Social Support. *J Psychopathol Behav Assess*. 2015;37(3):512-522. doi:10.1007/s10862-014-9473-7

33. Llabre MM, Schneiderman N, Gallo LC, et al. Childhood trauma and adult risk factors and disease in Hispanics/Latinos in the US: Results from the Hispanic Community Health Study/Study of Latinos (HCHS/SOL) Sociocultural Ancillary Study. *Psychosom Med*. 2017;79(2):172-180. doi:10.1097/PSY.0000000000000394

34. Mental and Behavioral Health - Hispanics - The Office of Minority Health. Accessed November 13, 2020. https://www.minorityhealth.hhs.gov/omh/browse.aspx?lvl=4&lvlid=69#1

35. Table 50. Use of selected substances in the past month among persons aged 12 and over, by age, sex, race, and Hispanic origin: United States, selected years 2002–2016. Published online 2002:2.

36. Chartier K, Caetano R. Ethnicity and Health Disparities in Alcohol Research. *Alcohol Res Health*. 2010;33(1-2):152-160.

37. Alcohol and the Hispanic Community. Accessed November 16, 2020. https://pubs.niaaa.nih.gov/publications/HispanicFact/HispanicFact.htm

38. 2018 National Survey on Drug Use and Health: Asians/Native Hawaiians and Other Pacific Islanders (NHOPI). :56.

39. 2018 National Survey on Drug Use and Health: African Americans. :58.

40. Borges G, Breslau J, Orozco R, et al. A Cross-National Study on Mexico-US Migration, Substance Use and Substance Use Disorders. *Drug Alcohol Depend*. 2011;117(1):16-23. doi:10.1016/j.drugalcdep.2010.12.022

41. Lui PP, Zamboanga BL. A Critical Review and Meta-Analysis of the Associations Between Acculturation and Alcohol Use Outcomes Among Hispanic Americans. *Alcoholism: Clinical and Experimental Research*. 2018;42(10):1841-1862. doi:https://doi.org/10.1111/acer.13845

42. Vaeth PAC, Caetano R, Rodriguez LA. The Hispanic Americans Baseline Alcohol Survey (HABLAS): The association between acculturation, birthplace and alcohol consumption across Hispanic national groups. *Addictive Behaviors*. 2012;37(9):1029-1037. doi:10.1016/j.addbeh.2012.04.015

43. Witbrodt J, Mulia N, Zemore SE, Kerr WC. Racial/Ethnic Disparities in Alcohol-Related Problems: Differences by Gender and Level of Heavy Drinking. *Alcoholism: Clinical and Experimental Research*. 2014;38(6):1662-1670. doi:https://doi.org/10.1111/acer.12398

44. Yang AL. Epidemiology of Alcohol-Related Liver and Pancreatic Disease in the United States. *Arch Intern Med*. 2008;168(6):649. doi:10.1001/archinte.168.6.649

45. Carrion AF, Ghanta R, Carrasquillo O, Martin P. Chronic Liver Disease in the Hispanic Population of the United States. *Clinical Gastroenterology and Hepatology*. 2011;9(10):834-841. doi:10.1016/j.cgh.2011.04.027

46. Hilton J. Race and ethnicity in fatal motor vehicle traffic crashes 1999-2004. 2006;(DOT HS 809 956). Accessed November 17, 2020. https://trid.trb.org/view/1156305

47. Roudsari B, Ramisetty-Mikler S, Rodriguez LA. Ethnicity, Age, and Trends in Alcohol-Related Driver Fatalities in the United States. *Traffic Injury Prevention*. 2009;10(5):410-414. doi:10.1080/15389580903131506

48. Galvan FH, Caetano R. Alcohol Use and Related Problems Among Ethnic Minorities in the United States. *Alcohol Res Health*. 2003;27(1):87-94.

49. Liira H, Knight AP, Sim MG, Wilcox HM, Cheetham S, Aalto MT. Workplace interventions for preventing job loss and other work related outcomes in workers with alcohol misuse. *Cochrane Database Syst Rev*. 2016;2016(9). doi:10.1002/14651858.CD012344

50. French MT, Maclean JC, Sindelar JL, Fang H. The morning after: alcohol misuse and employment problems. *Applied Economics*. 2011;43(21):2705-2720. doi:10.1080/00036840903357421

51. Organization WH. *Global Status Report on Alcohol and Health 2018*. World Health Organization; 2019.

52. Preiser B, Assari S. Psychological predictors of sexual intimate partner violence against Black and Hispanic women. *Behavioral Sciences*. 2018;8(1):3.

53. Naimi TS, Xuan Z, Coleman SM, et al. Alcohol Policies and Alcohol-Involved Homicide Victimization in the United States. *J Stud Alcohol Drugs*. 2017;78(5):781-788. doi:10.15288/jsad.2017.78.781

54. McDonald JA, Paulozzi LJ. Parsing the Paradox: Hispanic Mortality in the US by Detailed Cause of Death. *J Immigrant Minority Health*. 2019;21(2):237-245. doi:10.1007/s10903-018-0737-2

55. Kalmakis KA, Chandler GE. Adverse childhood experiences: towards a clear conceptual meaning. *Journal of Advanced Nursing*. 2014;70(7):1489-1501. doi:https://doi.org/10.1111/jan.12329

56. Hughes K, Bellis MA, Hardcastle KA, et al. The effect of multiple adverse childhood experiences on health: a systematic review and meta-analysis. *The Lancet Public Health*. 2017;2(8):e356-e366. doi:10.1016/S2468-2667(17)30118-4

57. Cavanaugh CE, Petras H, Martins SS. Gender-Specific Profiles of Adverse Childhood Experiences, Past Year Mental and Substance Use Disorders, and Their Associations among a National Sample of Adults in the United States. *Soc Psychiatry Psychiatr Epidemiol*. 2015;50(8):1257-1266. doi:10.1007/s00127-015-1024-3

58. Sachs-Ericsson NJ, Sheffler JL, Stanley IH, Piazza JR, Preacher KJ. When Emotional Pain Becomes Physical: Adverse Childhood Experiences, Pain, and the Role of Mood and Anxiety Disorders. *Journal of Clinical Psychology*. 2017;73(10):1403-1428. doi:https://doi.org/10.1002/jclp.22444

59. Roscoe JN, Lery B, Chambers JE. Understanding child protection decisions involving parents with mental illness and substance abuse. *Child Abuse & Neglect*. 2018;81:235-248. doi:10.1016/j.chiabu.2018.05.005

60. Child Maltreatment. Children's Bureau | ACF. Accessed November 27, 2020. https://www.acf.hhs.gov/cb/research-data-technology/statistics-research/child-maltreatment

61. Leijdesdorff S, van Doesum K, Popma A, Klaassen R, van Amelsvoort T. Prevalence of psychopathology in children of parents with mental illness and/or addiction: an up to date narrative review. *Current Opinion in Psychiatry*. 2017;30(4):312-317. doi:10.1097/YCO.0000000000000341

62. Staton-Tindall M, Sprang G, Clark J, Walker R, Craig CD. Caregiver Substance Use and Child Outcomes: A Systematic Review. *Journal of Social Work Practice in the Addictions*. 2013;13(1):6-31. doi:10.1080/1533256X.2013.752272

63. Kanamori M, Weissman J, De La Rosa M, et al. Latino Mother/Daughter Dyadic Attachment as a Mediator for Substance Use Disorder and Emotional Abuse. *J Immigrant Minority Health*. 2016;18(4):896-903. doi:10.1007/s10903-015-0312-z

64. de Araújo RMF, Lara DR. More than words: The association of childhood emotional abuse and suicidal behavior. *European Psychiatry*. 2016;37:14-21. doi:10.1016/j.eurpsy.2016.04.002

65. Snyder SM, Monroe CR. Do Child Physical Abuse and Adolescent Peer Relationships Influence Typologies of Illegal and Substance-Use Behaviors During Emerging Adulthood? *Journal of the Society for Social Work and Research*. 2013;4(3):214-244. doi:10.5243/jsswr.2013.15

66. Loria H, Caughy M. Prevalence of Adverse Childhood Experiences in Low-Income Latino Immigrant and Nonimmigrant Children. *The Journal of Pediatrics*. 2018;192:209-215.e1. doi:10.1016/j.jpeds.2017.09.056

67. Teruya SA, Bazargan-Hejazi S. The Immigrant and Hispanic Paradoxes: A Systematic Review of Their Predictions and Effects. *Hisp J Behav Sci*. 2013;35(4):486-509. doi:10.1177/0739986313499004

68. Crouch E, Radcliff E, Strompolis M, Wilson A. Adverse Childhood Experiences (ACEs) and Alcohol Abuse among South Carolina Adults. *Substance Use & Misuse*. 2018;53(7):1212-1220. doi:10.1080/10826084.2017.1400568

69. Fairlie AM, Cadigan JM, Patrick ME, Larimer ME, Lee CM. Unplanned Heavy Episodic and High-Intensity Drinking: Daily-Level Associations With Mood, Context, and Negative Consequences. *J Stud Alcohol Drugs*. 2019;80(3):331-339. doi:10.15288/jsad.2019.80.331

70. Dixon MA, Chartier KG. Alcohol Use Patterns Among Urban and Rural Residents. *Alcohol Res*. 2016;38(1):69-77.

71. Struck S, Stewart-Tufescu A, Asmundson AJN, Asmundson GGJ, Afifi TO. Adverse childhood experiences (ACEs) research: A bibliometric analysis of publication trends over the first 20 years. *Child Abuse Negl*. 2021;112:104895. doi:10.1016/j.chiabu.2020.104895

72. Petruccelli K, Davis J, Berman T. Adverse childhood experiences and associated health outcomes: A systematic review and meta-analysis. *Child Abuse & Neglect*. 2019;97:104127. doi:10.1016/j.chiabu.2019.104127

73. Mersky JP, Janczewski CE. Racial and ethnic differences in the prevalence of adverse childhood experiences: Findings from a low-income sample of U.S. women. *Child Abuse & Neglect*. 2018;76:480-487. doi:10.1016/j.chiabu.2017.12.012

74. Suwinyattichaiporn T, Johnson ZD. The Impact of Family and Friends Social Support on Latino/a First-Generation College Students' Perceived Stress, Depression, and Social Isolation. *Journal of Hispanic Higher Education*. Published online October 16, 2020:1538192720964922. doi:10.1177/1538192720964922

75. Cohen S, Wills TA. Stress, Social Support, and the Buffering Hypothesis. :48.

76. Brody DJ. Prevalence of Depression Among Adults Aged 20 and Over: United States, 2013–2016. 2018;(303):8.

77. Products - Data Briefs - Number 378- September 2020. Published September 21, 2020. Accessed November 13, 2020. https://www.cdc.gov/nchs/products/databriefs/db378.htm

78. Falgas I, Ramos Z, Herrera L, et al. Barriers to and Correlates of Retention in Behavioral Health Treatment among Latinos in Two Different Host Countries: U.S. and Spain. *J Public Health Manag Pract*. 2017;23(1):e20-e27. doi:10.1097/PHH.0000000000000391

79. Hussong A, Chassin L. The stress-negative affect model of adolescent alcohol use: Disaggregating negative affect. *Journal of studies on alcohol*. 1994;55:707-718. doi:10.15288/jsa.1994.55.707

80. Douglas KR, Chan G, Gelernter J, et al. Adverse childhood events as risk factors for substance dependence: Partial mediation by mood and anxiety disorders. *Addictive Behaviors*. 2010;35(1):7-13. doi:10.1016/j.addbeh.2009.07.004

81. Cobb S. Social support as a moderator of life stress. *Psychosomatic Medicine*. 1976;38(5):300-314. doi:10.1097/00006842-197609000-00003

82. Babor TF, Higgins-Biddle JC, Saunders JB, Monteiro MG. The alcohol use disorders identification test (AUDIT). *Guidelines for use in primary care*. 2001;2:1-17.

83. Sherbourne CD, Stewart AL. *Printed in Great Britain 0277-9536191 $3.00 + 0.00 Pergamon Press Plc THE MOS SOCIAL SUPPORT SURVEY*.

84. Spitzer RL, Kroenke K, Williams JB, Group PHQPCS. Validation and utility of a self-report version of PRIME-MD: the PHQ primary care study. *Jama*. 1999;282(18):1737-1744.

85. Löwe B, Decker O, Müller S, et al. Validation and Standardization of the Generalized Anxiety Disorder Screener (GAD-7) in the General Population. *Medical Care*. 2008;46(3):266-274.

86. Probst B, Berenson L. The double arrow: How qualitative social work researchers use reflexivity. *Qualitative Social Work*. 2014;13(6):813-827. doi:10.1177/1473325013506248

87. Dodgson JE. Reflexivity in Qualitative Research. *J Hum Lact*. 2019;35(2):220-222. doi:10.1177/0890334419830990

88. The Practical Guide to Grounded Theory. Delve. Accessed July 8, 2022. https://delvetool.com/groundedtheory

89. O'Connor C, Joffe H. Intercoder Reliability in Qualitative Research: Debates and Practical Guidelines. *International Journal of Qualitative Methods*. 2020;19:1609406919899220. doi:10.1177/1609406919899220

90. Mersky JP, Janczewski CE, Topitzes J. Rethinking the Measurement of Adversity: Moving Toward Second-Generation Research on Adverse Childhood Experiences. *Child Maltreat*. 2017;22(1):58-68. doi:10.1177/1077559516679513

91. Profile of the Unauthorized Population - CA. migrationpolicy.org. Accessed August 14, 2022. https://www.migrationpolicy.org/data/unauthorized-immigrant-population/state/CA

92. Federal Poverty Levels – 3/2022-3/2023 – United Way of Connecticut – 211 and eLibrary. Accessed August 14, 2022. https://uwc.211ct.org/federal-poverty-levels-4115-33116/

93. How much does it cost to live comfortably in California? – Think Real State. Accessed August 14, 2022. https://thinkrealstate.com/how-much-does-it-cost-to-live-comfortably-in-california/

94. Baldassare M, Bonner D, Kordus D, Lopes L. Californians and Housing Affordability. :2.

95. Díaz McConnell E. Rented, Crowded, and Unaffordable? Social Vulnerabilities and the Accumulation of Precarious Housing Conditions in Los Angeles. *Housing Policy Debate*. 2017;27(1):60-79. doi:10.1080/10511482.2016.1164738

96. Mark A. Leach. A Burden of Support? Household Structure and Economic Resources Among Mexican Immigrant Families - Mark A. Leach, 2014. Published 2012. Accessed August 14, 2022. https://journals.sagepub.com/doi/10.1177/0192513X12466385

97. Rugh JS. From Crisis to Progress: Housing and Latino Youth since 2000. *The ANNALS of the American Academy of Political and Social Science*. 2021;696(1):46-78. doi:10.1177/00027162211041364

98. Desmond M, Shollenberger T. Forced Displacement From Rental Housing: Prevalence and Neighborhood Consequences | Demography | Duke University Press. Published 2015. Accessed August 14, 2022. https://read.dukeupress.edu/demography/article/52/5/1751/169475?casa_token=b_jxC9kXGOIAAAAA:qpv21r1DMFQKRWnnSZUuu2SiKApf6vyiOX29XYnJpOelajlFF96v8wbAA9vVRP3yCEVAGuI

99. Medina RM, Byrne K, Brewer S, Nicolosi EA. Housing inequalities: Eviction patterns in Salt Lake County, Utah. *Cities*. 2020;104:102804. doi:10.1016/j.cities.2020.102804

100. Hatch ME, Yun J. Losing Your Home Is Bad for Your Health: Short- and Medium-Term Health Effects of Eviction on Young Adults. *Housing Policy Debate*. 2021;31(3-5):469-489. doi:10.1080/10511482.2020.1812690

101. Gottlieb A, Moose JW. The Effect of Eviction on Maternal Criminal Justice Involvement. *Socius*. 2018;4:2378023118808965. doi:10.1177/2378023118808965

102. Bradford AC, Bradford WD. The effect of evictions on accidental drug and alcohol mortality. *Health Services Research*. 2020;55(1):9-17. doi:10.1111/1475-6773.13256

103. Bocian DG, Reid WL, Quercia RG. Lost Ground, 2011: Disparities in Mortgage Lending and Foreclosures | Center for Responsible Lending. Accessed August 14, 2022. https://www.responsiblelending.org/research-publication/lost-ground-2011

104. Hall M, Crowder K, Spring A. Variations in Housing Foreclosures by Race and Place, 2005–2012. *The ANNALS of the American Academy of Political and Social Science*. 2015;660(1):217-237. doi:10.1177/0002716215576907

105. Potochnick S, Perreira KM, Bravin JI, et al. Food Insecurity Among Hispanic/Latino Youth: Who Is at Risk and What Are the Health Correlates? *Journal of Adolescent Health*. 2019;64(5):631-639. doi:10.1016/j.jadohealth.2018.10.302

106. Maldonado LE, Sotres-Alvarez D, Mattei J, et al. Food Insecurity and Cardiometabolic Markers: Results From the Study of Latino Youth. *Pediatrics*. 2022;149(4):e2021053781. doi:10.1542/peds.2021-053781

107. Pourmotabbed A, Moradi S, Babaei A, et al. Food insecurity and mental health: a systematic review and meta-analysis. *Public Health Nutr*. 2020;23(10):1778-1790. doi:10.1017/S136898001900435X

108. Arenas DJ, Thomas A, Wang J, DeLisser HM. A Systematic Review and Meta-analysis of Depression, Anxiety, and Sleep Disorders in US Adults with Food Insecurity. *J GEN INTERN MED*. 2019;34(12):2874-2882. doi:10.1007/s11606-019-05202-4

109. Osborn B, Morey BN, Billimek J, Ro A. Food Insecurity and Type 2 Diabetes Among Latinos: Examining Neighborhood Cohesion as a Protective Factor. *J Racial and Ethnic Health Disparities*. Published online August 11, 2022. doi:10.1007/s40615-022-01386-4

110. Anguiano RM. Language Brokering among Latino Immigrant Families: Moderating Variables and Youth Outcomes. *J Youth Adolescence*. 2018;47(1):222-242. doi:10.1007/s10964-017-0744-y

111. Niehaus K, Kumpiene G. Language Brokering and Self-Concept: An Exploratory Study of Latino Students' Experiences in Middle and High School. *Hispanic Journal of Behavioral Sciences*. 2014;36(2):124-143. doi:10.1177/0739986314524166

112. Corona R, Stevens LF, Halfond RW, Shaffer CM, Reid-Quiñones K, Gonzalez T. A Qualitative Analysis of What Latino Parents and Adolescents Think and Feel About Language Brokering. *J Child Fam Stud*. 2012;21(5):788-798. doi:10.1007/s10826-011-9536-2

113. Roche KM, Lambert SF, Ghazarian SR, Little TD. Adolescent Language Brokering in

Diverse Contexts: Associations with Parenting and Parent–Youth Relationships in a New Immigrant Destination Area. *J Youth Adolescence*. 2015;44(1):77-89. doi:10.1007/s10964-014-0154-3

114. Wikle JS, Jensen AC, Hoagland AM. Adolescent caretaking of younger siblings. *Social Science Research*. 2018;71:72-84. doi:10.1016/j.ssresearch.2017.12.007

115. Hafford C. Sibling caretaking in immigrant families: Understanding cultural practices to inform child welfare practice and evaluation. *Evaluation and Program Planning*. 2010;33(3):294-302. doi:10.1016/j.evalprogplan.2009.05.003

116. East PL, Weisner TS. Mexican American Adolescents' Family Caregiving: Selection Effects and Longitudinal Associations With Adjustment. *Family Relations*. 2009;58(5):562-577. doi:10.1111/j.1741-3729.2009.00575.x

117. Jocson RM, Alers-Rojas F, Ceballo R, Arkin M. Religion and Spirituality: Benefits for Latino Adolescents Exposed to Community Violence. *Youth & Society*. 2020;52(3):349-376. doi:10.1177/0044118X18772714

118. Fowler PJ, Tompsett CJ, Braciszewski JM, Jacques-Tiura AJ, Baltes BB. Community violence: A meta-analysis on the effect of exposure and mental health outcomes of children and adolescents. *Development and Psychopathology*. 2009;21(1):227-259. doi:10.1017/S0954579409000145

119. Kennedy TM, Ceballo R. Latino Adolescents' Community Violence Exposure: After-school Activities and Familismo as Risk and Protective Factors. *Social Development*. 2013;22(4):663-682. doi:10.1111/sode.12030

120. Zinzow HM, Ruggiero KJ, Resnick H, et al. Prevalence and mental health correlates of witnessed parental and community violence in a national sample of adolescents. *Journal of Child Psychology and Psychiatry*. 2009;50(4):441-450. doi:10.1111/j.1469-7610.2008.02004.x

121. Smith NA, Voisin DR, Yang JP, Tung EL. Keeping Your Guard Up: Hypervigilance Among Urban Residents Affected By Community And Police Violence. *Health Affairs*. 2019;38(10):1662-1669. doi:10.1377/hlthaff.2019.00560

122. Bennett MD, Joe S. Exposure to Community Violence, Suicidality, and Psychological Distress Among African American and Latino Youths: Findings From the CDC Youth Violence Survey. *Journal of Human Behavior in the Social Environment*. 2015;25(8):775-789. doi:10.1080/10911359.2014.922795

123. Androff DK, Ayon C, Becerra D, Gurrola M. U.S. Immigration Policy and Immigrant Children's Well-Being: The Impact of Policy Shifts. *J Soc & Soc Welfare*. 2011;38:77.

124. Rubio-Hernandez SP, Ayón C. Pobrecitos los Niños: The emotional impact of anti-immigration policies on Latino children. *Children and Youth Services Review*. 2016;60:20-26. doi:10.1016/j.childyouth.2015.11.013

125. Pinedo M, Montero-Zamora P, Pasch K, Schwartz S. Immigration policies as political determinants of alcohol and drug misuse among US-born Latinos. *International Journal of Drug Policy*. 2022;106:103754. doi:10.1016/j.drugpo.2022.103754

126. Gulbas LE, Zayas LH, Yoon H, Szlyk H, Aguilar-Gaxiola S, Natera G. Deportation experiences and depression among U.S. citizen-children with undocumented Mexican parents. *Child: Care, Health and Development*. 2016;42(2):220-230. doi:10.1111/cch.12307

127. Raymond-Flesch M, Comfort M, Auerswald CL, et al. Latinx Adolescent Perspectives on the Effects of United States Immigration Policy on Wellbeing. *Youth & Society*. Published online July 27, 2022:0044118X221102189. doi:10.1177/0044118X221102189

128. Chou T, Asnaani A, Hofmann SG. Perception of racial discrimination and psychopathology across three U.S. ethnic minority groups. *Cultural Diversity and Ethnic Minority Psychology*. 2012;18(1):74-81. doi:10.1037/a0025432

129. Farahmand P, Arshed A, Bradley MV. Systemic Racism and Substance Use Disorders. *Psychiatric Annals*. 2020;50(11):494-498. doi:10.3928/00485713-20201008-01

130. Pachter LM, Coll CG. Racism and Child Health: A Review of the Literature and Future Directions. *J Dev Behav Pediatr*. 2009;30(3):255-263. doi:10.1097/DBP.0b013e3181a7ed5a

131. Racism and Its Harmful Effects on Nondominant Racial–Ethnic Youth and Youth-Serving Providers: A Call to Action for Organizational Change: The Society for Adolescent Health and Medicine. *Journal of Adolescent Health*. 2018;63(2):257-261. doi:10.1016/j.jadohealth.2018.06.003

132. Goldweber A, Waasdorp T, Bradshaw C. Examining Associations Between Race, Urbanicity, and Patterns of Bullying Involvement | SpringerLink. Published 2013. Accessed August 28, 2022. https://link.springer.com/article/10.1007/s10964-012-9843-y

133. Hanish LD, Guerra NG. The Roles of Ethnicity and School Context in Predicting Children's Victimization by Peers. *American Journal of Community Psychology*. 2000;28(2):201-223. doi:10.1023/A:1005187201519

134. Hong JS, Kim DH, Hunter SC, et al. Racial/Ethnic Bullying Subtypes and Alcohol, Tobacco, and Marijuana Use Among US Adolescents. *J Racial and Ethnic Health Disparities*. 2022;9(4):1443-1453. doi:10.1007/s40615-021-01081-w

135. Sharkey JD, Ruderman MA, Mayworm AM, et al. Psychosocial functioning of bullied youth who adopt versus deny the bully-victim label. *School Psychology Quarterly*. 2015;30(1):91-104. doi:10.1037/spq0000077

136. Nansel T, Overpeck M, Ramani PS. Bullying Behaviors Among US Youth: Prevalence and Association With Psychosocial Adjustment | Adolescent Medicine | JAMA | JAMA Network. Accessed August 28, 2022. https://jamanetwork.com/journals/jama/article-

abstract/193774

137. Wiener J, Mak M. Peer victimization in children with Attention-Deficit/Hyperactivity Disorder. *Psychology in the Schools*. 2009;46(2):116-131. doi:10.1002/pits.20358

138. Cuadrado I, Fernández I. ¿Son comportamientos residuales las conductas violentas de las víctimasagresivas en las escuelas? Predominio y predicción. *Infancia y Aprendizaje*. 2009;32(4):531-551. doi:10.1174/021037009789610386

139. Alexander JD, Cox RB, Behnke A, Larzelere RE. Is All Parental "Noninvolvement" Equal? Barriers to Involvement and Their Relationship to Latino Academic Achievement. *Hispanic Journal of Behavioral Sciences*. 2017;39(2):169-179. doi:10.1177/0739986317700837

140. Kapke TL, Gerdes AC. Latino Family Participation in Youth Mental Health Services: Treatment Retention, Engagement, and Response. *Clin Child Fam Psychol Rev*. 2016;19(4):329-351. doi:10.1007/s10567-016-0213-2

141. Ceron J. Barriers Among Latino Children in Accessing and Utilizing Mental Health Services. Published online 2017:60.

142. Niaz M. Can Findings of Qualitative Research in Education be Generalized? *Qual Quant*. 2007;41(3):429-445. doi:10.1007/s11135-006-9015-9

143. Taie S, Lewis L. Teachers of Hispanic or Latino Origin: Background and School Settings in 2017-18. :2.

144. Galvan T, Gudino O. Understanding Latinx youth mental health disparities by problem type: The role of caregiver culture. *Psychological Services*. 2019;18. doi:10.1037/ser0000365

145. Alegria M, Vallas M, Pumariega A. Racial and Ethnic Disparities in Pediatric Mental Health. *Child Adolesc Psychiatr Clin N Am*. 2010;19(4):759-774. doi:10.1016/j.chc.2010.07.001

146. Varela RE, Weems CF, Berman SL, Hensley L, de Bernal MCR. Internalizing Symptoms in Latinos: The Role of Anxiety Sensitivity. *J Youth Adolescence*. 2007;36(4):429-440. doi:10.1007/s10964-007-9168-4

147. Kalmakis KA, Chandler GE. Health consequences of adverse childhood experiences: A systematic review. *Journal of the American Association of Nurse Practitioners*. 2015;27(8):457-465. doi:https://doi.org/10.1002/2327-6924.12215

148. Remote and Online Consent | Guides & Resources | How to Submit | Institutional Review Board | Teachers College, Columbia University. Teachers College - Columbia University. Accessed October 4, 2022. https://www.tc.columbia.edu/institutional-review-board/how-to-submit/guides--resources/remote-and-online-consent/

149. Lyons JS, Perrotta P, Hancher-Kvam S. Perceived Social Support From Family and

Friends: Measurement Across Disparate Samples. *Journal of Personality Assessment*. 1988;52(1):42-47. doi:10.1207/s15327752jpa5201_3

150. Irwin M, Artin KH, Oxman M. Screening for Depression in the Older Adult: Criterion Validity of the 10-Item Center for Epidemiological Studies Depression Scale (CES-D) | Depressive Disorders | JAMA Internal Medicine | JAMA Network. Accessed June 15, 2022. https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/1105625

151. Storozuk A, Ashley M, Delage V, Maloney EA. Got Bots? Practical Recommendations to Protect Online Survey Data from Bot Attacks. *TQMP*. 2020;16(5):472-481. doi:10.20982/tqmp.16.5.p472

152. Bureau UC. About Educational Attainment. Census.gov. Accessed September 1, 2022. https://www.census.gov/topics/education/educational-attainment/about.html

153. Bureau UC. Marital Status in the United States. The United States Census Bureau. Accessed January 20, 2021. https://www.census.gov/library/visualizations/interactive/marital-status-in-united-states.html

154. Katon JG, Lehavot K, Simpson TL, et al. Adverse Childhood Experiences, Military Service, and Adult Health. *American Journal of Preventive Medicine*. 2015;49(4):573-582. doi:10.1016/j.amepre.2015.03.020

155. Schulman M, Maul A. Screening for Adverse Childhood Experiences and Trauma. :8.

156. Adverse Childhood Experiences (ACEs) Questionnaire. Accessed August 30, 2022. https://elcentro.sonhs.miami.edu/research/measures-library/aces/index.html

157. Reinert DF, Allen JP. The Alcohol Use Disorders Identification Test (AUDIT): A Review of Recent Research. *Alcoholism: Clinical and Experimental Research*. 2002;26(2):272-279. doi:https://doi.org/10.1111/j.1530-0277.2002.tb02534.x

158. How To Perform Moderation Analysis in SPSS [2 Methods] - Uedufy. Published January 22, 2022. Accessed August 31, 2022. https://uedufy.com/how-to-perform-moderation-analysis-in-spss/

159. Applied Statistics. SAGE Publications Inc. Accessed November 29, 2020. https://us.sagepub.com/en-us/nam/node/54342/print

160. Figure 2. Example of homoscedasticity Ideally, residuals are randomly... ResearchGate. Accessed September 21, 2022. https://www.researchgate.net/figure/Example-of-homoscedasticity-Ideally-residuals-are-randomly-scattered-around-0-the_fig2_319091775

161. Knox J, Hasin DS, Larson FRR, Kranzler HR. Prevention, screening, and treatment for heavy drinking and alcohol use disorder. *Lancet Psychiatry*. 2019;6(12):1054-1067. doi:10.1016/S2215-0366(19)30213-5

162. Han BH, Moore AA, Ferris R, Palamar JJ. Binge Drinking Among Older Adults in the United States, 2015 to 2017. *Journal of the American Geriatrics Society*. 2019;67(10):2139-2144. doi:10.1111/jgs.16071

163. Popovici I, French MT. Binge drinking and sleep problems among young adults. *Drug and Alcohol Dependence*. 2013;132(1):207-215. doi:10.1016/j.drugalcdep.2013.02.001

164. Courtney KE, Polich J. Binge Drinking in Young Adults: Data, Definitions, and Determinants. *Psychol Bull*. 2009;135(1):142-156. doi:10.1037/a0014414

165. Felitti VJ. The Relation Between Adverse Childhood Experiences and Adult Health: Turning Gold into Lead. *Perm J*. 2002;6(1):44-47.

166. Bellis MA, Hughes K, Leckenby N, Perkins C, Lowey H. National household survey of adverse childhood experiences and their relationship with resilience to health-harming behaviors in England. *BMC Medicine*. 2014;12(1):72. doi:10.1186/1741-7015-12-72

167. Leung JPK, Britton A, Bell S. Adverse Childhood Experiences and Alcohol Consumption in Midlife and Early Old-Age. *Alcohol and Alcoholism*. 2016;51(3):331-338. doi:10.1093/alcalc/agv125

168. Duffy KA, McLaughlin KA, Green PA. Early life adversity and health-risk behaviors: proposed psychological and neural mechanisms. *Ann N Y Acad Sci*. 2018;1428(1):151-169. doi:10.1111/nyas.13928

169. Lechner WV, Laurene KR, Patel S, Anderson M, Grega C, Kenne DR. Changes in alcohol use as a function of psychological distress and social support following COVID-19 related University closings. *Addictive Behaviors*. 2020;110:106527. doi:10.1016/j.addbeh.2020.106527

170. Zapolski TCB, Fisher S, Banks DE, Hensel DJ, Barnes-Najor J. Examining the Protective Effect of Ethnic Identity on Drug Attitudes and Use Among a Diverse Youth Population. *J Youth Adolescence*. 2017;46(8):1702-1715. doi:10.1007/s10964-016-0605-0

171. Espinosa-Hernandez G, Noel NE, Vasilenko SA, McCrimmon J, Moran AH. Associations between parental and adolescent alcohol use: The role of gender and familism support. *Journal of Adolescence*. n/a(n/a). doi:10.1002/jad.12077

172. Palant A, Himmel W. Are there also negative effects of social support? A qualitative study of patients with inflammatory bowel disease. *BMJ Open*. 2019;9(1):e022642. doi:10.1136/bmjopen-2018-022642

173. Williamson JA, Oliger C, Wheeler A, O'Hara MW. More social support is associated with more positive mood but excess support is associated with more negative mood. *Journal of Social and Personal Relationships*. 2019;36(11-12):3588-3610. doi:10.1177/0265407519831771

174. Shieh G. Detecting Interaction Effects in Moderated Multiple Regression With Continuous

Variables Power and Sample Size Considerations. *Organizational Research Methods*. 2009;12(3):510-528. doi:10.1177/1094428108320370

175. Making sense of ourselves. Making sense of ourselves. Accessed October 1, 2022. https://www.open.edu/openlearn/health-sports-psychology/making-sense-ourselves/health-sports-psychology/making-sense-ourselves

176. Fast Facts: Preventing Adverse Childhood Experiences |Violence Prevention|Injury Center|CDC. Published April 14, 2022. Accessed October 6, 2022. https://www.cdc.gov/violenceprevention/aces/fastfact.html

177. Kim D, Li AA, Gadiparthi C, et al. Changing Trends in Etiology-Based Annual Mortality From Chronic Liver Disease, From 2007 Through 2016. *Gastroenterology*. 2018;155(4):1154-1163.e3. doi:10.1053/j.gastro.2018.07.008

178. Spitzer RL, Kroenke K, Williams JBW, Löwe B. A Brief Measure for Assessing Generalized Anxiety Disorder: The GAD-7. *Arch Intern Med*. 2006;166(10):1092. doi:10.1001/archinte.166.10.1092

179. PROCESS macro for SPSS and SAS. The PROCESS macro for SPSS, SAS, and R. Accessed October 2, 2022. http://processmacro.org/

180. Scott KM, Wells JE, Angermeyer M, et al. Gender and the relationship between marital status and first onset of mood, anxiety and substance use disorders. *Psychol Med*. 2010;40(9):1495-1505. doi:10.1017/S0033291709991942

181. Ferrari AJ, Charlson FJ, Norman RE, et al. Burden of Depressive Disorders by Country, Sex, Age, and Year: Findings from the Global Burden of Disease Study 2010. *PLOS Medicine*. 2013;10(11):e1001547. doi:10.1371/journal.pmed.1001547

182. Lee S, Tsang A, Breslau J, et al. Mental disorders and termination of education in high-income and low- and middle-income countries: epidemiological study. *Br J Psychiatry*. 2009;194(5):411-417. doi:10.1192/bjp.bp.108.054841

183. Patel V, Kleinman A. Poverty and common mental disorders in developing countries. *Bull World Health Organ*. 2003;81:609-615. doi:10.1590/S0042-96862003000800011

184. Predicting levels of Latino depression: Acculturation, acculturative stress, and coping. - PsycNET. Accessed November 24, 2020. /doiLanding?doi=10.1037%2Fa0017357

185. Rosado JI, Ramirez A, Montgomery J, Reyes E, Wang Y. Adverse childhood experiences and its association with emotional and behavioral problems in U.S. children of Latino immigrants. *Child Abuse & Neglect*. 2021;112:104887. doi:10.1016/j.chiabu.2020.104887

186. Chapman DP, Whitfield CL, Felitti VJ, Dube SR, Edwards VJ, Anda RF. Adverse childhood experiences and the risk of depressive disorders in adulthood. *Journal of Affective Disorders*. 2004;82(2):217-225. doi:10.1016/j.jad.2003.12.013

187. Leonard KE, Blane HT. *Psychological Theories of Drinking and Alcoholism*. Guilford Press; 1999.

188. Kenney SR, Anderson BJ, Stein MD. Drinking to cope mediates the relationship between depression and alcohol risk: Different pathways for college and non-college young adults. *Addictive Behaviors*. 2018;80:116-123. doi:10.1016/j.addbeh.2018.01.023

189. Conner KR, Pinquart M, Gamble SA. Meta-analysis of depression and substance use among individuals with alcohol use disorders. *Journal of Substance Abuse Treatment*. 2009;37(2):127-137. doi:10.1016/j.jsat.2008.11.007

190. Turecki G, Brent DA, Gunnell D, et al. Suicide and suicide risk. *Nat Rev Dis Primers*. 2019;5(1):1-22. doi:10.1038/s41572-019-0121-0

191. Fritz MS, MacKinnon DP. Required Sample Size to Detect the Mediated Effect. *Psychol Sci*. 2007;18(3):233-239. doi:10.1111/j.1467-9280.2007.01882.x

192. Jones MS, Pierce H, Shafer K. Gender differences in early adverse childhood experiences and youth psychological distress. *Journal of Criminal Justice*. Published online May 4, 2022:101925. doi:10.1016/j.jcrimjus.2022.101925

193. Women's increased risk of depression. Mayo Clinic. Accessed October 12, 2022. https://www.mayoclinic.org/diseases-conditions/depression/in-depth/depression/art-20047725

194. Seitz S. Pixilated partnerships, overcoming obstacles in qualitative interviews via Skype: a research note. *Qualitative Research*. 2016;16(2):229-235. doi:10.1177/1468794115577011

195. Microsoft Excel Spreadsheets. Accessed November 29, 2020. http://www.stat-help.com/spreadsheets.html

196. Response Requirements & Validation. Accessed October 13, 2022. https://www.qualtrics.com/support/survey-platform/survey-module/editing-questions/validation/

197. Ibarra JL, Agas JM, Lee M, Pan JL, Buttenheim AM. Comparison of Online Survey Recruitment Platforms for Hard-to-Reach Pregnant Smoking Populations: Feasibility Study. *JMIR Research Protocols*. 2018;7(4):e8071. doi:10.2196/resprot.8071

198. Gonzales M, Blashill AJ. Ethnic/racial and gender differences in body image disorders among a diverse sample of sexual minority U.S. adults. *Body Image*. 2021;36:64-73. doi:10.1016/j.bodyim.2020.10.007

199. Online Research Panels & Samples for Surveys. Qualtrics. Accessed October 8, 2022. https://www.qualtrics.com/research-services/online-sample/

200. Kossinets G, Watts DJ. Origins of Homophily in an Evolving Social Network. *American Journal of Sociology*. 2009;115(2):405-450. doi:10.1086/599247

201. Rosenquist JN. The Spread of Alcohol Consumption Behavior in a Large Social Network. *Ann Intern Med*. 2010;152(7):426. doi:10.7326/0003-4819-152-7-201004060-00007

202. Conner KR, Pinquart M, Gamble SA. Meta-analysis of depression and substance use among individuals with alcohol use disorders. *Journal of Substance Abuse Treatment*. 2009;37(2):127-137. doi:10.1016/j.jsat.2008.11.007

203. Schry AR, White SW. Understanding the relationship between social anxiety and alcohol use in college students: A meta-analysis. *Addictive Behaviors*. 2013;38(11):2690-2706. doi:10.1016/j.addbeh.2013.06.014