UNIVERSITY OF CALIFORNIA

Santa Barbara

Examining the relations between gender, latent classes of adverse childhood experiences (ACEs), and internalizing/externalizing symptoms among Latinx teens

A dissertation submitted in partial satisfaction of the

requirements for the degree Doctor of Philosophy

in Counseling, Clinical, and School Psychology

by

Kelly M. Whaling

Committee in charge:

Professor Jill Sharkey, Chair

Professor Tania Israel

Professor Karen Nylund-Gibson

Professor Steve Smith

September 2021

The dissertation of Kelly M. Whaling is approved.

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Steve Smith

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Tania Israel

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Karen Nylund-Gibson

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Jill D. Sharkey, Committee Chair

June 2020

ACKNOWLEDGEMENTS

I am deeply humbled and grateful for the many people without whom this dissertation would not exist. To Dr. Mark Carrier and Dr. Larry Rosen at California State University, Dominguez Hills- everything within these pages, I owe to you both. To Dr. Michele Berk and Dr. Claudia Avina for exposing me to Dialectical Behavior Therapy: my experiences researching with you revealed my interests in adolescent trauma, suicide, and reducing health disparities. To my amazing former advisor, Dr. Scott Plunkett- as you know, no one will ever have enough words to appropriately acknowledge your influence. Thank you so much to Drs. Rachel Hopsicker and Anna Krasno for modeling clinical skills and fostering my confidence in connecting with youth with complex trauma, and to Rachel and Dr. Ryan Smith for their generosity in sharing data.

To all of the lab members, graduate and undergraduate, at UC Santa Barbara who supported this work through giving continuous feedback on iterations of this dissertation. To the lovely students in my program, within my cohort and without, that provided the friendship and lighthearted moments of joy necessary to continue this work. To Leslie, Ludy, and Vanessa for demonstrating persistence, unconditional love, and a passion for helping others- I could not be the clinician and researcher I am without your consistent love and support.

To Dr. Tania Israel - thank you for all of the time and energy spent preparing me for my qualifying exams, proposing, writing, and defending this dissertation. To Dr. Steve Smith- thank you. When I needed a safe space, you were always available, and always let me know I deserved to be here and that I would walk away with a doctoral degree. Your sage guidance

taught me how to be myself while also being an academic. To Dr. Karen Nylund-Gibson- when I went into your office to ask about latent class analysis, I walked out enrolling in the QMSS emphasis, joining your lab, and with a giant bag of fresh snap peas. You are a tireless advocate for students, and an unparalleled model of how to be a successful academic without sacrificing your true self. To Jill, I am beyond blessed to have met you and gotten to work with you. Immediately, you recognized the academic potential I had, yet somehow simultaneously you never lost sight of the fact that I am also worthy as a human- this is a rare balance that few mentors can master. I am forever grateful that you took a chance on me as an advisee at a critical period in my professional development. You taught me to face problems head on, and embrace mistakes as opportunities for growth. You have helped me reflect on every professional milestone and opportunity- positive and negative- to make sense and meaning that will propel my personal and professional growth. I have so appreciated watching our professional relationship develop over the last three years, and I look forward to our continued collaboration and friendship as colleagues. I could probably write a dissertation chapter-length acknowledgment of all of the time, resources, and energy you provided me during lab meetings, appointing me to be a grant coordinator and supervisor of undergraduates, always ensuring I had financial support in the program, giving feedback on manuscripts and dissertation writing, preparing for qualifying exams, and engaging in community outreach, but I won't. Instead I will just say, from the bottom of my heart, thank you.

A belated thank you to Dr. Olga Belik and my unflinchingly supportive team of supervisors and colleagues at Providence St. John's Child and Family Development Center. Although we

met after the completion of this dissertation, each of you has influenced me personally and professionally more than you can know.

To my partner, Michael, thank you. When I casually said, without really believing I could do it, “I think I’ll add an advanced quantitative methods emphasis to my Ph.D.” you said, “You’d be great at that! Why not?!” and my path to applied mixture modeling began. Thank you for the countless hours you’ve spent reading my internship essays, manuscript drafts, and listening me. Thank you for reminding me I’m a person outside of my dissertation and encouraging me to get up and run with our dog when I’ve been writing in the same spot for eight hours without moving. Thank you for teaching me to celebrate every milestone, big and small, for delighting in sharing in my victories, and helping me cope with disappointments. For all these reasons and more, I know that this dissertation couldn’t exist without your unconditional love and support.

To my parents, who fostered a feisty, questioning, persistent, stubborn, curious, adventurous girl with an insatiable appetite for reading, learning, and exploring. These qualities have served me well in the long-haul that is doctoral education. Thank you for all of your sacrifices that allowed me the privilege of chasing my passions. I love you deeply. Thank you to as well to all of my brothers for being my cheerleaders, and to my extended family of aunts, uncles, cousins, and my grandmother, for your warmth and nurturance.

To my trusty emotional support system, Sophie, Luna, and Megan, thank you. And lastly- thank you to every family I have been privileged enough to meet and work with. I

desperately care for each and every one of you, and none of my work would exist without the experiences that we share. This one is for the kids who are pushed into juvenile detention, on probation, recently released from a psychiatric hold, in foster care, and otherwise entrenched in systems where their inherent worth, resilience, beauty, and potential might be overshadowed. I see you. I believe in you. You matter. And I'm proud of you for existing. Thank you, from the bottom of my heart, for everything you've taught me.

KELLY M. WHALING, M.A.
Department of Counseling, Clinical, and School Psychology
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EDUCATION

2020 – 2021	Pre-doctoral Internship (APA-Accredited) in Psychology Child, Adolescent, & Family Program Child and Family Development Center (CFDC) at Providence Saint John's Hospital, Santa Monica, CA
2015 – 2021	Ph.D. in Counseling, Clinical, and School Psychology (APA-Accredited) Quantitative Methods in the Social Sciences (QMSS) Emphasis University of California Santa Barbara, Santa Barbara, CA **Dissertation:** *Profiles of trauma and subsequent symptom development after adverse childhood experiences (aces) in Latinx adolescents* **Thesis:** *Prevalence rates of chronic hopelessness and suicidal ideation among adolescent gang members of color* **Advisor:** Dr. Jill Sharkey
2013 – 2015	Master of Arts in Clinical Psychology California State University Northridge, Northridge, CA **Thesis:** *Mental health service utilization in Latino college students: A mixed methods study* **Advisor:** Dr. Scott Plunkett
2009 – 2013	Bachelor of Arts in Psychology (Major) and Biology (minor), *summa cum laude* California State University Dominguez Hills, Carson, CA

PEER-REVIEWED PUBLICATIONS

Whaling, K., Der Sarkissian, A., Larez, N., Sharkey, J., Allen, M., and Nylund-Gibson, K. (Under review). Reduced child maltreatment prevention service case openings during COVID-19. *American Psychologist.*

Whaling, K. and Sharkey, J. (2019). Differences in prevalence rates of hopelessness and suicidal ideation among adolescents by gang membership and Latinx identity. *Child and Adolescent Social Work Journal.* X(X), XX-XX. https://doi.org/10.1007/s10560-019-00644-5

Whaling, K., Der Sarkissian, A., Sharkey, J., and Conn, L. (2019). Featured counter-trafficking program: resiliency interventions for sexual exploitation (RISE). *Child Abuse & Neglect.* X(X), XX-XX. https://doi.org/*10.1016/j.chiabu.2019.104139*

Consoli, A. J., Blears, K., Bunge, E. L., Mandil, J., Sharma, H., & **Whaling, K.** (2018). Integrating culture, pedagogy, and humor in CBT with anxious and depressed youth. *Practice Innovations, 3*(2), 138-151. https://doi.org/10.1037/pri0000069

Alpizar, D., Plunkett, S. W., & **Whaling, K.** (2018). Reliability and validity of the 8-item patient health questionnaire for measuring depressive symptoms of Latino emerging adults. *Journal of Latina/o Psychology*, 6(2), 115-130. https://doi.org/10.1037/lat0000087

Consoli, A. J., Khoury, B., **Whaling, K.,** Fernández Oromendia, M., & Daouk, S. (2017). International, sociocultural, and cross-cultural matters in clinical and counseling psychology. In G. Rich, U. P. Gielen, & H. Takooshian (Eds.), *Internationalizing the teaching of psychology*. Charlotte, NC: Information Age Publishing.

Consoli, A. J., **Whaling, K.,** & Vanegas Martínez, G. (2016). Professional organizations. In A. E. Wenzel (Ed.), *Encyclopedia of abnormal and clinical psychology*. Thousand Oaks, CA: Sage.

Rosen, L. D., **Whaling, K**., Rokkum, J., Carrier, L. M., & Cheever, N. A. (2013). The media and technology usage and attitudes scale: an empirical investigation. *Computers in Human Behavior*, *29(6),* 2501-2511. https://doi.org/10.1016/j.chb.2013.06.006

Rosen, L. D., **Whaling, K**., Rab, S., Carrier, L. M., & Cheever, N. A. (2013). Is Facebook creating "iDisorders"? The link between clinical symptoms of psychiatric disorders and technology use, attitudes and anxiety. *Computers in Human Behavior*, *29,* 1243-1254. https://doi.org/10.1016/j.chb.2012.11.012

PEER-REVIEWED PUBLICATIONS IN PREPARATION

Nylund-Gibson, K., **Whaling, K.**, Arch, D., Garber, A., Lewis, S., & Carter, D. (In preparation). Ten frequently asked questions of latent transition analysis.

PUBLISHED OUTCOME EVAUATION TECHNICAL REPORTS

Whaling, K., Sharkey, J., Gonzalez, J.C., del Cid, D., and Jaramillo, N. (2019). *Youth and Family Services within the Council on Alcoholism and Drug Abuse (CADA): 2019 Program Evaluation Report*. A report prepared for the South Coast Task Force on Youth Safety (SCTFYS), Santa Barbara, CA.

Sharkey, J., Gonzalez, J.C., **Whaling, K.,** del Cid, D, Pacheco, D*. (2019). *Santa Barbara Police Activities League (PAL): 2019 Program Evaluation Report*. A report prepared for the South Coast Task Force on Youth Safety (SCTFYS), Santa Barbara, CA.

Whaling, K., Sharkey, J., White, L.*, Scott, M.*, Doty, S.*, Larez, N., O'Donnell, E.*, Harris, T.*, Varela-Sainez, A.*, del Cid, D. (2019). *Youth Interactive: 2019 Program*

Evaluation Report. A report prepared for the South Coast Task Force on Youth Safety (SCTFYS), Santa Barbara, CA.

Janes, L., Jaramillo, N., Der Sarkissian, A., **Whaling, K.,** Guzman, S.*, Toscano, A.*, Stelling, A.*, Powers, M., Gonzalez, J.C., Palacios, E.*, Pacheco, D.*, Scott, M.*, Hunnicutt, K. L., Sharkey, J. (2018). *Santa Barbara County Mental Health Treatment Court Process Evaluation: Santa Barbara Mental Health Treatment Court*. A report funded by the Public Safety Realignment Act, Santa Barbara County Probation, Santa Barbara, CA.

Sharkey, J., Der Sarkissian, A., **Whaling, K.**, Saad, C., Gonzalez, C.J., Janes, L., Jaramillo, N. (2018). *Investigating Racial and Ethnic Disparities in Santa Barbara County's Child Welfare Services: 2018 R.E.D. CWS Evaluation Report.* Santa Barbara County Probation Department, Santa Barbara County Department of Social Services, and the University of California, Santa Barbara (UCSB).

Sharkey, J., Saad, C., **Whaling, K.**, Der Sarkissian, A., Janes, L., & Gonzalez, J.C. (2018). *Investigating Racial and Ethnic Disparities in Santa Barbara County's Department of Behavioral Wellness: 2018 R.E.D. BeWell Evaluation Report.* Santa Barbara County Probation Department, Santa Barbara County Department of Behavioral Wellness, and the University of California, Santa Barbara (UCSB).

Wroblewski, A., Sharkey, J., Der Sarkissian, A., & **Whaling, K.** (2018). *Cross Collaboration at Santa Maria Juvenile Hall: 2018 Evaluation Report.* Santa Barbara County Probation Department, Santa Barbara County Special Education Local Plan Area (SELPA), the Department of Behavioral Wellness, and the University of California, Santa Barbara (UCSB).

Plunkett, S. W., **Whaling, K.**, & Bakhtiari, F*. (2014). *Building connections for success: CSUN Title V evaluation report #3.* California State University Northridge.

* an asterisk indicates an undergraduate student mentee.

SELECTED PRESENTATIONS

Sharkey, J., **Whaling, K.,** der Sarkissian, A., and del Cid, D. (submitted for 2020, October). *Identifying and responding to suspected Commercial Sexual Exploitation of Children (CSEC): A training for educators and school personnel.* Training conducted at the meeting of the California Association of School Psychologists (CASP), California.

Whaling, K., Sharkey, J.D., Harris, T.*, Stelling, A.*, White, L.*, and O'Donnell, E.* (2020, August). *Differences in prevalence rates of hopelessness and suicidal ideation among adolescents by gang membership and Latinx identity.* Poster session presented to the annual meeting of the American Psychological Association, Washington, D.C.

Whaling, K., Sharkey, J.D., White, L.E.*, O'Donnell, E.*, Scott, M.*, Harris, T.*, Larez, N., and der Sarkissian, E. (2020, August). *Examining patterns of adverse childhood experiences (ACEs) as predictors of psychological symptoms in early childhood, school-age, and adolescence*. Poster session presented to the annual meeting of the American Psychological Association, Washington, D.C.

Sharkey, J., **Whaling, K.,** Gonzalez, J.C., del Cid, D. (2019, June). *Implicit Bias 102: An*

advanced training to battle the influence of implicit bias in clinical documentation and work. Training conducted for the Santa Barbara County Department of Behavioral Wellness, California.

Consoli, A. J., Khoury, B., **Whaling, K.,** Fernández Oromendia, M., & Daouk, S. (2018, August). Teaching and Training in Clinical and Counseling Psychology: Advancing International Perspectives. In Rich, G. (Chair), *Internationalizing Psychology Teaching---Whether, Why, and How*. Symposium conducted at the meeting of the American Psychological Association, San Francisco, CA.

Consoli, A.J., Vanegas Martínez, G., & **Whaling, K.** (2017, July). *Values in psychological research and practice.* Keynote address delivered at the 36th Interamerican Congress of Psychology, Mérida, MX – YU.

Whaling, K., Consoli, A.J., & Vanegas Martínez, G. (2017, July). *Perspectives on mental health services: Mexicans and Mexican-Americans receiving treatment for depression in the U.S.* Paper session presented at the 36th Interamerican Congress of Psychology, Mérida, MX – YU.

Vanegas Martínez, G., Consoli, A.J., **Whaling, K.,** & Ballou, S. (2017, July). *Facilitative factors to the treatment engagement of individuals in a co-occurring outpatient integrated treatment program.* Paper session presented at the 36th Interamerican Congress of Psychology, Mérida, MX – YU.

Vázquez, M**., Whaling, K.,** Vanegas Martínez, G., & Plunkett, S.W. (2017, April). *Familial risk and protective factors on depression in Latina/o emerging adults.* Poster session presented at the biennial meeting of the Society for Research on Child Development, Austin, TX.

Whaling, K., Jiang, R.*, & Plunkett, S.W. (2017, March). *Parental acceptance-rejection in relation to self-deprecation, worldview, depression, & aggression in Latina/o male and female college students*. Paper presented at the annual meeting of the Society for Cross-Cultural Research, New Orleans, LA.

Whaling, K., Consoli, A. J., & Plunkett, S.W. (2016, August). *Utilization of mental health services in Latina/o college students.* Poster session presented at the annual meeting of the American Psychological Association, Denver, CO.

Consoli, A. J., **Whaling, K.,** Vanegas Martínez, G., Romero Morales, A., & Sheltzer, J. (2016, August). *Alternative cultural paradigms in Latina/o psychology: What we know and what we need to know.* Paper presented at the annual meeting of the American Psychological Association, Denver, CO.

Sheltzer, J., Consoli, A. J., Romero Morales, A., **Whaling, K.,** & Vanegas Martínez, G. (2016, August). *Consumers' voices: Mexican-Americans accessing mental health services for depression.* Poster presentation presented at the annual meeting of the American Psychological Association, Denver, CO.

Lee, W. J.*, Martinez, D., **Whaling, K.,** & Plunkett, S. W. (2014, November). *Do positive esteem and self-deprecation mediate the relationship between parenting behaviors and depressive symptoms of adolescents and emerging adults?* Poster session presented at the annual meeting of the Association for Behavioral and Cognitive Therapies, Philadelphia, PA.

Whaling, K., Martinez, D., Lee, W. J., & Plunkett, S. W. (2014, November). *Reliability and validity of the 8-item Patient Health Questionnaire for measuring depressive symptoms of Latino emerging adults.* Poster session presented at the annual meeting

of the Association for Behavioral and Cognitive Therapies, Philadelphia, PA.

Black, V., Miller, A., Vasquez, L., **Whaling, K.,** & Carrier, L. M. (2014, May). *Low self-esteem as a risk factor for becoming a victim of human sex trafficking.* Poster session presented at the annual meeting of the Society for the Association for Psychological Science, San Francisco, CA.

Whaling, K., Martinez, D., & Plunkett, S. W. (2014, March). *Peer victimization and depression: Moderators for Latino and African American youth.* Poster session presented at the annual meeting of the Society for Research on Adolescence, Austin, TX.

Whaling, K., Miller, A., Leonard, H., Carrier, L. M., & Rosen, L. D. (2013, August). *A structural equation model of the mechanisms of media use in sleep disruption.* Poster session presented at the annual meeting of the American Psychological Association, Honolulu, HI.

Whaling, K., Leonard, H., Carrier, L. M., & Rosen, L. D. (2012, October). *To sleep perchance to dream…about Facebook: The mechanisms of media use and sleep disruptions.* Poster session presented at the annual meeting of the Society for the Advancement of Chicanos and Native Americans in Science, Seattle, WA.

Rab, S., **Whaling, K**., Arikan, M., & Rosen, L. D. (2012, May*). iDisorder: The link between social networking and psychiatric disorders.* Poster session presented at the annual meeting of the Association for Psychological Science, Chicago, IL.

* an asterisk indicates an undergraduate student mentee.

RESEARCH EXPERIENCE

2019 – present Graduate Student Researcher
Department of Education, University of California, Santa Barbara
Supervisor: Dr. Karen Nylund-Gibson

- Participated on the Latent Variable Group research team through conducting literature reviews, finite mixture models, and preparing manuscripts for publication
- Attended weekly lab meetings and presented quarterly on latent variable methodology's use in applied psychology

2017 – present Graduate Student Researcher
Department of Counseling, Clinical, and School Psychology, University of California, Santa Barbara
Supervisor: Dr. Jill Sharkey

- Conducted dissertation research
    - Title: *Profiles of trauma and subsequent symptom development after adverse childhood experiences (aces) in Latinx adolescents*
    - Status: Proposal defended and revisions completed on 09/27/2019. Final dissertation defense is scheduled for April 2020.

    - Committee: Dr. Jill Sharkey, Dr. Tania Israel, Dr. Steve Smith, Dr. Karen Nylund-Gibson
- Engaged in consultation and program evaluations for non-profit after-school agencies, juvenile justice facilities, mental health treatment courts, substance abuse treatment courts, and county mental health agencies with the goal of improving services and reducing county racial disproportionalities in incarceration
- As grant project coordinator for the South Coast Task Force on Youth Safety for the 2017-2018 and 2019-2020 academic years, I managed a team of doctoral and undergraduate students to work with three nonprofit agencies serving youth already involved in, or at-risk for, getting involved with delinquent gangs to develop assessment, evaluation, monitoring, and reporting methodology to determine the impact of their programs. This project also involved my supervision and mentorship for doctoral students and undergraduate students engaging in community-based research, and I was responsible for teaching them the following skills needed for the project: conducting literature reviews, cultivating scientific literacy and the ability to interpret results from manuscripts, creating annotated bibliographies, creating psychometrically valid surveys for quantitative data, facilitating focus groups for qualitative data, and creating recommendations for evidence-based practices at various sites.
- Conducted classroom observations and coded classroom behaviors for quantitative data analyses for program evaluation reports
- Co-facilitated focus groups on with various populations (e.g. incarcerated youth, treatment teams and staff at substance abuse treatment courts) for qualitative analyses for program evaluation reports and participated in regularly scheduled meetings with non-profit after-school agencies, juvenile justice facilities, mental health treatment courts, substance abuse treatment courts, and county mental health agencies
- Participated in the development, implementation, administration, and evaluation of an agency-specific implicit bias training for the county's department of mental health, as well as assisted in writing a technical report summarizing the findings of the training. The implicit bias training ran 3-4 hours in length, and has been presented to Santa Barbara County's Child Welfare Services, Santa Barbara County's Department of Behavioral Wellness, and at various community agencies and university meetings. I also helped create and facilitate an Implicit Bias 102 training, created specifically for clinicians focusing on reducing disparities in diagnoses and treatment.

2015-2017 Graduate Student Researcher
Department of Counseling, Clinical, and School Psychology, University of California, Santa Barbara
Supervisor: Dr. Andrés Consoli

- Developed and submitted Institutional Review Board protocol, obtained IRB to conduct a qualitative research project interviewing Latina survivors of adolescent suicide attempts from a social justice and strengths-based perspective
- Created a school and community-based Latina suicide prevention program, and submitted grant applications and obtained $5,000 funding for this project
- Coded and analyzed qualitative interviews, and conducted consensual qualitative analyses on English and Spanish-language interviews regarding access to mental health care for depressed Latina/os

2015-2017 Graduate Research Assistant
Department of Psychology, California State University, Northridge
Supervisor: Dr. Scott Plunkett

- Completed an independent master's thesis in which I created and submitted IRB and study protocol, created and tested hypotheses, and conducted, transcribed, coded, and analyzed 12 qualitative focus groups with Latinx college students to explore mental health utilization in this population
- Assisted with research that (1) Examines the relationship between neighborhood qualities, family characteristics, peer group, school climate, and mental health of adolescents and emerging adults; and (2) evaluates campus-based programs (e.g., peer mentoring, faculty mentoring, peer learning facilitator)
- Trained and supervised 30-40 undergraduate and graduate research assistants each year as an assistant laboratory supervisor and laboratory supervisor
- Recruited and scheduled participants for focus groups, and the focus groups
- Transcribed and coded qualitative data using open coding, focused coding, and thematic/axial coding
- Conducted statistical analyses using SPSS (e.g., data centering, reliabilities, correlations, multiple regressions ANOVAs, and dominance analyses)
- Developed and created surveys, codebooks, Excel data files, and SPSS data and syntax files
- Collected, coded, entered, and verified self-report surveys and school record data

2011-2013 Undergraduate Research Assistant
Department of Psychology, California State University, Dominguez Hills
Supervisors: Dr. Larry Rosen and Dr. L Mark Carrier

- Wrote and submitted IRB application
- Performed literature reviews and wrote annotated bibliographies

- Conducted statistical analyses using SPSS (e.g., reliabilities, path analyses using multiple regressions, exploratory factor analyses, multiple regressions, hierarchical regressions, ANOVAs)
- Developed and gave presentations to university and financial committees to obtain $80,000 in funding for the purchase of fNIR devices and corresponding software, training, and a technician

2011 Undergraduate Research Assistant
Department of Psychology, California State University, Dominguez Hills
Supervisors: Dr. Carl Sneed

- Moderated weekly focus groups with 6-10 African-American or Hispanic teens and/or mothers
- Recruited and scheduled focus group participants from community organizations
- Performed literature reviews and wrote annotated bibliographies
- Conducted statistical analyses using SPSS (e.g., chi-square, bivariate correlations)
- Transcribed focus group data

TEACHING EXPERIENCE

Spring 2020 PSY 592QM: Quantitative Methods in the Social Sciences Seminar
Invited Lecturer, UCSB

Winter 2020 CNCSP 112: Positive Psychology Across the Lifespan
Graduate Teaching Assistant, UCSB

Summer 2018 CNCSP 112: Positive Psychology Across the Lifespan
Graduate Teaching Associate, UCSB

Winter 2018 CNCSP 114: Psychology of Gender
Graduate Teaching Assistant, UCSB

Fall 2017 PSY 19: Lifespan Human Development
Adjunct, Santa Monica College

Summer 2017 CNCSP 101: Introduction to Applied Psychology/Helping Relationships: Theory and Practice
Graduate Teaching Associate, UCSB

Spring 2016 WRIT 2: Academic Writing
Graduate Teaching Associate, UCSB

Winter 2016	WRIT 2: Academic Writing Graduate Teaching Associate, UCSB
Fall 2016	WRIT 2: Academic Writing Graduate Teaching Associate, UCSB
Summer 2016	CNCSP 115: College Student Peer-Helping and Leadership Graduate Teaching Assistant, UCSB
Winter 2016	SOC108A: Research Traditions in Sociology Graduate Teaching Assistant, UCSB
Fall 2015	PSY 001: General Psychology Adjunct, Westmont College
Fall 2015	PSY 121: Psychology of Learning Adjunct, Westmont College
Summer 2015	PSY 19: Lifespan Human Development Adjunct, Santa Monica College
Fall 2014	PSY 610A: Advanced Child and Adolescent Psychopathology Graduate Teaching Assistant, CSU Northridge
Spring 2014	PSY 460: Counseling & Interviewing Graduate Teaching Assistant, CSU Northridge

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CLINICAL EXPERIENCE

2018 - 2019 Registered Psychological Assistant #94024422
Child Abuse Listening Mediation (CALM), Santa Barbara, CA
Supervisors: Dr. Anna Krasno Jones and Dr. Rachel Hopsicker

- Maintained a caseload of ten individuals and one group on three different treatment teams: Child Trauma Treatment (age 9 – 16), Great Beginnings (age 0 – 8), Whatever it Takes (intensive in-home services)
- Conducted comprehensive Medi-Cal (managed care) intake assessments for all clients, created treatment plans, and tracked symptoms using the CANS, PSC-35, and other measures to guide and monitor service delivery and completed Medi-Cal documentation for every clinical interaction
- Conducted therapy (individual, family, and group) for low-income individuals and families in the field/home, or in the office, who are presenting with post-traumatic stress, adjustment disorders, mood and anxiety disorders, and behavioral disorders

- Planned and co-facilitated multi-family trauma-focused cognitive behavior therapy (TF-CBT) groups for mothers and children who have experienced domestic violence
- Provided emergency crisis intervention services, phone coaching, created safety plans with clients and families, conducted suicide risk assessments
- Participated in two-hour weekly Dialectical Behavior Therapy (DBT) seminar and consultation group
- Collaborated with schools, medical providers, child welfare, community agencies, behavioral health providers, foster families and/or kinship families, and family members to support client's success and well-being in multiple settings, including participation in Child and Family Team (CFT)/Multidisciplinary Team (MDT) meetings
- Attended trainings in Dialectical Behavior Therapy (DBT), Trauma-Focused Cognitive Behavior Therapy (TF-CBT), and Oaklander Gestalt Therapy Model for Children & Adolescents
- Received two hours of group supervision and one hour of individual supervision weekly and as-needed supervision with licensed clinical psychologists, in addition to receiving as-needed supervision with individual and group supervisors, as well as CTT, GB, and WIT program managers

2017 - 2018 Behavioral Health Psychology Practicum Student
Juvenile Justice Facility, Oxnard, CA
Supervisors: Laura Nagle, LCSW and Dr. Katrina Crenshaw

- Conducted intake assessments, created safety plans, and provided crisis intervention services with youth recently booked and those requesting first-time behavioral health services, and conducted suicide and violence risk assessments. Assessed and completed measures at intake and at termination/discharge to monitor service delivery
- Completed "officer of the day" shifts once weekly, a six-hour, on-call crisis intervention shift to provide services to any youth in detention who request services and/or are in crisis
- Maintained a caseload of 3-5 incarcerated youth (age 11 – 19) for ongoing, weekly psychotherapy, who present with post-traumatic stress, mood disorders, behavioral disorders, and psychotic symptoms, as well as 1-2 officer of the day (crisis intervention) shifts weekly, and 1 therapy group
- Planned and co-facilitated weekly "Girls' Group" group therapy (for female-identifying or non-binary youth placed on the "Girls' unit", utilizing evidence-based modalities (Dialectical Behavior Therapy and Seeking Safety)
- Conducted comprehensive intake assessments for all clients and created diagnoses and treatment plans to guide and monitor service

delivery and progress, and assessed and completed outcome measures at termination/discharge

- Attended weekly multidisciplinary team meetings with Providence School, Ventura County Probation, and Ventura County Behavioral Health to discuss client cases
- Communicated with families, schools, placements, and behavioral health providers to support the mental health of youth who are being released, and participated in therapy with recently released youth for a "warm send-off" once in the community
- Participated in Child and Family Team (CFT)/Multidisciplinary Team (MDT) meetings as a provider for youth involved in the child welfare system
- Participated in weekly individual supervision with a licensed social worker, weekly case consultation with the VCBH JJF treatment team, and as-needed individual/group supervision with a psychologist supervised by a licensed psychologist
- Conducted intake sessions and administered, scored, and interpreted court-ordered or clinician-requested psychodiagnostic testing and assessment with incarcerated youth and youth in the community with the following tests: **intelligence** (Wechsler Abbreviated Scale of Intelligence – Second Edition- WASI-2), **achievement** (Wide Range Achievement Test 4- WRAT4), **personality** (Personality Assessment Inventory-Adolescent- PAI-A, Millon Adolescent Clinical Inventory- MACI, Minnesota Multiphasic Personality Inventory- Adolescent- MMPI-A)
- Assisted with the supervision of Mental Health Associate practicum students

2016-2017 Advanced Practicum Student
Hosford Clinic
Santa Barbara, CA
Supervisor: Dr. Maryam Kia-Keating

- Carried a caseload of 5 weekly individual psychotherapy clients seeking services for mood or anxiety disorders, which were viewed live by advanced doctoral candidate supervisors
- Conducted comprehensive intake assessments and formulated diagnoses for clients 1-2 times per month, and presented case conceptualization and treatment recommendations for intake cases to supervisors at CAT (Case Assignment Team) meetings
- Attended monthly didactic and/or administrative clinic meetings (topics discussed include dating/domestic violence, sexual assault, confidentiality/HIPAA, culture, LGBT issues, medication management, suicide risk assessment)
- Participated in three hours of group supervision weekly with a licensed psychologist, which included playing recorded clips of sessions for feedback and training

- Engaged with community partners and tabled events to provide psychoeducation to the community on mental health and wellness, as well as resources that the Hosford Clinic offers through a program called Everybody Does Outreach (e.g. tabled mental health fairs, suicide prevention/awareness walks, presentations at elementary schools, cultural/community events in the Latinx community)

2015-2017 Advanced Practicum Student
Psychology Assessment Center
Santa Barbara, CA
Supervisors: Dr. Ron Brooks, Dr. Erik Lande, Dr. Jordan Witt

- Received training in administering, scoring, interpreting, and writing integrated reports for the following tests: **neuropsychological diagnostic examinations** (Comprehensive Trailmaking Tests, Wechsler Memory Scales, Booklet Categories Test, Tactual Performance Test, NEPSY), **intelligence** (Wechsler Intelligence Scale for Children, Wechsler Adult Intelligence Scale), **achievement** (Woodcock Johnson IV, Wechsler Individual Achievement Test), and **personality** (The Minnesota Multiphasic Personality Inventory, Personality Assessment Inventory)
- Obtained training in providing diagnostic assessment for children and adults referred to the program for ADHD, depression and anxiety, traumatic brain injury, mental illness, learning disability, neurocognitive disorders, personality disorders, and/or social problems
- Received weekly group supervision, including a live video recording of assessment intake sessions and attended weekly didactic seminar
- Provided intake sessions, test administration/scoring/report writing, and feedback sessions to clients

2014 Advanced Practicum Student
Anxiety & Mood Clinic
Northridge, CA
Supervisor: Dr. Jill Razani

- Participated in weekly supervision and weekly didactic seminars in Cognitive Behavioral Therapy (CBT)
- Conducted intake assessments for individuals presenting with mood and anxiety disorders

2013-2015 Advanced Practicum Student
Child & Adolescent Diagnostic Assessment Program
Northridge, CA
Supervisor: Dr. Gary Katz

- Received training in administering, scoring, interpreting, and writing integrated reports for the following tests: **neuropsychological diagnostic examinations** (The Conners Continuous Performance Test 3rd Edition™- Conners CPT 3™, Behavior Rating Inventory of

Executive Function- BRIEF), **intelligence** (Weschler Intelligence Scale for Children- WISC- IV), **achievement** (Woodcock-Johnson III Test of Achievement- WJ-III ACH), and **socioemotional tests** (CBCL, RCMAS-II, CDI-2)

- Administered, scored, interpreted, and wrote integrated assessments reports for children, adolescents, and young adults (18 – 26), and observed a licensed psychologist conducting intake and feedback assessment sessions
- Participated in weekly group supervision and case conceptualization meetings
- Received in-ear, live supervision during testing sessions from licensed psychologist behind a two-way mirror, as well as observed other clinicians administering assessments from behind a two-way mirror and recorded behavioral observations for other clinicians to utilize in report writing

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HONORS AND AWARDS

2020	The University of California, Santa Barbara Dean's Graduate Mentoring Nominee
2018 – 2019	University of California, Santa Barbara Graduate Opportunity Fellowship
2018	The University of California, Santa Barbara Graduate Student Association's Excellence in Teaching Award
2017	American Psychological Foundation (APF) Violet and Cyril Franks Scholarship
2017	UCSB Associated Students' Womxn's Commission Women in Social Justice Award: Audre Lorde Intersectionality Award (2017)
2015	California State University Chancellor's Doctoral Incentive Program Scholarship
2015	CSUN Robert Rainey Award for Most Outstanding Student in Clinical Psychology
2014	California State University Sally Casanova Pre-Doctoral Scholarship, Honorable Mention
2014	California State University, Northridge Associated Students Thesis Grant

2014	Valley Trauma Center Training Scholarship
2012 – 2013	National Institutes of Health (NIH) Maximizing Access to Research Careers (MARC) Undergraduate Student Training in Academic Research (U-STAR) Scholar
2013	CSUDH Most Outstanding Graduating Psychology Student
2013	Annual Student Research Day Oral Presentation Winner

SERVICE

- COVID-19 Santa Barbara County FoodBank Emergency Distribution Driver (2020)
- Gevirtz Graduate School of Education's Fast and Curious Community Speaker (2019)
- Gevirtz Graduate School of Education: CCSP Transition Ceremony Organizing Committee (2018)
- APA Division 35: Society for the Psychology of Women Campus Representative (2016)
- Hosford Clinic Everybody Does Outreach Community Volunteer (2016)
- Graduate Student Association Academic Senate Committee on Diversity & Equity (2015)
- Psi Chi Student Faculty Liaison (2012 to 2013)

Abstract

Examining the relations between gender, latent classes of adverse childhood experiences (ACEs), and internalizing/externalizing symptoms among Latinx teens

by

Kelly M. Whaling

Multiple nationally representative studies in the same time period demonstrate that between 45-63% of all individuals in the United States have lived through at least one adverse childhood experience (ACE; (Felitti et al., 1998; Merrick, Ford, Ports, & Guinn, 2018; Sacks & Murphey, 2018; Sacks, Murphey, & Moore, 2014). ACEs are garnering more attention as more systems (e.g., school, juvenile justice facilities) become aware of their devastating impacts. As more prevention and intervention efforts are funded, it is vital to understand how ACEs interact with one another to influence symptoms and other outcomes (Wolff, Cuevas, Intravia, Baglivio, & Epps, 2018). Some scholars argue in favor of a cumulative risk only approach, however, the importance of an interactional approach, consisting of unique clusters of ACEs, is supported by the developmental trauma disorder framework. The purpose of this study is to investigate whether unique clusters of ACEs exist, and to demonstrate classes utilizing additional ACEs items. Following this, the purpose of the study is to determine whether clusters are practically helpful in real-world clinical settings. Participants consisted of 167 Latinx youth aged 12 – 17 seeking services at a community mental health agency. An ML 3-step LCA (Vermunt, 2010) was used to estimate classes, predict class membership from gender, and predict internalizing/externalizing symptoms from class membership. Due to nearly all fit statistics converging upon either a 2-class or 3-class model, it is likely that both a 2-class model and 3-class model are adequate

models to describe co-occurrences of adverse childhood experiences. As there was acceptable support for a 3-class solution, and an examination of item probabilities revealed meaningful differences amongst the three classes, the present study utilized a 3-class model of ACEs. The three typologies of ACEs constellations that emerged were: (1) *Interpersonal Victimization with High Community Violence and Low Household Dysfunction,* (2) *Healthy Interpersonal Relationships with Divorce and Low Household Dysfunction, and* (3) *Family Interpersonal Victimization with Extreme Household Dysfunction.* Significant gender differences were found when predicting class membership in the *Healthy Interpersonal Relationships with Divorce and Low Household Dysfunction* class, with boys being more likely to be placed in this class than any other class. The *Interpersonal Victimization with High Community Violence and Low Household Dysfunction* demonstrated the greatest rates of internalizing and externalizing symptoms at intake and demonstrated greater internalizing symptoms than externalizing symptoms. With recent calls for the acknowledgment of expanded ACEs, using clinical samples, examining ACEs in diverse populations, and using person-centered analysis instead of variable-centered analysis to move beyond a cumulative risk framework has opened up novel research opportunities. The chronic stress experienced by these youth is devastating, leaving them at risk for a number of deleterious mental and physical health outcomes (Osório et al., 2017). There must be a global shift toward the understanding of ACEs, and beyond this, into understanding *how* we help youth and families experiencing ACEs after collecting these data from them (Finkelhor, 2017). These findings contribute to the pre-existing literature suggesting that the way that traumatic experiences intersect with one another might have differential and clinically significant impacts on psychological functioning.

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Chapter One: Introduction

> Nobody can 'treat' a war, or abuse, rape, molestation, or any other horrendous event, for that matter; what has happened cannot be undone. But what can be dealt with are the imprints of the trauma on body, mind, and soul: the crushing sensations in your chest that you may label as anxiety or depression; the fear of losing control; always being on alert for danger or rejection; the self-loathing; the nightmares and flashbacks; the fog that keeps you from staying on task and from engaging fully in what you are doing; being unable to fully open your heart to another human being. (van der Kolk, 2015, p. 203).

Oftentimes, when imagining a typical childhood experience of someone growing up in the United States, images of riding bicycles to school and eating cheeseburgers at barbeques are conjured. Certainly, we do not imagine domestic violence, parental substance use, neglect, sexual violence, or other traumatic incidents as universal childhood experiences. However, research has demonstrated consistently that over the last 15 years, only 12% of youth aged 5-14 in the United States ride their bicycles to school (National Household Travel Survey, 2009), while multiple nationally representative studies in the same time period demonstrate that between 45-63% of all individuals in the United States have lived through at least one adverse childhood experience (Felitti et al., 1998; Merrick, Ford, Ports, & Guinn, 2018; Sacks & Murphey, 2018; Sacks, Murphey, & Moore, 2014).

In the mid-1980s, Vincent Felitti was overseeing a weight loss clinic housed within a Kaiser Permanente in California. Felitti would routinely witness patients successfully lose upwards of 200 pounds, only to rapidly gain back the weight that they had lost, or more, and

drop out of their weight loss program. After interviewing these patients in an attempt to determine any shared characteristics amongst them, or identify an underlying cause, Felitti was shocked to find that 55% of all patients who dropped out had been sexually abused (Khazan, 2015). These findings drove Felitti to investigate the relation between exposure to traumatic events in childhood and detrimental health outcomes in adulthood. Across two waves of data collection, 17,337 adults returned a questionnaire inquiring about early childhood experiences, current health status, and health behaviors. Results indicated that over half of all participants had experienced at least one adverse childhood experience, 25% had experienced at least two adverse childhood experiences, these experiences predicted poor health and health-related behaviors in adulthood (e.g., risky sexual behaviors, depression, suicide, substance abuse, heart disease, lung disease, liver disease, obesity), and that these risk factors increased exponentially as the amount of trauma experienced increased (Felitti et al., 1998).

Thus, beginning in 1998 and increasing considerably in recent years, there grew to be a large body of substantial evidence suggesting that ACEs lead to a number of detrimental outcomes to both mental and physical health (Evans-Chase, 2014). ACEs were originally defined as physical abuse or neglect, emotional abuse or neglect, sexual abuse, household mental illness, substance use, domestic violence against a mother, incarcerated household member, or parental separation and/or divorce (Felitti et al., 1998). Recent studies have suggested including additional ACEs items to capture the experiences of diverse groups, like sudden loss or deportation (Purewal et al., 2016). Numerous studies propose that the pathway between adverse childhood experiences and subsequent mental and physical health

challenges occur through the chronic over-activation of the central nervous system (Bucci, Marques, Oh, & Harris, 2016) that occurs as a result of toxic, ongoing, childhood stress.

Although the effects are tragic and longstanding, experiences of child abuse and neglect are not uncommon in the United States, with 3.5 million youth being referred in 2017 to Child Protective/Welfare Services due to concerns of maltreatment (U.S. Department of Health and Human Services, 2019). In a sample of participants from 23 states, Merrick, Ford, Ports, and Guinn (2018) found that 61.55% of participants had experienced at least one adverse childhood experience. Unfortunately, youth with high rates of ACEs present with suicidality, aggression, and other maladaptive behaviors and coping mechanisms. These behaviors may be reactions to complex trauma and may be linked to emotion dysregulation and impulsivity brought on by atypical development of the endocrine system and brain as a result of childhood adversity (Anda et al., 2006).

Luckily, although traumatic experiences can never be reversed, the lasting "imprint" of the trauma on the psyche, body, and soul can be treated with a variety of interventions for both youth and adults who have experienced childhood trauma. Unfortunately, due to systemic psychological and physiological changes that are unique to the experience of trauma in childhood, a number of these gold standard interventions for post-traumatic symptoms often demonstrate high attrition rates (Spinazzola, Blaustein, and van der Kolk, 2005). As an adaptation to a chaotic and dangerous environment, youth with high ACEs consistently react, rather than respond, to stimuli, and frequently present in crisis and with low distress tolerance, or, are distrusting of adults due to past betrayals, resulting in challenges in the therapeutic relationship (Eslinger, Sprang, & Otis, 2014). Boyer, Hallion, Hammel, and

Button (2009) found that the mental health of nearly 40% of youth in residential treatment actually declined during their time at these facilities, suggesting that psychologists, counselors, social workers, and other helping professionals must dig deeper into the experiences of trauma to produce effective interventions so that youth with complex experiences do not prematurely terminate.

ACEs Frameworks

A surging interest in the study of adverse childhood experiences over the last two decades has resulted in differing operational definitions of ACEs (Gabrielli, Jackson, Tunno, & Hambrick, 2017), but a common factor across all definitions are domains of child maltreatment and environmental stressors. In the context of child development, and to better inform treatment, it is crucial to understand ACEs: how they shape an individual child's worldview, and influence that child throughout the lifespan.

Cumulative risk framework. The ACEs survey has relied on a *cumulative risk*/*additive framework*, which posits that there is a dose-response relation between ACEs and deleterious health outcomes. The original ACEs survey consisted of ten dichotomous "yes/no" items, regarding three types of abuse, five types of household challenges, and two types of neglect (see Appendix A). The items that an individual endorses are simply summed, resulting in a cumulative ACEs score. Multiple publications following Felitti et al. (1998)'s original study used these cumulative scores to differentially predict risk of various physical and mental diseases (Chapman, Dube, & Anda, 2007; Cunningham et al., 2014; Holman et al., 2016), as well as risky behaviors (Sowder, Knight, & Fishalow, 2018). Utilizing data from the original ACEs study, Felitti (2002) found that individuals with ACEs scores of four

or greater were 460% more likely to experience symptoms of depression than an individual who had not experienced any ACEs.

The cumulative risk model has continued to be applied as a framework for understanding ACEs. For example, in order to determine the influence of ACEs on mortality, Brown et al. (2009) utilized data collected from two waves of the 1992 - 1995 ACEs study (n = 17,337). The National Death Index is a database which reports between 93% and 98% of deaths within the United States. Utilizing state lived in, date of birth, social security number, first name, last name, middle initial, and gender, Brown et al. matched respondents of the survey to their corresponding deaths as recorded in the National Death Index. Findings from the National Death Index indicated that 1,539 individuals who took the original ACEs survey had died at some point between taking the survey (1992 – 1995) and the time of the present study (December 31st, 2006). As participants consisted of participants from the original ACEs study, the sample was largely White, older, and upper-middle class. Most striking is the finding that individuals with an ACEs score of six or greater died approximately twenty years earlier than individuals who did not endorse any ACEs (Brown et al., 2009). Overall, this body of literature suggests that for every additional adverse childhood experience endorsed, the magnitude and likelihood of negative health outcomes also increases, potentially resulting in dramatically premature death rates.

Interactional framework. As the implementation of ACEs surveys increase within the United States, researchers continue to investigate differing methodologies and frameworks with which to understand this information. What some researchers have referred to as a "latent class approach" (Lanier et al., 2018; Merians et al., 2019), I will refer to as an

"*interactional framework*" to account for a broader range of potential analytic techniques. Some researchers have argued that an interactional framework could be helpful to understand the impact of ACEs. Conceptualizing ACEs using an interactional framework suggests that the ways in which different traumatic experiences co-occur may provide useful information, regardless of the cumulative score. For example, the original ACEs survey consists of ten items regarding adverse experiences. With ten dichotomous items, there exist 1,024 (2^{10}) different possible combinations of traumatic experiences. Relying solely on a cumulative risk framework implies that there is no significant heterogeneity amongst these combinations and that it is purely the cumulative amount of trauma experienced that matters.

Using the Longitudinal Studies on Child Abuse and Neglect (LONGSCAN) dataset from the National Data Archive on Child Abuse and Neglect (NDACAN), O'Hara, Legano, Homel, Walker-Descartes, Rojas, and Laraque (2015) sought to examine if differences between the interactional and cumulative approaches exist. O'Hara et al. (2015) ran regression analyses for 271 neglected-only children and 101 children who were neglected and physically abused, to determine if different patterns of exposure (i.e., (1) abused and neglected compared to (2) neglected-only) would differentially predict performance on a cognitive assessment. Participants who had been neglected-only (i.e., not abused) demonstrated significantly worse performance on the WPPSI-R's vocabulary subtest than participants who had experienced both neglect *and* abuse. Employing a cumulative risk framework, the youth in the abused and neglected subgroup (ACEs = 2) would be considered at a greater risk for poor outcomes than youth in the neglected-only subgroup (ACEs = 1). As a result of employing a cumulative risk framework to understand ACEs, the abused and

neglected youth may receive increased attention, intervention, or services, despite the fact that youth with a *lower* ACEs score (i.e., neglected-only) demonstrated significantly worse performance.

In this study, the youth who had experienced more trauma, and had been both neglected and abused, actually demonstrated *better* performance than youth who had experienced less trauma; O'Hara et al. (2015) argued that this may be due to the characteristics of the trauma experienced. Although traumatic, experiences of abuse may represent *some* sort of stimulation, enrichment, or communication to a developing child, resulting in more opportunities for cognitive development. This study illustrates one potential scenario in which it is the underlying characteristic of the trauma, rather than the cumulative experiences of trauma, that effected cognitive performance, demonstrating the necessity of investigating ACEs from an interactional framework.

Despite hypothesizing an interactional approach to conceptualize ACEs, results of some latent class studies still support a dose-response dependent pattern of ACEs (Liu, Kia-Keating, & Nylund-Gibson, 2018). Thus, the utility of an interactional approach and the existence of meaningful profiles of trauma experiences remains an unanswered question within the literature. The present study does not seek to explain whether an additive or interactional framework is "better" for approaching ACEs data, as both approaches may be methodologically valid, useful, and offer different benefits depending upon need. Instead, this study provides critical insight into the ongoing question of the utility of an interactional approach when working with ACEs data, offering an expanded contribution to the literature.

Significance of the Problem: Necessity for Further Study

The original ACEs study was the first to document the importance of ACEs and continues to be groundbreaking. Felitti et al. (1998) spearheaded an entire movement toward trauma-informed practice in the medical, behavioral, and public health spheres. However, as it is the first of its kind, and conducted over two decades ago, some limitations do exist that the present study addresses. The original ACEs study, and decades of follow-up research, incorporates an overwhelmingly White sample (sometimes as great as 80%), which does not match the racial or ethnic make-up of the United States (U.S. Census Bureau, 2018), and certainly does not match the racial and ethnic make-up of those seeking services at non-profit community mental health centers. Further, as racial and ethnic demographics in the United States shift, it is important to ensure the data used to make policy is representative of the current demographic makeup of the United States. In 1950, 90% of individuals in the United States identified as White, in 1990, this number decreased to 80% of individuals (U.S. Census Bureau, 2005), and this demographic has continued decreasing in recent years, to approximately 60% (U.S. Census Bureau, 2018). Meanwhile, the United States' Latinx population is increasing rapidly. In 2009, 22% of youth under 18 in the United States identified as Latinx (Fry & Passel, 2009), and in 2018, this number has increased to nearly 27% (Manual Krogstad, 2019), and is increasing even faster in states like California. Gavin Newsom, elected to serve as California's governor in 2019, included $105 million to screen for ACEs, specifically (Barry-Jester, 2019). In 2018, 52.1% of California's population of youth identified as Hispanic/Latinx (U.S. Census Bureau, 2018).

Thus, a need exists for research both examining ACEs in marginalized and overlooked communities, and possibly expanding the definition of ACEs to increase their

relevance for contemporary youth. Finkelhor, Shattuck, Turner, and Hamby (2013) found that the following items were also statistically significant in predicting detrimental physical and behavioral health outcomes, some to a greater extent than items on the original ACEs Study: experiencing racism, bullying, or community violence; living in an unsafe neighborhood; or having lived in foster care. Recent studies have corroborated the findings that these events are comparable adverse childhood experiences (Hertz, Everett Jones, Barrios, David-Ferdon, & Holt, 2015; Liu, Kia-Keating, Nylund-Gibson, 2018; Wade, Shea, Rubin, & Wood, 2014), in addition to low socioeconomic status (Finkelhor, Shattuck, Turner, & Hamby, 2015). Natural disasters, childhood illness/injury or serious accidents, sudden loss of a loved one, frequently moving, and terrorism are also included by some as significant childhood adversities (Greeson et al., 2014; Grasso, Dierkhising, Branson, Ford, & Lee, 2016; Wade et al., 2014). Medical and mental health centers have begun incorporating items such as juvenile justice involvement, experiencing homelessness, and stress related to immigration (e.g., separation, deportation, detention) into ACEs screenings (Purewal et al., 2016). Although a robust body of literature exists linking childhood ACEs to adverse outcomes in adulthood, this literature primarily consists of the original ten ACEs. To broaden understanding of ACEs, this study incorporates nineteen ACEs: the original ten ACEs and nine additional items to reflect the experience of modern youth. A strength of this study is the incorporation and documentation of expanded ACEs reflecting community needs, which are common traumatic experiences not currently included in ACEs prevention and intervention research (Metzler et al., 2017).

In the original ACEs literature, although ethnic minority participants accounted for less than ¼ of the sample, differences were found. Latinx participants reported endorsing 5.8% more ACEs than White participants (Felitti et al., 1998). Previous studies that examine ACEs in non-White populations have documented that low-income and non-White individuals exhibit a greater count of ACEs than White and upper-income individuals (Cronholm et al., 2015), although this relation decreases when looking across races that share low-income status. Garcia et al. (2017) also reported slightly elevated rates when examining high-risk cumulative ACEs scores (i.e., 3+ ACEs), with White children reporting three or more ACEs 32.7% of the time and Latinx children reporting three or more ACEs 38.6% of the time. This is validated by additional research suggesting Black and Latinx youth are significantly more likely to experience two or more ACEs than White youth (Slopen et al., 2016).

The research examining ACEs and Latinx communities seems to converge around the idea that Latinx individuals experience a greater amount of ACEs than White individuals, unless socioeconomic status is controlled for, and that experiences like discrimination, peer victimization, and community violence are highly prevalent and need to be studied. Few studies have been done on ACEs in Latinx populations, and even less utilizes person-centered approaches to study ACEs in Latinx communities. One study using LCA to examine patterns of ACEs in Black, White, and Latinx youth found ordered classes in line with a cumulative risk framework, of *High Adversity, Moderate Adversity,* and *Low Adversity* (Liu et al., 2018). These classes also demonstrated a previously documented dose-response relation between ACEs and outcomes. In terms of racial and ethnic diversity of the classes,

more Latinx youth fell into the *Moderate* and *High Adversity* classes than White youth. As a result, it is vital to add a focus on Latinx groups to the ACEs literature. In addition to exploring whether meaningful patterns of ACEs may exist, this study also contributes to the literature through investigating prevalence rates of expanded ACEs items.

In addition to a need for studying modern ACEs and ACEs in non-White communities, there is a need to continue studying outcomes of ACEs, especially in treatment-seeking populations. Previous studies have highlighted that youth who experienced complex trauma in childhood often do not meet criteria for post-traumatic stress disorder, but rather, display a number of symptoms across multiple domains that result in many co-morbid diagnoses (van der Kolk, 2009). This complex array of experiences, and responses to experiences, may help to explain the high attrition rates of individuals with complex trauma from treatment (Wamser-Nanney et al., 2017). It is critical to conduct research to determine if there are specific clusters of responses to childhood trauma, and if they differ due to any demographic characteristics, like gender or socioeconomic status. If there are meaningful constellations of traumatic experiences, these constellations may provide helpful insights as to whom the most at-risk clients in clinics are, and what evidence-based methods to increase client and caregiver engagement can be employed for these youth and families.

Finally, a swath of studies conducted on adverse childhood experiences are conducted with adult populations, measuring retrospective adverse childhood experiences, and using these to predict adult physical and mental health problems. With the increasing utilization of the ACEs survey items in the United States as child and youth screening tools, there is a need to assess the association between adverse childhood experiences and outcomes in

adolescence to inform timely interventions. This study adds vital contributions to the literature through: using person-centered approaches to study ACEs, incorporating an expanded definition of ACEs reflecting current research, utilizing a Latinx sample, utilizing a treatment-seeking sample, and measuring ACEs and outcomes in adolescence as opposed to adulthood.

Theoretical Basis of the Study

The present study draws from the theoretical orientation behind "developmental trauma disorder" (van der Kolk, 2005). Developmental trauma disorder refers to a distinct cluster of symptoms that occurs in individuals who experienced trauma: (1) that was ongoing, (2) in childhood, rather than adulthood, (3) disrupted the caregiving system, and (4) included interpersonal abuse or neglect. There is a broad array of literature supporting the differentiation of responses dependent upon an underlying characteristic of the trauma experienced and the developmental time period it was experienced in, leading to "Complex Post-Traumatic Stress Disorder (PTSD)" being included as a disorder distinct from PTSD in the newest revision of the International Classification of Diseases (World Health Organization, 2018). Benefits and challenges of adopting the developmental trauma disorder framework are described in detail in Chapter Two; most importantly, this framework supports the idea that it is not simply the quantity of trauma experienced that leads to deleterious outcomes, but also the *type* of traumatic experiences and the interactions amongst them.

A developmental trauma disorder orientation supports the idea that the ways in which traumatic experiences interact can provide additional valuable information not possible to

gain from using a cumulative, summative framework. The developmental trauma orientation suggests that a particular type of trauma, occurring at a particular time, may differentially influence the ways in which individuals present symptomatically. Proponents of this orientation are responsible for Complex PTSD being included in the ICD-11. The present dissertation is justified as a result of the surging interest in ACEs with little translational research, the inclusion of Complex PTSD in the ICD-11 suggesting the utility of an interactional framework when utilizing ACEs, and the need to conduct ACEs research with an updated, demographically diverse sample.

Problem Statement

ACEs are garnering more attention as more systems (e.g., school, juvenile justice facilities) become aware of their devastating impacts. As more prevention and intervention efforts are funded, it is vital to understand how ACEs interact with one another to influence symptoms and other outcomes (Wolff, Cuevas, Intravia, Baglivio, & Epps, 2018). Wolff et al. (2018, p. 2293) succinctly note that, "prevention and intervention related to a co-occurrence of sexual abuse and emotional neglect surely could or should differ from that of household incarceration paired with household substance abuse." Some scholars argue in favor of a cumulative risk only approach, however, the importance of an interactional approach, consisting of unique clusters of ACEs, is supported by the developmental trauma disorder framework. The purpose of this study is to explore whether higher-level statistical techniques can estimate unique clusters of ACEs in a treatment-seeking sample of Latinx youth, and to subsequently demonstrate the utility of these classes through predicting the symptoms these youth present with at intake. If clusters of ACEs do accurately and

differentially predict the way a client presents upon intake, clinicians in community mental health agencies with few resources can quickly gather information to target treatment without utilizing lengthy assessment instruments. If different constellations of ACEs can be estimated, and these different constellations are able to differentially predict symptom presentation, it is likely certain treatment approaches will be more relevant for some ACEs classes than others. If true, this has significant treatment implications for providers. This information will be disseminated back into the community agency from which the data came, so that it can be applied, and youth and families can immediately benefit.

Research Questions and Hypotheses

Research questions and hypotheses were derived taking into account the extant literature, and the need for further study, in the examination of ACEs. Research questions and hypotheses are as follows:

Research question 1. Are there meaningful clusters of co-occurring adverse childhood experiences using a finite number of discrete ACEs profiles in a Latinx, youth, treatment-seeking sample?

Research question 1.1 If so, what co-occurring ACEs are these clusters comprised of?

Research question 1.1a. If typologies are present, will clusters be differentiated following a cumulative risk framework (i.e., will classes be amount of trauma experienced or type of trauma experiences?), or an interactional framework?

Research question 2. If latent class analysis can estimate meaningfully unique clusters of ACEs within this sample, will gender differences in class membership exist?

Research question 3. If latent class analysis can estimate distinct constellations of ACEs, do these constellations differentially predict the symptom presentation upon intake of Latinx youth seeking services at a community mental health agency?

Chapter Two: Literature Review

It is universally recognized that most individuals who have experienced one traumatic event go on to experience several, or experience several simultaneously (Cook, Blaustein, Spinazzola, & Van der Kolk, 2003; Finkelhor, Turner, Ormrod, & Hamby, 2009; Kessler, 2000). The dominant treatment paradigm when working with individuals who have experienced trauma is to utilize a medical model, in which a professional assesses for symptoms that cause functional impairments and utilizes an evidence-based practice to alleviate the symptoms. One assumption of this model is that all trauma is created equal. However, complex trauma yields complex reactions, particularly in children. Although symptoms may remain the same, or similar, the variance in types of traumatic events preceding symptoms may help to explain high rates of treatment drop-out and non-response (D'andrea, Ford, Stolbach, Spinazzola, & van der Kolk, 2012; Ford, Grasso, Greene, Levine, Spinazzola, & van der Kolk, 2013). Thus, it is vital to begin conducting research analyzing the diverse intersections of traumatic experiences that result in different constellations of experiences, and possibly, reactions to treatment.

Due to shame and stigma (Kennedy & Prock, 2018), or because rates of post-traumatic stress disorder hover below 15% (Atwoli, Stein, Koenen, & McLaughlin, 2015), trauma is not often conceptualized as a widespread occurrence. However, 70.4% of all individuals have experienced at least one traumatic event in their lives (Benjet et al., 2016). As many as one in every two children experience neglect, abuse, or severe household dysfunction before the age of eighteen, and one in eight children will experience at least four different types of these adverse experiences in childhood and adolescence (Felitti et al.,

1998). Neglect, abuse, and household dysfunction make up the term "adverse childhood experiences" (ACEs). Research on adverse childhood experiences has increased dramatically in recent years, with good reason.

Originally, adverse childhood experiences were defined as specific difficulties occurring before age eighteen. These adversities were operationalized as physical, verbal, and sexual abuse, physical and emotional neglect, separation/divorce of parents, having a mother who has experienced domestic violence, or living with a family member who has been incarcerated, experiences mental illness, or struggles with substance abuse (Felitti et al., 1998). Since the inception of ACEs research, multiple studies have consistently demonstrated that approximately half of all individuals have experienced at least one of the aforementioned ten experiences before turning eighteen (Carlson, Yohannan, Darr, Turley, Larez, & Perfect, 2019; Merrick, Ford, Ports, & Guinn, 2018).

In addition to profound psychological consequences (Corcoran & McNulty, 2018), adverse childhood experiences precede a number of striking physiological consequences, including sizeable discrepancies in mortality rates (Brown et al., 2009). For example, individuals experiencing six adverse childhood experiences or more tend to die twenty years earlier on average than individuals who have never experienced any ACEs. In a pioneering study on adverse childhood experiences, described in greater detail below, Felitti et al. (1998) found that 63.9% of their sample had experienced at least one adverse childhood experience, and 12.5% reported that they had experienced four or more. When comparing individuals with four or more ACEs to individuals who have never experienced an adverse childhood experience, individuals who have experienced four or more ACEs are 1.6 times more likely

to experience obesity, 1.9 times more likely to be diagnosed with cancer, 10.3 times more likely to abuse intravenous drugs, 12.2 times more likely to attempt suicide (Felitti et al., 1998), and 3.3 times more likely to engage in HIV-risky sexual behaviors (Fang, Chuang, & Lee, 2016).

The four most common ACEs reported in the sample were physical abuse, household substance abuse, parental separation/divorce, and sexual abuse. In addition to the widespread, devastating costs on an individual level, it is estimated that non-fatal lifetime adverse childhood experiences cost $210,000 and instances of fatal abuse carry a lifetime cost of $1.2 million (Fang, Brown, Florence, & Mercy, 2016).

Theoretical Orientation

This dissertation, and literature review herein, is conducted utilizing a developmental trauma disorder framework. Thus, an underlying assumption of this dissertation, and the theoretical framework from which research questions and hypotheses are created, is that a distinct phenomenon called "developmental trauma disorder" is experienced. Although research regarding the consequences of developmental trauma has been cited for decades, van der Kolk (2009), van der Kolk and colleagues (2009), and van der Kolk & Curtois (2005) first proposed formally including this as a distinct disorder in the Diagnostic and Statistical Manual for Mental Disorders (DSM) approximately ten years ago. Although the DSM has not yet adopted this disorder, the World Health Organization has included "Complex PTSD", a unique symptom profile and response of post-traumatic stress disorder stemming from developmental trauma, into its International Classification of Diseases. Researchers have found evidence supporting this diagnosis for adults (Cloitre, Garvert, Brewin, Bryant, &

Maercker, 2013; Maercker et al., 2013; Rosenfield, Stratyner, Tufekcioglu, Karabell, Mckelvery, & Litt, 2018), and there is burgeoning support that this diagnosis is valid in youth (Ottisova, Smith, & Oram, 2018; Sachser, Keller, and Goldbeck, 2017).

Strengths and appropriateness of using a developmental trauma disorder framework for research. The present dissertation does not seek to contribute to the developmental trauma disorder literature, nor does it seek to reconcile valid conflicts within the field regarding developmental trauma disorder (Rahim, 2014). Developmental trauma disorder is invoked in this dissertation for the purpose of a unifying a coherent philosophy. Through this philosophy, I organize a synthesis of the literature, provide a lens from which to identify areas requiring more study in the literature, and provide context for research questions and hypotheses herein. Within the last decade, a number of researchers have provided substantial contributions to the developmental trauma disorder literature (Kisiel et al., 2014; Levin, 2009; Teague, 2013; van der Kolk, 2005), which guide this dissertation.

The developmental trauma disorder literature posits that there is a clinically distinct impact of experiencing repeated, childhood, interpersonal abuses compared to single-incident trauma and/or later-life abuse or trauma (D'Andrea et al., 2012). This occurs for several reasons. First, on a biological level, it is argued that the stress experienced during childhood trauma occurs in a critical developmental period causing lasting physiological changes. As a result of experiencing chronic stress in childhood, changes to the nervous and endocrine systems occur that cause difficulties in affect regulation, emotion regulation, establishing a stable sense of self/self-concept, and interpersonal challenges.

It is argued that an adult experiencing trauma for the first time would likely not face the same challenges following a trauma, as a result of the developed, stable, and resilient internal resources that were formed during their normative childhood development. Secondly, there are psychological consequences of experiencing repeated maltreatment at the hands of a caregiver or other trusted adult. A variety of early theorists from diverse theoretical orientations in psychology purport that as children, our social relationships are integral in helping us understand who we are (Bandura, 1969; Bowlby, 1978; Fairbairn, 1952; Piaget, 1964; Rogers, 1959; Vygotsky, 1978). If a child experiences threatened or actual violence, especially as discipline, they may begin to internalize false and negative ideas about their worth or goodness, which manifest later as psychological and physiological ailments. As a result, these unique psychological and physiological reactions to complex childhood trauma yield a wide variety of diagnoses with the underlying theme of transdiagnostic dysregulation. Thus, the present dissertation is conducted under the assumption that there is an underlying, latent construct experienced by youth who experience multiple traumas in childhood, and that this construct differs depending upon not only chronicity, but also type of trauma experienced.

Youth that have experienced trauma frequently do not meet the criteria for post-traumatic stress disorder in the DSM and are instead undiagnosed or diagnosed with disorders where trauma is not a focus of treatment. For example, in a longitudinal study of 1,420 youth in the general population, Copeland, Keeler, Angold, & Costello (2007) found that although over 66% of the sample had experienced a traumatic event, only half of a percent of the sample met criteria for DSM-IV post-traumatic stress disorder. In this study,

participants met criteria for depressive disorders and other anxiety disorders. In their discussion, Copeland et al. (2007) note that it may be of use to recognize depression and anxiety as reactions to trauma, in addition to post-traumatic stress disorder. Extending this, after synthesizing the literature on childhood trauma, D'Andrea, Ford, Stolbach, Spinazzola, & van der Kolk (2012) suggest that diagnosing multiple disorders when there is one underlying, latent factor that is at the etiology of a specific cluster of symptoms breaks the law of parsimony.

As stated previously, experiencing trauma in youth results in a specific cluster of symptoms distinct from post-traumatic stress disorder, and some studies have suggested that the type of trauma experienced in youth results in even further differences in symptom presentation and treatment outlook. For example, experiencing direct interpersonal violence through sexual abuse, physical or emotional neglect, or physical or emotional abuse is violence perpetrated directly from a caregiver to a child, which may spurn feelings of betrayal (Freyd, 1996). Youth who do not experience this interpersonal, direct violence, and who instead experience challenges such as an incarcerated household member or experiencing a parental divorce may not have the same feelings of betrayal, which would influence the type of cognitive distortions or other symptoms experienced.

Supporting the idea that differential trauma experiences result in differential reactions to treatment, Spinazzola, van der Kolk, and Ford (2018) found that traumatic loss was an adverse childhood experience that was not associated with post-traumatic stress disorder or developmental trauma disorder, suggesting that it is not just the experience of childhood trauma that causes diverse reactions in youth, but perhaps the type of trauma. In a sample of

9,336 youth receiving treatment at National Child Traumatic Stress Network sites, 48% had clinically significant behavioral symptoms at home or in their communities outside of school and 37% had clinically significant problems in school or in their daycare (Pynoos et al., 2008). Although nearly half of the sample exhibited clinical levels of behavioral dysfunction, 46% of the sample not only did not meet criteria for post-traumatic stress disorder but did not meet criteria for any mental health diagnosis in the DSM-IV as a result of the heterogeneity of reactions to trauma. Finally, in a longitudinal study of 977 youth, Lewis, McElroy, Harlaar, and Runyan (2016) further support the idea that reactions to trauma and sequalae of trauma may vary based upon the characteristics of the trauma. Lewis et al. (2016) found that even after controlling for multiple trauma experiences, youth who had experienced sexual abuse in childhood exhibited the most severe internalizing and externalizing symptoms.

Calls for future research examining ACEs stress the need for research conducted from a resilience perspective. One alternative theoretical framework to the integrated developmental trauma disorder framework listed here is a cumulative risk framework, in which the type of trauma is less important to treatment than the sheer number of traumatic events experienced. For example, a youth who has experienced interpersonal victimization at the hands of a caregiver may actually be more likely to discontinue treatment earlier than a youth with greater, but non-interpersonal, cumulative adverse childhood experiences (e.g. a youth who has experienced a life-threatening illness and community violence), or, even a youth who has experienced interpersonal victimization at the hands of peers, as the caregivers in the latter two examples may serve as protective factors facilitating treatment commitment. Preliminary studies further support the idea that certain types of ACEs result in

dysfunction in specific domains related to trauma, rather than a diagnosis, and that individuals with higher rates of cumulative trauma sometimes show lower symptom severity and dysfunction in certain domains (O'Hara, Legano, Homel, Walker-Descartes, Rojas, & Laraque, 2015).

Through outlining this literature, this chapter will provide information necessary to understand the background and significance of the present project. The chapter will first broadly define and discuss adverse childhood experiences, and then outline more specifically some (but not all) of the negative consequences that follow adverse childhood experiences. The chapter will then go on to provide a description of cultural variations found in ACEs research. Current trauma-informed approaches for providing services to youth impacted by ACEs will be reviewed briefly, and the need for a more comprehensive understanding of ACEs to tailor treatment will be highlighted. The chapter will then narrow further, describing the present state of the literature of person-centered data analytic approaches for working with adverse childhood experience data. The chapter will end with a brief summary of the literature, as well as gaps that currently exist in the literature that this dissertation seeks to fill.

Prevalence and Description of Adverse Childhood Experiences (ACEs)

As noted by Jackson, McGuire, Tunnoc, and Makanuid (2019), there is no universally accepted definition for adverse childhood experiences or maltreatment in the field. Adverse childhood experiences include, but are not limited to, items measured by Felitti and colleagues (1998): abuse (e.g. physical abuse, sexual abuse, emotional abuse), witnessing abuse of a mother or stepmother, neglect (e.g. physical neglect, emotional neglect), parental

separation or divorce, living with someone with substance use problems, living with someone who had been incarcerated, and living with someone who experiences mental illness.

The original ACEs Study (Felitti et al., 1998) was conducted as a result of the clinical experiences of Dr. Vincent Felitti. Felitti was running a successful weight loss clinic through Kaiser Permanente in Southern California and over half of the participants continuously dropped out of the program, year after year. Simultaneously, Felitti noticed a disproportionate amount of drop-outs in the study had experienced childhood sexual abuse. As a result, Felitti and collaborators found ten common traumatic childhood experiences throughout the literature and administered a questionnaire to 17,337 Kaiser Permanente patients in two different phases from 1995 through 1997. This study was groundbreaking, as it revealed adverse childhood experiences as a widespread and frequently occurring issue within the United States. Further, the study showed high prevalence rates of adverse experiences across race/ethnicity and gender. Even among college-educated (75.2%) senior citizens (46.6%), the majority of participants had experienced at least one adverse childhood experience (63.9%), with 12.5% reporting that they had experienced four or more. One out of every eight individuals in the study reported experiencing four or greater than four adverse experiences (e.g. emotional abuse and physical abuse and parental separation and parental substance abuse).

The four most common ACEs reported in the sample were physical abuse, household substance abuse, parental separation/divorce, and sexual abuse. Among abuse experiences, 28.3% of the sample reports experiencing physical abuse, 20.7% of the sample reports experiencing sexual abuse, and 10.6% of the sample reports experiencing emotional abuse.

Among household challenges, 26.9% report living with someone who abused substances, 23.3% report experiencing a parental separation or divorce, 19.4% report living in a household with someone who had a mental illness, 12.7% report witnessing domestic violence against their mother, and 4.7% report that someone in their household had been incarcerated. Emotional neglect (14.8%) and physical neglect (9.9%) were only collected during phase two of the study. Adverse childhood experiences are becoming more salient over time, as 12.5% of the population endorsed four or more ACEs in the original Felitti et al. (1998) study, and between 14%-15.2% of the population (utilizing similar demographic samples) endorses four or more of the ten original ACEs in subsequent studies of a non-clinical adult population in the United States (Campbell, Walker, & Egede, 2016; Cunningham, Ford, Croft, Merrick, Rolle, & Giles, 2014; Gilbert et al., 2015; Ford et al., 2011; Wade et al., 2016).

These additional ACEs will be utilized in the present study, as the original ACEs were created in a sample of White, middle-to-upper class adults, and may not be as meaningful in a diverse sample. Further, as discussed below in the methods, having more indicators in a latent class analysis can often make up for a smaller sample size, making the analysis stronger. Finally, the community mental health agency that I partnered with utilizes the extended ACEs.

Subsequent studies examining prevalence rates of adverse childhood experiences in the United States have found similar trends regarding the pervasiveness of adverse experiences, collected both retrospectively, and in real-time. Not only have multiple studies found that over half of adults had experienced at least one adverse childhood experience

(Merrick, Ford, Ports, & Guinn, 2018; Windle et al., 2018), Finkelhor et al. (2015) found that 60.8% of school-aged children had experienced at least one direct instance of violence, crime, or abuse during a one-year period. Due to the overwhelming prevalence of adverse childhood experiences across race/ethnicity, class, and gender, it is vital to understand how these common occurrences may contribute to detrimental individual and societal outcomes.

The Lasting Impact of Adverse Childhood Experiences

Even experiencing just one adverse childhood experience places an individual at risk for mental and physical challenges as they develop; as adverse childhood experiences continue to accumulate across an individual's lifespan, that child experiences compounding and complex effects. The destructive physiological, behavioral, and mental outcomes that these children experience in adolescence and throughout adulthood is thought to be a result of chronic, ongoing, toxic stress accumulating in the body (Danese & McEwen, 2012). The physiological consequences of remaining in a consistent state of fight-flight-freeze are compounded by individuals engaging in risky or maladaptive behaviors to cope with the seemingly ubiquitous state of hyperarousal (Lovallo, 2013). Long-term sequelae of ACEs include: (1) adverse neurological and physiological alterations, (2) poor psychological and behavioral functioning, (3) economic, educational, and occupational challenges, (4) juvenile justice involvement, and (5) challenges in psychotherapy (Olfson et al., 2009).

Adverse neurological and physiological alterations. Practiced responses become automatic responses for efficiency, as "neurons that fire together, wire together" (Hebb, 1949). Although a surge of adrenaline and glucocorticoids are the body's adaptive response to keep itself safe when threatened, the release of these stress hormones becomes the norm

rather than the exception when an individual must consistently be alert in a chaotic and highly stressful environment. Although this is more consistently seen in individuals who experienced polyvictimization in childhood, even single-incident adversities like a natural disaster may cause these alterations (Scaer, 2014). However, it is important to research the ways in interpersonal (i.e., trauma in which a youth is a victim of an act) versus non-interpersonal (e.g., a natural disaster, parental divorce, war) adversities might differentially influence psychological and physiological outcomes, something this study seeks to explore through latent class analysis.

With childhood interpersonal trauma, children learns that attachment figures, caregivers, authority figures, adults, and other family may be dangerous or unpredictable, and to a child, the family is the entire world; thus, the child learns, on a physiological level, that the world is dangerous and unpredictable, and the body behaves as such (van der Kolk, 2015). In non-interpersonal trauma, like war or natural disasters, the child receives similar messages about the unpredictable and unstable nature of life. Van der Kolk (2001) provides a sweeping overview of the physiology of adverse experiences, although these experiences are not limited to childhood. Van der Kolk (2001) describes an array of dysfunctions that occur within the following six distinct neurological and physiological categories: immune system, neuroanatomy of the brain, memory, hypothalamic-pituitary-adrenal axis, neurotransmitters in the brain, and psychophysiological responses.

Consistently high levels of these stress hormones wear the body down over time, contributing to the medical ailments that individuals with high ACEs scores suffer from (Danese & McEwen, 2012). While an individual experiences a threat, causing the

sympathetic nervous system to engage in the fight-flight-freeze response, they are also activating the hypothalamic pituitary adrenal axis to release cortisol (typically thought of as "the" stress hormone) throughout the body. Some children who experience repeated adversity carry greater cortisol than non-maltreated peers, and also experience more extreme spikes in cortisol under stress, and take longer to return to baseline than youth without maltreatment histories (Tarullo & Gunnar, 2006). Alternatively, some youth experience a numbing effect, in which cortisol levels are significantly lower than non-maltreated peers (van der Kolk, 2001), which manifests as "emotional constriction."

While the body responds to stress, the prefrontal cortex, responsible for executive functioning (impulse control, decision-making, concentration, inhibition, future orientation) has limited functioning. Children who have experienced abuse demonstrate worse performance on tasks of inhibition, and children who experienced abuse across multiple developmental stages perform worse than children who experienced abuse during only one developmental period (Cowell, Cicchetti, Rogosch, and Toth, 2015). The links between the prefrontal cortex and the amygdala, the brain's "fear response center", are often impaired as a result of these experiences, and traumatic memories are over-encoded. Additionally, these early adversities can also cause structural damage in the brain through epigenetic processes, such as decreased volume in the amygdala, hippocampus, and prefrontal cortex (Ansell, Rando, Tuit, Guarnaccia, & Sinha, 2012; Pechtel, Lyons-Ruth, Anderson, & Teicher, 2014).

In addition to neurological changes, adverse childhood experiences predict a number of detrimental physical health outcomes. In regards to health outcomes, Felitti et al.'s (1998) original study established a correlation between ACEs scores and chronic obstructive

pulmonary disease, ischemic heart disease, cancer, liver disease, sexually transmitted diseases. Follow-up studies indicate that individuals with ACEs scores of '6' or greater die, on average, twenty years earlier than non-maltreated individuals (Brown et al., 2009). More recent studies with varying samples of adults continue to demonstrate a robust, graded, dose-response relation between ACEs scores and physical health outcomes. Confirming, Felitti et al.'s (1998) finding, meta-analyses indicate that adverse childhood experiences are a significant and powerful risk factor for developing cancer (Holman et al., 2016). Additional harmful health outcomes related to ACEs experiences include obesity (McKelvey, Saccente, & Swindle, 2019). In addition to compounding socioeconomic factors, is possible that psychological, emotional, and behavioral impairments resulting in maladaptive coping mechanisms may play an explanatory role in the development of poor physical health.

Symptom presentation: psychological and behavioral. As stated previously, adverse childhood experiences result in physiological changes, particularly in the brain, and particularly in our limbic system. In addition to being more sensitive to the effects of stressful experiences and stressful environmental stimuli, youth who have experienced ACEs often experience damage to the amygdala, responsible for emotional responses, the hippocampus, responsible for memories, and the prefrontal cortex, responsible for inhibition and emotional control. As a result, these individuals may experience pathogenesis, the development of psychological or behavioral disorders. Alternatively and poignantly, these mental health challenges may also develop, or be exacerbated by, the maladaptive coping skills an individual employs to manage the distress caused by adverse childhood experiences, resulting in a recursive circle. Meta-analyses indicate that ACEs can predict substance use

and psychiatric disorders as strongly, if not to a greater degree, than physical health outcomes (Carr, Martins, Stingel, Lemgruber, & Juruena, 2013; Hughes et al., 2017).

Studies utilizing the original ACEs Study data have found an association between adverse childhood experiences and anxiety, depression, and alcohol use disorder (Anda et al., 2006; Felitti et al., 1998). Multiple additional samples have supported the relation between ACEs and depression (Kalmakis & Chandler, 2015; Oh et al., 2018), post-traumatic stress disorder development and severity (Schalinksi, Teicher, Nischk, Hinderer, Müller, & Rockstroh, 2016), and substance use disorders (Chandler, Kalmakis, & Murtha, 2018). As indicated previously, these disorders may be a result of adverse childhood experiences themselves, but may also be a result of the increases in risk-taking behaviors (Campbell, Walker, & Egede, 2016) and difficulty establishing healthy relationships (Shonkoff et al., 2012) seen in individuals with ACEs.

Adverse childhood experiences temporally precede both long-term (i.e., adult) and immediate (i.e., childhood, adolescence) psychological dysfunction. ACEs are connected to the development of attention-deficit hyperactivity disorder (ADHD; Hunt, Slack, & Berger, 2017; Jimenez, Wade, Schwartz-Soicher, Lin, & Reichman, 2017), delinquency and violence (Garrido, Weiler, Taussig, 2018; Wolff & Baglivio, 2017), non-suicidal self-injury and suicide (Baiden, Stewart, & Fallon, 2017; Kaess et al., 2013), and substance use (Carliner, Keyes, McLaughlin, Meyers, Dunn, & Martins, 2016) during childhood and adolescence.

Long-term sequela of adverse childhood experiences can be seen after childhood and adolescence, and well into adulthood. In adults, there is a strong, predictive relation, between

ACEs and suicide (Merrick, Ports, Ford, Afifi, Gershoff, & Grogan-Kaylor, 2017), substance abuse (LeTendre & Reed, 2017), and depression (Poole, Dobson, & Pusch, 2017).

However, some individuals are more likely than others to experience

Economic, educational, and occupational. In addition to physical and mental health challenges, adverse childhood experiences are predictive of educational and occupational dysfunction across the lifespan, with staggering economic costs. Deficits in educational attainment may help, in part, to explain the costs associated with adverse childhood experiences. Individuals who experienced adverse childhood experiences are less likely to complete high school and enroll in college (Boden, Horwood, & Fergusson, 2007). If these individuals do overcome barriers to high school graduation and college employment, they are significantly less likely to complete college (Duncan, 2000) than peers who have not experienced maltreatment or trauma. Barriers and challenges in achieving higher education lead to employment problems and a loss of income.

Zielinksi (2009) conducted a secondary analysis of data utilizing 5,004 participants from the National Comorbidity Survey (NCS). Participants in the study primarily identified as White (77%), Black (11.2%), or another race (11.8%) and data was collected from 1990 to 1992. Zielinksi ran logistic regressions attempting to determine the extent to which adverse childhood experiences could predict health care coverage, employment status, and socioeconomic status. Race, gender, and age were utilizes as covariates. Individuals with adverse childhood experiences had greater levels of unemployment, lower income, and higher Medicaid use than those who did not endorse a history of adverse childhood experiences. This association grew, as individuals who had a greater cumulative number of

adverse childhood experiences reported greater unemployment, lower incomes, and higher Medicaid than individuals with a lower number of adverse childhood experiences. Like Zielinksi (2009), Sansone, Leung, and Wiederman (2012) also found that various forms of abuse (e.g., sexual, physical) predicted difficulty in maintaining employment. Some studies have found that maltreated individuals are nearly twice as likely to experience unemployment than those who have not experienced abuse (Liu et al., 2013). Over their lifetime, these individuals earn less money than non-abused peers (Font & Maguire-Jack, 2016).

In addition to individual educational and occupational costs that carry a substantial personal and human impact, adverse childhood experiences produce overwhelming costs to the public. Fang, Brown, Florence, and Mercy (2012) found that in instances of "nonfatal child maltreatment", the average lifetime cost to the United States is $210,012, per youth; this cost consists of medical costs during childhood and adulthood, special education cost, and criminal justice cost. The amount of money lost increases when analyzing fatal instances of childhood maltreatment. Fang et al. (2012) found that the productivity loss and medical burden for each child who died as a result of childhood maltreatment amounted to $1,272,900. The comprehensive economic, educational, and occupational costs of adverse childhood experiences can never truly be known, as all of the aforementioned studies require either confirmed cases of maltreatment, or self-report data, and research suggests that individuals who have experienced maltreatment underreport, rather than overreport.

Justice system involvement. There is a strong association between adverse childhood experiences and later juvenile justice system involvement. When comparing justice involved youth to the adults surveyed in the original ACEs study (Felitti et al., 1998),

Baglivio, Epps, Swartz, Huq, Sheer, & Hardt (2014) found that half of their entire sample (n= 64,329) had experienced four or greater ACEs, compared to 13% of individuals in the original ACEs study. Behaviors that occur and are primarily thought to be responses to trauma may act as an explanatory mechanism between ACEs exposure and juvenile justice system involvement. Among youth in foster care, those with elevated exposure to adverse childhood experiences are more likely to abuse substances and commit violent acts (Garrido, Weiler, & Taussig, 2018), even after controlling for age, ethnicity, and sex, suggesting the powerful nature of these experiences.

Not only do youth with ACEs offend at higher rates than youth without ACEs, but even among youth with multiple ACEs, youth with the highest amount of adverse childhood experiences are more likely to be serious, chronic, and violent offenders (SCV; Fox, Perez, Cass, Baglivio, & Epps, 2015). In addition to being more likely to offend, and committing more severe crimes, youth who experience more ACEs begin committing crimes earlier (Baglivio, Wolff, Piquero, & Epps, 2015) and demonstrate higher levels of recidivism (Wolff & Baglivio, 2017). Studies of incarcerated adults suggest similar trends, particularly among women (Jones, Worthen, Sharp, & McLeod, 2018).

Treatment outcomes. It is vital to begin developing an understanding of how adverse childhood experiences interact with one another to address high rates of attrition found in populations who have experienced complex childhood trauma. There are few evidence-based approaches available for youth who demonstrate the severe symptomatology observed in community settings with severely traumatized youth, as most studies have caveats that treatment is not appropriate for youth who are actively suicidal or abusing

substances. Attrition is a serious detriment to therapy for all youth populations and is more pronounced when taking adverse childhood experiences into consideration. Common "gold standard" practices for trauma include the cognitive processing of traumatic events, but these treatments see high attrition rates from children, adolescents, and adults who have experienced trauma in childhood.

Trauma-focused cognitive behavioral therapy is an effective and widely used treatment, reducing symptoms of depression, anxiety, and post-traumatic stress above and beyond other therapeutic modalities across multiple randomized trials (Jensen, Holt, & Ormhaug, 2017). Despite the success of this treatment, youth with trauma may not receive the full benefits of therapy if they do not complete treatment, and even among trauma-specific interventions, large numbers of youth with adverse childhood experiences terminate treatment early. In a sample of 2,579 individuals, Sprang and colleagues (2013) found that over 33% of clients ended treatment before completion. Factors that predicted early treatment drop-out include a post-traumatic stress disorder diagnosis, and oppositional defiant disorder diagnosis, a major depressive disorder diagnosis, and exhibiting externalizing behavior, all of which are common reactions to adverse childhood experiences (Horn, Leve, Levitt, & Fisher, 2019). Thus, there appears to be an issue in which individuals with childhood trauma, receiving specifically trauma-focused care, still end treatment earlier than others. Samples of attrition in trauma-focused cognitive behavior therapy range 15% - 27% for youth who endorse experiencing sexual abuse (Cohen & Mannarino, 1996; Cohen, Deblinger, & Mannarino, 2004). Rates of attrition are higher for young children who experience multiple traumas (Wamser-Nanney & Steinzor, 2016), with some studies reporting 56% of youth

ending treatment prematurely (Scheeringa, Weems, Cohen, Amaya-Jackson, & Guthrie, 2011). These numbers grow when considering community trials over randomized clinical trials (Wamser-Nanney & Steinzor, 2017).

The lingering effects of complex childhood trauma occurring in developmental periods present specific challenges that directly threaten youths' ability to benefit from therapy (van der Kolk et al., 2007). Therapeutic gains rely on a supportive therapeutic relationship in all treatment orientations (Wampold, 2015), but many youths who have experienced adverse childhood experiences struggle to find safety, even in the therapy room, which impacts the therapeutic relationship and may lead to drop out. Further, adaptive strategies that help youth survive day-to-day life, such as the avoidance or traumatic reminders (Roche, Kroska, Miller, Kroska, & O'Hara, 2019), or maladaptive coping when distressed (Cook et al., 2017) also present barriers to continuing in treatment.

Cultural Variations in Adverse Childhood Experiences

Race and ethnicity are terms that are often used interchangeably in the social sciences. Although race describes phenotypes and physical characteristics of individuals (i.e.., eye color), and the genotypes that cause them, ethnicity is a cultural construct that is unrelated to one's genetic structure (Kelly & Pathak, 2018). For the purpose of this paper, race and ethnicity will be used interchangeably, as the studies described herein use them in this manner. Gender identity and sexual orientation will also be discussed, as well as the intersection between race/ethnicity and gender, as it relates to adverse childhood experiences. It is important to examine cultural variations in experiences of and responses to childhood adversity, but it is equally critical that the societal injustices and oppressive structures in

place that enable these disproportionalities are held responsible, rather than individuals themselves.

Racial and ethnic variations. Studies note than individuals who identify as Black or Latinx experience more ACEs than White peers (Hunt, Slack, & Berger, 2017). Not only do Black, Latinx, and other non-White ethnic minority populations experience universal adverse childhood experiences, but these populations are uniquely at risk due to marginalization. Historical trauma and racism are adverse experiences that White youth by-and-large do not face (Comas-Díaz, Hall, & Neville, 2019). Further, ethnic minority populations in the United States are more likely than White populations to experience a lower socioeconomic status (Haeny, Arshanapally, Ahuja, Werner, & Bucholz, 2019); low socioecominc stauts individuals are at a greater risk of experiencing sexual and physical abuse, as well as witnessing domestic violence (Voisin, Bird, Hardestry, & Shiu, 2011).

Racism specifically has been implicated as a risk factor for the development of post-traumatic stress disorder (Cheng & Mallinckrodt, 2015; Paradies et al., 2015). In addition to the transmission of intergenerational trauma through parenting practices, people of color may be at higher risk of experience adverse childhood experiences due to systemic inequities. For example, when White individuals could vote or own land, Black individuals were disenfranchised; similarly, people of color have been denied opportunities for upward mobility through discriminatory voting laws, mortgage laws, and the mass incarceration of people of color (Alexander, 2012). Further, in impoverished and marginalized areas, gang violence is more likely to thrive, which increases the chances that youth experience a

traumatic loss, incarceration of a loved one, or juvenile justice system involvement that youth in more privileged neighborhoods are less likely to experience (Connolly & Gordon, 2015).

Revictimization and re-traumatization often occur in juvenile justice facilities, and people of color are more likely to be incarcerated than White peers. Thus, in addition to the experience of being incarcerated being considered a distinct adverse childhood experience, youth of color increase their experiences of adversity during revictimization and re-traumatization while incarcerated that White youth experience at far lesser rates (Spinney, Yeidi, Feyerherm, Cohen, Stephenson, & Thomas, 2016). In addition to being incarcerated at greater rates than they are offered mental health services for comparable crimes (Spinney et al., 2016), even once youth of color do access mental health services, these youth are diagnosed with more stigmatizing and less treatable disorders than White youth (Mizock & Harkins, 2011).

There are distinct racial and ethnic disparities when examining prevalence rates of ACEs. While half of all White individuals report never having had an adverse childhood experience, only 43% of Latinx and 39% of Black individuals report this (Felitti et al., 1998). Studies have found that ethnic minority use experience all adverse childhood experiences at greater raters than White youth (Fagan & Novak, 2018; Mersky & Janczewksi, 2018). Maguire-Jack, Lanier, and Lombardi (2019) found that it took White children, on average, to reach age 10 before experiencing one adverse childhood experience, while it took Black children only one year. Adverse childhood experiences that were similar across ethnicity included parental divorce and low family income (Maguire-Jack et al., 2019).

Gender and sexual orientation variations. In regards to cisgender individuals, some gender differences have been found in the prevalence of ACEs. One recent study conducted a latent profile analysis of ACEs with a large, nationally representative sample of adults in the United States (Haahr-Pedersen et al., 2020), and examined the extent to which gender differences in class membership might occur. Haahr-Pedersen and colleagues estimated separate unconditional LCAs for each gender. While a two-class model was the best-fitting model for the male sample, a four-class model was the best-fitting model in the female sample. Their results suggest that male adults report experiencing fewer ACEs, and accordingly, have less complex ACEs profiles than their female peers. They speculate that this gender difference may be due to the relationship between sexual abuse and re-victimization, or, that it may be due to stigma regarding traumatic experiences in males.

Studies demonstrate that youth who identify as sexual minorities are more likely to be victims of violence than heterosexual youth (Katz-Wise & Hyde, 2012). In addition to homophobia explaining the increased risks of violence in sexual minority youth, sexual minority youth are also more likely than heterosexual peers to experience intimate partner violence and childhood abuse or neglect (Charak, Villarreal, Schmitz, Hirai, & Ford, 2019). Studies reliably show that individuals who identify as bisexual are at the greatest risk of having ACEs (Sterzing, Gartner, Woodford, & Fisher, 2017). Youth who identify as sexual orientation minorities experience sexual abuse in childhood at 3.8 times greater than heterosexual youth (Friedman et al., 2011).

Heterosexual youth have the lowest rates of polyvictimization, followed by homosexual youth, followed by bisexual or somewhat heterosexual youth (Schwab-Reese,

Currie, Mishra, Peek-Asa, 2018). Sexual and gender minority (SGM) youth with ACEs face pronounced psychological dysfunction. High rates of suicidal ideation and attempts are well documented in sexual minority youth (Hottes, Bogaert, Rhodes, Brenna, & Gesink, 2016), with women who identify as a sexual minority being thirteen times more likely to experience suicidal ideation than those who identify as heterosexual (Clements-Nolle, Lensch, Baxa, Gay, Larson, & Yang, 2018).

Intersections of identity. In 1989, Kimberlé Crenshaw described intersectionality as the interactive nature of compounding identities in an individuals' life; scholars further clarify this as the idea that experiences in individuals' life cannot be understand on their own, but rather, as a product of the multiple social roles that people hold (Hankivsky, 2014). As stated previously, race/ethnicity and sexual and gender minority status serve as risk factors for experiencing a greater number of adverse childhood experiences; additionally, these two identities intersecting place individuals at even greater risk. Craig & Keane (2014) found that lesbians of color who had experienced sexual assault at children reported struggling with mental health challenges at a rate of seven times more often than lesbians who did not have this adverse experience.

Existing Research Using Latent Class Analysis to Examine Adverse Childhood Experiences

A number of articles have called for person-centered, rather than variable-centered, approaches to examining latent class analyses as researchers are increasingly noting a need to understand profiles of ACEs that may occur, and outcomes related to the unique intersection of certain ACEs. Within the last few years, the number of latent class analyses on adverse

childhood experiences has grown. O'Donnell et al. (2017) conducted a sweeping, systematic review of the existing studies which employ latent class analyses to explore ACEs. O'Donnell et al. (2017) note that of 17 studies, nearly all studies include some type of ordered class (i.e., low, medium, high). O'Donnell et al. (2017) additionally note that within these ordered classes, some studies find significant differences in outcomes based upon the configuration and constellation of the items within the classes, indicating a threshold effect (Felix, Binmoeller, Nylund-Gibson, Benight, Benner, & Terzieva, 2019).

As a result, this study is considered largely exploratory, as there is no definitive evidence of cumulative-only or interactional-only classes existing. Additionally, most of the studies included in this meta-analysis, and my own literature review, largely utilize non-Latinx samples. The present study employs a sample of Latinx-only youth, increasing the exploratory nature of the present dissertation. The following is not an extensive, all-encompassing review of all literature, but a selection of recent publications of relevance to the present dissertation.

Wolff, Cuevas, Intravia, Baglivio, and Epps (2018) conducted a latent class analysis utilizing a sample of nearly 100,000 justice-involved adolescents (aged 10-18) from Florida. The study is ethnically diverse and matches the demographics at many community mental health agencies, with 46.8% of the sample identify as Black and 15.9% of the sample identifying as Latinx. In their study, Wolff et al. (2018) identified five clusters of ACEs: high adversity, low adversity, moderate adversity: emotional abuse, moderate adversity: physical and sexual abuse, and moderate adversity: household substance abuse and incarceration. These constellations of ACEs indicate that there are distinct groups of individuals who

cluster together as a result of the amount of ACEs that they have, in line with the cumulative risk framework, and also that individuals may cluster together as a result of the type of ACEs that they experience in conjunction with one another, in line with an interactive framework. Wolff et al. (2018) emphasize the importance of an interactive framework when examining ACEs, reporting that: "an ACE score of four is far more deleterious to health and behavioral outcomes than a score of one. Practically, in terms of policy and service delivery, knowing which four ACEs an individual has been exposed is important for tailored service delivery."

Roos, Afifi, Martin, Pietrzak, Tsai, & Sareen (2016) ran a latent class analysis on 34,653 individuals utilizing data from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC). Similar to Wolff et al. (2019), Roos and colleagues (2016) found that five classes of adverse childhood experiences emerged: low adversity, caregiver substance use, maltreatment acts of omission, physical and emotional maltreatment, severe cross-subtype maltreatment and caregiver substance use, and caregiver maladjustment. This study also provides support for the idea that there are meaningful subgroups and heterogeneity among childhood trauma survivors. Roos et al. (2016) also attempt to determine the extent to which these classes are meaningfully predictive of harmful outcomes. When utilizing the low adversity group as a control group, individuals in the following classes were more likely to experience incarceration: caregiver substance use, maltreatment acts of omission, physical and emotional maltreatment, severe cross-subtype maltreatment and caregiver substance use. Thus, this suggests that at least criminal justice outcomes may be dependent upon the interaction between adverse childhood experiences, rather than the accumulation of ACEs, highlighting the importance of further examinations of clusters and

constellations of traumatic experiences in childhood. The authors describe a need to include a broader range of adverse childhood experiences to increase the predictive validity of the ACEs.

Similarly, utilizing a subsample of veteran data from the National Epidemiological Survey on Alcohol and Related Conditions-III ((NESARC-III), Ross, Waterhouse-Bradley, Contractor, & Armour (2018) studied 3,119 veterans retrospectively recalling adverse childhood experiences. Ross and colleagues (2018) identified four distinct latent classes: low adversities, moderate maltreatment with high household substance use, severe maltreatment with moderate household dysfunction, and severe multi-type adversities. As with the civilian population for the NESARC that Roos and colleageus (2016) utilized, Ross and colleagues (2018) found that all classes were significantly more likely to predict incarceration than the low adversity class.

In a study of juvenile offenders, Logan-Greene, Kim, & Nurius (2016) suggested that if there are distinct classes of individuals experiencing specific clusters of ACEs, that this information would necessitate the need for tailored treatment approaches, a hypothesis in line with this dissertation. A latent class analysis was conducted utilizing a sample of 5,378 youth on probation, and a six-class model was generated. Within their sample, Logan-Greene et al. (2016) found the following distinct subgroups: low all, parental substance use and incarceration, poverty and parental health problems, high family conflict and socioeconomic status, high maltreatment, and high all. The authors also found significant racial and ethnic differences between prevalence of adverse childhood experiences in their justice-involved sample. Similarly,

Schneider et al. (2017) utilized a sample of 254 Texan adults, and found that four unique subgroups emerged: minimal childhood abuse, physical/verbal abuse of both child and mother with household alcohol abuse, verbal and physical abuse of child with household mental illness, and verbal abuse only. As with Roos et al. (2016), Schneider et al. (2017) discovered that class membership could significantly predict mental health outcomes in adulthood, and that there were significant between-class differences. Individuals who belonged to the "physical/verbal abuse of both child and mother with household alcohol abuse" class had distinctly worse mental health outcomes, experiencing greater rates of anxiety and depression.

In an ethnically diverse sample of 2,637 undergraduate students (46.3% Asian, 28.3% Latinx, 16.4% White, 5.9% Black, 3.1% multiracial), Berzenski and Yates (2011) found similar results to studies listed above. Berzenski and Yates (2011) identified latent classes, and were also able to identify that the combination of experiences within the classes differentially predicted type of symptom development (internalizing vs. externalizing). In a sub-sample of college students who endorsed multiple experiences of maltreatment, similar to youth presenting at community mental health clinics, Berzenski et al. (2011) found four latent classes: violent home, hostile home, harsh parenting, and sexual abuse.

After establishing latent classes, Berzenski et al. (2011) ran univariate analyses of variance were run, and emotional abuse was most strongly related to anxiety and depression (internalizing symptoms), while physical and emotional abuse combined were most strongly related to substance use and risky sexual behaviors (externalizing symptoms). Supporting an interactive model that emphasizes the importance of examining constellations and clusters of

adverse experiences, classes in which emotional abuse existed, including harsh parenting and a hostile home environment, were more strongly related to anxiety and depression than classes that contained a greater number of adverse experiences that did not include emotional abuse. This heterogeneity of post-trauma symptoms depending upon the unique constellation of adverse childhood experiences provides support for the need to look not just at symptoms, but at the trauma events that precede them. Further, it is of interest to look at trauma events preceding symptoms as avoidant youth may not reach clinical levels on survey instruments, despite having clinical levels of dysfunction and impairment.

In another secondary analysis of data from a national dataset, Brown, Rienks, McCrae, & Watamura (2017) ran a latent class anlysis with 5,870 youth from the National Survey of Child and Adolescent Well-Being II. Unique to this study, Brown et al. (2017) ran separate analyses differentiating between developmental periods, looking separately at adverse experiences in infants, pre-school children, school aged children, and adolescents. The racial and ethnic identification of participants varied depending upon developmental age, but the sample was reasonably ethnically diverse, with non-White participants making up 70% of infants (Latinx, Black, and multiracial or another race), 60% of preschool children, 61% of school-aged children, and 60% of adolescents.

Three latent classes emerged for infants, pre-school children, and adolescents, and a 4-class solution was the best fit among school aged children. Infant classes are as follows: physical neglect/emotional abuse/caregiver treated violently, physical neglect/household dysfunction, caregiver divorce. Pre-school children exhibit the first two classes, but instead of caregiver divorce, the most meaningful third class is emotional abuse. Adolescent latent

classes are as follows: physical neglect/emotional abuse/caregiver treated violently, physical neglect/household dysfunction, and emotional abuse. Thus, infants and pre-school children share two classes, and pre-school children and adolescents share one class. Adverse experiences of school-aged children cluster into four classes: physical neglect/emotional neglect/emotional abuse/caregiver treated violently, physical neglect/household dysfunction, emotional abuse, and emotional abuse/caregiver divorce.

It is interesting to note that emotional abuse is the only adverse experience that sometimes occurs without other experiences. There are meaningful clusters of classes in the sample, and the classes are somewhat stable, but do change slightly across developmental stages. Thus, the present study will utilize and make claims regarding only one age group, adolescents. Unlike some of the previously mentioned studies, Brown et al. (2017) do not run analyses to predict outcomes based upon class membership.

In a sample of mostly White (87%) pre-school aged foster youth from the Pacific Northwest (n=117), four profiles emerged: supervisory neglect/emotional maltreatment, sexual abuse/emotional maltreatment/supervisory and physical neglect, physical abuse/emotional maltreatment/neglect, and sexual abuse/physical abuse/emotional maltreatment/neglect. The last class consisted of youth who had every type of maltreatment at high levels. Again, an interactive explanation in addition to a cumulative explanation of dysfunction emerges, as youth who had physical and/or sexual abuse in their classes had higher internalizing symptoms than youth who did not experience this type of abuse.

In a study of 30,668 adolescents (aged 12-17) from the 2011–2012 National Survey of Children's Health, Liu, Kia-Keating, and Nylund-Gibson (2018) examined racial and

ethnic differences in latent classes of adverse childhood experiences. In a sample of 12.3% Latinx participants, 10.4% Black participants, and 77.3% White participants, Liu and colleagues (2018) were able to identify distinct latent classes and demonstrated that these classes varied based upon race and ethnicity. Interestingly, compared to studies mentioned previously, this study did not find that the classes clustered together by typologies, but by cumulative experiences, with low, medium, and high classes. This study seeks to build upon Liu et al. (2018)'s work by continuing to examine racial and ethnic disparities in adverse childhood experiences and how they may influence mental health outcomes.

Finally, utilizing Longitudinal Studies on Child Abuse and Neglect (LONGSCAN) data, O'Hara, Legano, Homel, Walker-Descartes, Rojas, and Laraque (2015) provide strong evidence for the importance of examining interactive approaches to adverse experiences. Multiple linear regressions were run as opposed to latent class analyses, but this article is included in the present literature as it demonstrates how different clusters of adverse experiences may predict deleterious outcomes differentially. In a sample of 271 neglected children and 101 children who had experienced abuse *and* neglect, children who had experienced abuse *and* neglect actually performed better on a test of cognitive functioning related to language. It is proposed that the abuse, even though negative, served as environmental stimulation, thus suggesting that the interaction between experiences is more predictive of future dysfunction than the cumulative sum.

Therefore, although the cumulative sum provides critical information on the amount of adversity a youth has experienced, and can reliably predict physical and mental health outcomes, it appears to be of importance as well to understand how experiences may work

together to differentially influence youth. In the developmental trauma disorder framework, it is hypothesized that youth who have experienced interpersonal trauma and disrupted attachment may fare worse than youth who have experienced more trauma that is not interpersonal in nature.

Future Directions in ACEs Research

A Google Scholar search demonstrates that approximately 3,730 results arise when searching for "adverse childhood experiences" in the ten years immediately following Felitti et al.'s 1998 pioneering study on adverse childhood experiences (ACEs). As the deleterious effects of ACEs obtain more visibility, interest in ACEs grows exponentially. Although a Google Scholar search yields 3,730 results for "adverse childhood experiences" from 1998 – 2008, it generates 18,000 results for the same search term in the ten-year period of 2008 – 2018, representing a marked increase in the relevance of ACEs. Data from the presentation dissertation was collected in California, a state with Gavin Newsom as a newly-elected governor. In 2019, he revealed his first budget proposal, which over $100 million dollars is specifically allocated to screen adverse childhood experiences in Californian youth. Other states have already begun this process or are following suit (Bethell et al., 2017), and with recent legislation encouraging trauma-informed care and the mandatory screening of ACEs, more children will be referred to already impacted community mental health agencies.

It is vital that future directions in work with ACEs center marginalized and vulnerable populations. Although adverse childhood experiences are universal and unfortunately all-too-common, a majority of studies, even studies that claim to utilize an ethnically diverse sample, consist of over a 50% sample of White individuals. As the ethnic makeup of children in the

United States, and certainly California, is overwhelmingly becoming majority non-White (Colby & Ortman, 2017), it is critical to conduct research with participants that reflect modern demographic truths. As non-White youth are impacted by adverse childhood experiences as frequently, if not more, than White youth, multiple researchers have proposed a call for more research on ACEs in under-researched and vulnerable racial and ethnic minority populations (Baglivio & Epps, 2016), which this dissertation accomplished through a sample of 137 Latinx youth.

Additionally, many researchers suggest that future studies include new and possibly more relevant adverse childhood experiences that have been identified (Cronholm et al., 2015; Mersky, Janczewski, & Topitzes, 2017), and that they examine the influence of adverse experiences on outcomes from an interactive framework (Lanier, Maguire-Jack, Lombardi, Frey, & Rose, 2018). This dissertation seeks to fill the aforementioned gaps in the literature by using an extended measure of adverse childhood experiences, in a Latinx sample of youth seeking services at a community mental health agency.

Chapter Three: Methods

While introducing best practices for and pitfalls of community-based research methods, Cochran et al. (2008) relay a Native Alaskan saying: "Researchers are like mosquitoes; they suck your blood and leave." The very first ethical principle in the American Psychological Association's (APA) *Ethical Principles of Psychologists and Code of Conduct* is beneficence and nonmaleficence, in other words, to not only do no harm, but also, to do good (APA, 2002). While conducting a dissertation within marginalized communities who have experienced extensive trauma in many forms, it is impossible to ignore the power differential that exists between the researcher and the researched. The researcher must be acutely attuned to the potential for exploitation in these communities, and the fact that the traditional and typical research process may be re-traumatizing for those who work at and who seek services at community agencies. In addition to the potential for feelings of exploitation, feelings of abandonment may also arise. Drahota et al. define a *community-academic partnership* in the following way:

> Community-academic partnerships (CAPs) are characterized by equitable control, a cause(s) that is primarily relevant to the community of interest, and specific aims to achieve a goal(s), and involves community members (representatives or agencies) that have knowledge of the cause, as well as academic researchers (2016).

This dissertation employs a *community-academic partnership*, as defined by Drahota et al. (2016). While conducting this dissertation, I desired to engage in community-based research, but had to be particularly mindful about the influence my presence would have on the community that I am partnering with. The clients seeking services at the present

community mental health agency are among the most vulnerable: the clients are children and teens who have experienced at least one form (but often multiple) of trauma, whose families are often extremely low-income, monolingual Spanish-speakers, and/or undocumented. As a tenure-track or tenured professor, researchers have the privilege of firmly planting and rooting themselves in a community and can use this privilege to partner with community agencies and see long-term systemic changes.

As a doctoral student, knowing that my time remaining at the current institution is limited, carrying out any research in which I interacted with the children and teens seeking services, or collaborated on a large-scale intervention project, felt unethical. However, I am similarly dissatisfied and uncomfortable with traditional models of research, in which data are collected, analyzed, published, and disseminated only to colleagues, within academia, in an ivory tower. Often, individuals working at community agencies do not have any access to academic publications. In the situations in which they do, the research is often: (1) inaccessible due to excessive jargon, (2) irrelevant as the agency was not involved in the research-building process, and (3) infeasible as the suggestions researchers make based upon their research are difficult to apply in "real-world" practice. Thus, I believe that conducting this research through a community-academic partnership would benefit the agency most.

After considering several research paradigms, the community-academic partnership is most beneficial in the present circumstance as it avoids a common pitfall of community-based research, in which stakeholders often feel burdened or overworked by additional tasks required (Pellecchia et al., 2018), while at the same time allowing the community partner to

have an active involvement in every step of the research process (i.e., before (formation), during (execution), and after (stabilization)).

Philosophy of Science and Research Orientation: Community-academic Partnership

Within the last ten years, researchers have attempted to create operational definitions, principles, and guidelines to better standardize community-based research efforts. In 2012, Brookman-Frazee and colleagues synthesized the work of other scholars in community-based research (i.e., "Butterfoss & Kegler, 2002; Huxham and Hibbert, 2008; Weiss, Anderson, & Lasker, 2002") to create an explicit, linear model, of guidelines (Figure 1) to aid those collaborating on research within research-community partnerships (referred to herein as community-academic partnerships). Brookman-Frazee et al.'s (2012) proposed model of community-academic partnerships outlines the community-academic partnership as the following phase-based procedure: (1) formation and initiation, in which interpersonal and operational processes are defined and discussed, (2) execution of activities, in which proximal outcomes are obtained, and (3) the institutionalization/stability stage, in which distal outcomes are discussed.

This model of community-academic partnership has successfully been used to guide studies regarding services for children's mental health in community-based settings (Brookman-Frazee et al., 2012; Brookman-Frazee, Stahmer, Stadnick, Chlewbowski, Herschell, & Garland, 2016). Although Brookman-Frazee and colleagues employ the community-academic partnership model to conduct, implement, and evaluate evidence-based interventions, they note it is also a suitable model for projects that aim to enhance communication between practitioners and researchers, and/or improve agency services. Thus,

the present study is organized using the community-academic partnership model proposed by Brookman-Frazee et al. (2012), and further supported by a systematic review carried out by Drahota et al. (2016).

Formation. During the first phase, formation, a relationship between the community and the academic institution is formed. In the present dissertation, the community was a local community mental health agency serving predominantly low-income and ethnic minority youth and families who had experienced trauma. During this phase, the community partners and the researchers focused on interpersonal processes (i.e., building relationships, establishing communication, and improving the quality of relationship) and operational processes (i.e., logistics of carrying out the study, time of study, and labor commitment of community and academic staff).

Interpersonal processes. Informally, the formation stage for the present study began in July 2016 when I was hired by the agency for a year-long placement as an assessment specialist. At the agency, upon intake, clinicians administer assessments to clients, and submit these assessments to be scored. After they are scored, the scores are uploaded into a computer. The assessment specialist then reviews scores on a number of assessments regarding mental health symptoms and functioning, and constructs treatment recommendations tailored for each client, based upon their scores. These are then electronically sent to clinicians to guide and inform treatment. Due to understaffing (as most non-profit agencies must be) and a high volume of clients, many intake assessments are delayed in being scanned, entered, and do not reach an assessment specialist for several

weeks. Then, as the assessment specialist, it typically takes several hours to compile a useful list of treatment recommendations to send to the therapist.

Later, in July 2018, I was hired by the agency for a year-long placement as a psychological assistant, providing therapy. As a result of my intimate participation within this community both as an administrative staff member, and also as a treating clinician, I am fortunate in that I have experienced first-hand the frustrations that clinicians working in agencies with limited resources face when trying to employ evidence-based practices suggested by academics. As a provider, I would have loved to have tailored engagement and treatment recommendations available to me immediately following intake to help guide treatment planning. However, as the system currently stands, it is likely that a provider would conduct an assessment, create a treatment plan, have the minor and parents assent and consent to the treatment plan, and have conducted 1-2 therapy sessions before receiving these recommendations.

During the formation stage, I became interested in ways that information gathered from intake assessments might be more immediately and practically useful for providers within the agency, in order to better serve the clients, particularly given that this specific population experiences high attrition from treatment. Further, as an active member of the agency, I also began to observe a pattern among my clients. First, all of my clients, and the parents of my clients, had experienced multiple ACEs. Secondly, clients' subsequent symptoms were not limited to just one disorder, but fell across a broad array of disorders (most frequently trauma- and stressor-related disorders paired with substance-related disorders and/or disruptive, impulse-control, and conduct disorders). Finally, clients'

symptoms generally manifested in ways that reflect the content of their trauma. For example, when working with a client who had experienced sexual assault, their symptoms appeared to be related not just to the fact that a trauma occurred, but due to the *nature* of the trauma. The client was engaging in self-harm and risky sex with adults, which may have been a then-adaptive coping strategy related to having been assaulted. This client was immediately forthcoming in therapy and appeared to be completely disinhibited in forming relationships with adults. Meanwhile, another client that I worked with had abruptly been removed from their caregiver's home. Possibly as a result, and again, a then-adaptive coping strategy, the client exhibited difficulty trusting adults and did not meet with me alone for approximately six sessions. Although these clients both experienced a number of ACEs, the ways in which they "showed up" in the room varied dramatically, possibly explained by the content or configuration of the trauma.

Attention to power, race, and other interpersonal dynamics. Although supervisory staff (licensed psychologist with Ph.D. also operating as the Continuous Quality Improvement (CQI) Manager for evaluations) and a clinician within the agency (myself) were involved in creating the research question and collaborated on proposed analyses, a limitation to the present study is that consumers of services themselves were not involved in designing or carrying out this project. One limitation of this study is that the perspectives of participants are only heard through pre-administered, self-report survey measures. Ideally, the clients at the agency themselves would be involved in the research planning (e.g., determining research questions, design, variables) process, executing (e.g., participating in focus groups or interviews), and analysis/dissemination of the project. Due to time

constraints, financial constraints, and potential ethical dilemmas, pre-collected data was used. Further, although studies suggest that survivors of childhood trauma find participating in research about trauma to be rewarding and beneficial (Waechter, Kumanayaka, Angus-Yamada, Wekerle, & Smith, 2019), ethical risks regarding currently-treated youth participating in a research study at their own clinic include: possible feelings of coercion due to loyalty or appreciation of clinician and agency, confidentiality of participant data due to mandated reporting laws, and possible interference in the therapeutic process or within the therapeutic relationship.

Finally, attention to race cannot be ignored in the present study. Both the CQI manager and I are White women who do not speak Spanish. Further, the CQI manager holds a doctoral degree and I am a doctoral candidate. The youth and families receiving services at this agency reflect the ethnic makeup of California's youth, and thus, predominantly identify as Latinx. As a result, although the community agency played an active and collaborative role throughout the research process of this dissertation, outside of self-report surveys, the perspectives of those being served are overlooked.

Operational Processes. Operational processes are also determined during the formation period, which relate to: coming to a consensus about research questions and variables, how often meetings between the community agency and university will occur, how data will be collected and analyzed, and plans for dissemination of information within the community agency after the analyses have been completed.

As both a researcher and a clinician, I became interested in ACEs, how constellations of ACEs come together, and if these constellations may influence or drive clients' symptoms.

I also became interested in ways to aid the agency in gathering meaningful assessment data quickly. The Senior Manager of Continuous Quality Improvement (CQI) at the agency and myself initially met to discuss the possibility of carrying out a research project within the agency. During the meeting, I expressed my interest in doing research with pre-collected CALM data, described my research question and variables of interest, and inquired about the appropriateness and feasibility of the study I would like to conduct. Additionally, I made it clear that I hoped this could be beneficial to the agency, and requested feedback on research design, variables used, and analyses, that the CQI Manager may find most useful. The CQI Manager expressed enthusiasm for the content of the project and reported that the research design and proposed analyses were appropriate. The CQI Manager did indicate that she was interested in seeing if demographic variables and ACEs prevalence rates differed between the three geographic locations of the agency, and as a result, these analyses were prioritized in the study. The CQI Manager also requested that upon completion of the project, presentations be given to staff (i.e., clinicians of varying licensure status) to increase knowledge transfer.

Execution. Per Brookman-Frazee et al.'s model, as a result of the relationships and processes occurring during the formation phase, an execution phase may begin. During the execution phase, proposed proximal outcomes discussed in the formation phase are created and delivered, and these outcomes lead to distal, more long-standing outcomes that occur in the stabilization phase. During the execution stage, a synergy of partners is developed, knowledge exchange occurs, and tangible products are created. Community-academic partnerships seek to create long-standing partnerships between academic institutions and

communities to co-conduct research that is directly relevant to the needs of community agencies and communities, with the hope that the research itself may act as an intervention. The present dissertation utilizes research questions and methods that are co-created by the university institution and a local, non-profit, community mental health agency in Southern California that, every year, serves nearly two-thousand unique trauma-impacted clients. In addition to my own academic interest in understanding the heterogeneity of trauma and disseminating this information, this dissertation also seeks to aid the agency in improving services for their particularly vulnerable population of youth and families.

Partnership synergy. This outcome is realized through the relationship and collaboration between community agency and researcher and has been described as a "rich feedback loop between practitioners and researchers." This synergy helps ensure that the direction of the research continuously benefits the community agency. Partnership synergy was maintained through in-person and e-mail check-ins with the CQI manager throughout the beginning of the project in 2018 and continuing into September 2019. It is anticipated that in-person and e-mail check-ins regarding the status of the project will continue for the duration of the dissertation, when suggested by either the community agency contact or myself. A long-standing relationship with the community mental health agency had previously been formed between the university and the agency as a result of prior research collaborations and placements of university doctoral students as clinicians. Thus, an enthusiasm and mutually beneficial relationship already existed in the community-academic partnership, and was further strengthened by ongoing, open, and collaborative communication as the dissertation progressed.

Knowledge Exchange. Researchers are often not privy to the reality of providers they seek to inform. Thus, even well-meaning researchers struggle to understand the barriers that community agencies face when attempting to deliver services. During the execution phase, reciprocally beneficial knowledge is gained as researchers learn from the community agency, and the community agency learns from the researchers. Although it does present the issue of a dual relationship, being a clinician within this agency significantly improved my ability to understand agency resources, policies, staffing, and services, and allowed me to ask better research questions. Similarly, the agency benefits from this transfer of knowledge, as the findings that this study produces can be used for obtaining funding for services or improving service delivery. Further, a data analyst is typically a dedicated, paid position, so the community agency benefits from obtaining this knowledge for free, allowing their limited and critical resources to be allocated elsewhere, while still receiving a data analyst's services.

Tangible Products. Tangible products include materials for a research audience and a community audience. Many studies of adverse childhood experiences rely on large, national datasets, like the Longitudinal Studies of Child Abuse and Neglect (LONGSCAN) study from the National Data Archive on Child Abuse and Neglect, National Child Traumatic Stress Network Core Data Set, The National Comorbidity Survey, National Survey of Children's Health, or National Survey of Child and Adolescent Well-Being (NSCAW), among others. There is strength in utilizing positivist paradigms and large, national datasets to establish the existence and importance of phenomena, and that constructs are widespread trends, worthy of study. However, once established, the findings from these studies may not

be advantageous to practitioners and clients in naturalistic, real-world environments, in which people work with unique individuals on an idiographic level.

Data was collected from a community mental health agency in Southern California in order to specifically create tangible products the agency would find beneficial. The agency has been providing services to trauma-impacted youth and families for fifty years and continues to utilize research findings to submit grants to obtain funding. I partnered with this agency to ensure that participating in the present study would be advantageous for them. The agency was interested in learning how to better target treatment to youth with varying traumatic experiences and symptom presentations, as well as examining differences in prevalence rates of trauma and treatment outcomes across their different locations. The anticipated tangible products for a research audience include a manuscript and a dissertation. The anticipated tangible products for a community audience include in-person presentations of findings for agency staff and a brief technical report for clinician use at the agency.

Stabilization. As a result of the relationship-building occurring during the formation phase and the partnership synergy, knowledge exchange, and tangible products during the execution phase, the project ends in a stabilization phase. The stabilization phase consists of improving "system capacity" and delivery of services and sustaining the collaborative relationship.

Improved system capacity. An "improved system capacity" refers to improvements in the quality of services being delivered within the agency. Ideally, this would occur as a result of the findings of the proposed latent class analysis and latent regression analysis. If configurations of ACEs exist, and these differentially impact the symptoms that clients

present with upon intake, clinicians can immediately have a data-driven way to tailor treatment plans and interventions without waiting for lengthy assessments to be scanned, scored, interpreted, and returned to them. It is anticipated that this increased efficiency and accuracy would have a more distal outcome of improving client engagement and reducing treatment drop-out, but due to limitations in collecting client data, this information is not currently being monitored.

Sustaining the collaborative relationship. The collaborative relationship between the community agency and the academic institution is sustained through tangible products. The relationship that I have with this agency will continue when this study is finished, as I have committed to presenting the findings to clinicians and creating a brief manual with recommendations that agency staff, or even the youth and families seeking services, may find useful. Over the last three years, the community agency and I have nurtured a trusting relationship, and it is anticipated that this agency will continue partnering with the university due to clinical practicum placements, and further community-academic partnerships.

Participants

Participants consisted of youth at a non-profit community mental health center in Southern California seeking services for symptoms appearing post-traumatic incident. Eight rural and urban cities in a Southern Californian county are served by this community agency. Among those living in the county, 20% are born outside of the United States, 33% speak a language other than English inside the home, and 67% of youth identify as Latinx (U.S. Census Bureau, 2010a; U.S. Census Bureau 2010b; U.S. Census Bureau 2010c). Common forms of abuse experienced in this population include caregiver incapacitation (4% of Child

Welfare Services [CWS] referrals), sexual abuse (7.8%), emotional abuse (12.3%), physical abuse (21.1%), and neglect (52.1%; U.S. Census Bureau, 2010a).

At the agency, in 2018, 77% of families were Latinx, 20% were White, and 3% identified as another race or ethnicity. Based on this data, it is predicted that the majority of the sample will identify as Latinx, experience low socioeconomic status, and have experienced neglect and/or physical abuse. The agency began purposively collecting data of interest for process and outcome evaluations, as well as research, in 2014. Assessments completed from 2016 – 2018 were utilized in the present study. Data is continuously collected as new client intakes are conducted.

The total sample consists of 1,601 clients, aged 0 (i.e., infants) to 71, with an average age of approximately ten years old. A majority of the sample is Latinx (70.3%), followed by "Anglo" (21.4%), and multiracial (4.7%). The remaining 3.6% of the sample consists of individuals who are African American (2%), Chinese (0.2%), Filipinx (0.3%), Mixteco (0.4%), Native American/Alaska Native (0.3%), Pacific Islander/Native Hawaiian (0.1%), or an other Asian ethnicity (0.1%). The sample is nearly evenly split between individuals identifying as male (49%) and individuals identifying as female (50.8%), and one individual identifying as "intersex." ACEs scores ranged from 0-18 (of 20), with an average of each client experiencing approximately 4 ACEs. The most common ACEs in the overall sample included: divorce (55.6%), living with a family member with substance abuse (43.2%), witnessing domestic violence (32.5%), living with a family member with mental illness (31.6%), and having a family member incarcerated (27.6%).

As the sample was predominantly Latinx, and there is a dearth of research examining ACEs in ethnic minority communities, the sample was reduced to include only Latinx clients. Reducing the sample to include only Latinx families also strengthens the study, as it controls for the influence of variance between ethnicities on results. The sample was further reduced to include only clients aged 12-17 (i.e., adolescents) to control for variance that may be explained by lifespan development. Youth were administered either the Youth Self Report (Achenbach & Rescorla, 2001) or the Child Behavior Checklist (Achenbach & Rescorla, 2001), identical measures, with the youth being the respondent on the YSR and the parent being the respondent on the CBCL. In order to increase confidence of findings, for greater consistency within the sample, only youth who filled out the YSR were retained.

The final sample utilized in this dissertation consists of 167 Latinx youth, who completed the YSR, aged 12-17, with an average age of approximately 14. The sample consists of a greater number of female individuals (65.7%) than male individuals (34.3%), and no individuals identified as intersex. Over half of the sample (67.9%) speak English as their primary language in the home, while 32.1% primarily speak Spanish in the home. The majority of participants lived in a single-parent household with a biological parent (47.4%), followed by a two-parent household with both biological parents (26.3%). Approximately 5% of the sample lived in foster care with unrelated caregivers, and 15.3% of the sample had no contact with one or both of their biological parents. The majority of participants were in tenth grade (24.8%), followed by eleventh grade (19.7%), eighth grade (16.8%), and ninth grade (14.6%). A non-trivial proportion of the sample reported utilizing an IEP at school (16.8%).

ACEs differed dramatically between the overall sample, and the reduced, adolescent, Latinx sample (see Table 2). As in the overall sample, divorce (60.6%), witnessing domestic violence (43.1%), and living with a family member with substance abuse problems (43.1%) were commonly endorsed; however, these ACEs occur more frequently in the Latinx sample than the overall sample. Prevalence rates of ACEs indicated that Latinx youth endorse meaningfully different ACEs occurring at far greater rates than in the overall sample of clients. Strikingly, 32.1% of the Latinx adolescents in this sample endorse having experienced bullying, 30.7% report experiencing community violence, 40.1% report experiencing emotional abuse, and 26.3% report experiencing sexual abuse. Meanwhile, in the overall sample, 15.7% of individuals endorsed experiencing bullying, community violence (11.6%), emotional neglect (17.6%), and sexual abuse (11.9%). California and other states continue to employ ACEs as a screening tool, Latinx individuals are the largest growing ethnic group in the United States, particularly in California, and the majority of studies conducted on ACEs are with predominantly White samples. The differences noted in the overall sample and Latinx sample provide evidence of the need for the present study.

Materials

Variables were collected via client self-report and clinician report. The agency employs many socioemotional assessment tools upon intake and at approximately six-month intervals. I utilized an agency-created demographic questionnaire, the Center for Youth Wellness ACE-Questionnaire (CYW ACE-Q Teen; Burke Harris & Renschler, 2015), and the Youth Self Report (Achenbach & Rescorla, 2001). Administered surveys were in paper-and-pencil format and offered to participants in both English and Spanish. Paper-and-pencil

surveys are then scanned into a clinical documentation system for clinical use and entered into a computer for analysis. Materials can be found in Appendix A-C.

Demographic questionnaire. The demographic questionnaire was completed by pre-admission intake interviewers who spoke with parents over the phone or in person. Pre-admission intake interviewers are master's-level clinicians. I did not have access to the full form, as it contained identifying information. De-identified information regarding ethnicity, abuse exposure, child abuse reports, referral information, family composition, custody disputes, gender, language, disability, and other demographic characteristics were collected. The demographic questionnaire can be found in Appendix B.

Center for Youth Wellness ACE-Questionnaire (CYW ACE-Q Teen). The Center for Youth Wellness Adverse Childhood Experiences Questionnaire (Burke Harris & Renschler, 2015) originated from the original Felitti et al. (1998) items utilized for the Centers for Disease Control and Prevention Study. The CYW ACE-Q can be administered to youth between the ages of zero and nineteen, and the teen version for ages thirteen to nineteen. A self-report and parent-report version exist. CYW ACE-Q Teen is offered in English and Spanish and consists of nineteen items. The community agency adapted the CYW ACE-Q for internal use slightly, as an item inquiring about prenatal exposure to substances was added.

Ten original ACEs items assessing emotional abuse, physical abuse, sexual abuse, domestic violence, household substance abuse, household mental illness, parental separation or divorce, household incarceration, emotional neglect, and physical neglect are included. Additional items include questions about personal experience of intimate partner violence,

involvement in the juvenile justice system or foster care system, peer victimization, death of a caregiver, separation due to migration or deportation, trauma from medical illness or injury, discrimination (religious, ability status, nationality, race, sexual orientation), and community violence. Additional items were suggested by stakeholder community members as well as members of the academic community, and have been utilized in a number of studies (Finkelhor, Shattuck, Turner, & Hamby, 2015; Liu, Kia-Keating, & Nylund-Gibson, 2018; Pachter, Lieberman, Bloom, & Fein, 2017). The present dissertation contributes to the literature, as psychometric properties of the original ACEs survey, as well as the CYW ACE-Q, for use with a Latinx, adolescent population, are provided.

Participants were instructed to "check if [they] have experienced any of the following at any point." Thus, trauma experiences were collected in both cumulative and interactional forms, as an aggregated score could be derived, as well as offering information on the item-level. Item-level responses were coded as a "0" for the absence of a check, and a "1" for a check. Sample items include the following: "You have often been treated badly because of race, sexual orientation, place of birth, disability or religion" and "your child lived with a household member who was depressed, mentally ill or attempted suicide". Additional ACEs items result in a 20-item survey. The CYW ACE-Q Teen and CYW ACE-Q Teen SR employed at the community agency and used for the present dissertation can be found in Appendix C.

In the present sample of Latinx youth aged 12-17, the Cronbach's alpha for the original ACEs items is 0.69, an acceptable number. The Cronbach's alpha for the additional ACEs, without the original ACEs, is .42. The Cronbach's alpha for the overall ACEs scale

(i.e., 20 items from the community agency's questionnaire, including both the original items and additional items) is .69.

Youth Self Report (YSR). Behaviors and symptoms were assessed utilizing Achenbach and Rescorla's (2001) Youth Self Report measure, a self-report measure that can be administered to youth ages 11-18. The Youth Self Report consists of 112 items which gather information regarding both internalizing and externalizing symptoms and is administered directly to youth. The scale generates information regarding endorsement of eight categories of symptoms which link to DSM-IV (APA, 1994) diagnostic criteria. Response choices are on a 3-point Likert scale: '0' (not true), '1' (somewhat or sometimes true), '2' (very true or often). The Youth Self Report has been translated into ten languages, has strong test-retest reliability and internal consistency, and demonstrates validity across both clinical and nonclinical samples (National Child Traumatic Stress Network, 2017). Ivanova et al. (2007) found adequate psychometric properties for the YSR structure across 23 different cultures and two genders. The National Child Traumatic Stress Network cite an average test-retest reliability of .79, and an average internal consistency of .83.

Clients at the community mental health agency complete the Youth Self-Report before or during intake and at six-month intervals. Sample questions include: "I am too dependent on others" and "I would rather be alone than with others". In the present study, Cronbach's alpha coefficients for the Youth Self-Report could not be generated, as the dataset only includes T-scores for subscales, not individual, item-level responses.

Procedure

Procedures regarding collaborating with the community agency are described in detail above. I met with the CQI manager at the community mental health agency to determine relevant research questions and utilized pre-existing data that the agency collected from 2016 – 2018 from youth and families receiving services for symptoms following one or more traumatic incidents. Staff at the community mental health agency entered data into a database, and de-identified the information. The community partner in this project collects data from clients for research but lacks the resources for staff to conduct in-depth analyses of interest. Thus, I collaborated with agency staff to determine variables of interest to both the academy and the community agency. The community agency then gave me the present de-identified dataset with information regarding 1,601 clients. Consent for assessment data to be used in outcome evaluations and research studies is collected as clients consent to treatment; clients are informed that it is not mandatory to consent to data collection in order to receive services. Incentives are not offered for participation in research.

Statistical analyses. To examine whether distinct typologies of trauma experiences exist in a diverse sample of adolescents, and whether or not these typologies can predict treatment outcomes or symptom manifestation, a 3-step maximum-likelihood latent class analysis (Vermunt, 2010) was run utilizing Mplus version 7.0 (Muthén & Muthén, 1998 – 2012). Statistical software utilized included SPSS 24 to run frequency statistics, to provide demographic data from the sample, and to obtain psychometric properties for scales.

Statistical approaches for answering similar research questions in the literature. Similar questions to those listed in Chapter One have been addressed in past literature. Possible analyses of interest may include cluster analysis, path analysis or other structural

equation modeling, logistic or linear regressions, network analysis, or latent class analysis. There are benefits and limitations to each of these approaches in attempting to answer the aforementioned research questions, which are discussed below.

Cluster analysis. Latent class analysis falls under the broader category of cluster analyses (Muthén, 2001), but may offer specific advantages over cluster analysis in certain scenarios. Like latent class analyses, traditional cluster analyses allow researchers to identify subgroups or clusters that may exist within populations. Studies have been carried out that employ traditional, algorithmic cluster analyses to examine adverse childhood experiences. In 2015, Schilling, Weidner, Schellong, Joraschky, and Pöhlmann utilized cluster analyses to identify subgroups of traumatic experiences existing in 742 German, adult, inpatients. These clusters were then utilized to predict treatment outcome of psychotherapy. Three configurative clusters of ACEs emerged: mild trauma, polytrauma with sexual abuse, polytrauma without sexual abuse. Schilling et al. (2015) compared scores on the Beck Depression Inventory (BDI) and Symptom Check List-90-R (SCL-90-R) at intake and discharge for each of the three clusters. Findings indicate that individuals who experienced polytrauma with sexual abuse experienced the highest rates of symptomatology at intake and discharge, and the lowest benefit from psychotherapy as measured by symptom reduction.

In 2016, Schilling, Weidner, Brähler, Glaesmer, Häuser, and Pöhlmann utilized cluster analysis to determine if subgroups of trauma experiences exist within 2,504 German adolescents and adults in the community. These clusters were then related to later life experiences of depression and anxiety. Schilling et al. (2016) found three distinct clusters that differed by typology, including one overall low abuse group, one high abuse group

predominantly emotional and physical neglect, and one high abuse group predominantly physical and sexual abuse. The clusters further differentially predicted mental health symptoms.

Although traditional cluster analyses are capable of identifying subgroups of trauma, and utilizing these subgroups to predict symptoms and treatment outcome, they do not offer fit statistics that allow researchers to make statistically-driven inferences about the accuracy of the groups, as found in latent class analysis. Like factor analysis, latent class analysis is model-based; as a result, researchers can feel more confident evaluating results due to fit statistics (Masyn, 2013). Further, latent class analysis also offers the opportunity to identify multiple probabilities of class membership, rather than the fixed, absolute membership offered by cluster analysis (Collins & Lanza, 2009).

Path analysis or other structural equation modeling. There are several studies examining adverse childhood experiences utilizing structural equation modeling. Hodges, Godbout, Briere, Lanktree, Gilbert, & Kletzka (2013) conducted a path analysis with a clinical sample of 318 youth aged 8-12 who had experienced multiple interpersonal traumatic incidents. Hodges et al. (2013) predicted that the complexity of trauma exposure would lead to a complex symptom presentation, above and beyond any demographic characteristics. Harrelson (2019) utilized a mediation analysis to examine the relationship between adverse childhood experiences and symptom presentation. Utilizing this type of structural equation modeling, with a sample of 165 adolescent male youth who had perpetrated a sexual offense and were mandated to treatment, Harrelson hypothesized that participants who had

experienced multiple interpersonal traumatic incidents would demonstrate clinical symptoms as a result of affect dysregulation.

Although both of these studies examine the relationship between adverse childhood experiences and later clinical symptoms in youth, this type of structural equation modeling does not reveal how variables might configure together to influence symptoms as latent class analyses do. Thus, path analysis, mediation analysis, moderation analysis, and other structural equation modeling techniques are not as appropriate for the present research questions as latent class analysis.

Logistic or linear regression analysis. Yasinksi et al. (2018) collected data from 108 Medi-caid eligible youth aged 7-17 receiving services for trauma in a community mental health clinic from 2006 – 2012. Over half of the sample was White (51%), nearly half of the sample was Black (48%), 5% of the sample identified as Latinx, and the remaining sample identified as multiracial. Seven logistic regression analyses were conducted to examine the relationship between seven variables (i.e., demographics of client, demographics of caregiver, symptoms at baselines, client's behavior in session, caregiver's behavior in session, the therapeutic relationship with the client, and the therapeutic relationship with the caregiver). This method is promising for the current study, and although it would help solve the problem of violating assumptions of independence, running only logistic regressions cannot provide information on how the interweaving of the variables play a role in treatment attrition. Another study examining attrition in trauma-specific interventions found similar results (Tebbett, Brown, & Chaplin, 2018). Thus, although regression analyses seem appropriate to answer the research question of predicting symptom presentation, they cannot

provide detailed information regarding how experiences may occur together. Thus, it would be more appropriate for the present study to incorporate a latent class analysis first, followed by regression analyses utilizing latent classes.

Network analysis. Network analysis has been utilized in multiple studies to determine how the unique symptoms of certain disorders may interact to explain the various symptom presentations of disorders (Santos, Kossakowski, Schwartz, Beeber, & Fried, 2018; Sullivan, Smith, Lewis, & Jones, 2018). In very recent years, researchers have now engaged in network analyses to examine associations between criteria for psychosis, or post-traumatic stress disorder, or depression. These findings enable researchers to determine whether some symptoms occur independently, or whether or not some symptoms may explain others. For example, after a mass shooting, intrusive thoughts were related to a number of other symptoms, and anger demonstrated the shortest path between symptoms, indicating it is strongly related to other symptoms (Sullivan et al., 2018). Other studies have examined the relationship between networks of depression symptom on an outcome variable, self-efficacy, over time (Santos et al., 2018). Sanos et al. (2018) found that symptoms of loneliness and trouble sleeping were very closely related, as well as of crying and an inability to get going, and that these structures were stable, and stably negatively related to self-efficacy, over time. Implications of these studies are that they provide insight into how symptoms may be related with one another, potentially providing information on efficient interventions for disorders.

It may be interesting to conduct a network analysis on adverse childhood experiences, especially in a teen population. This may provide some insight into how earlier childhood experiences (interpersonal violence from caregivers) influence later adverse childhood

experiences (intimate partner violence), and what experiences occur together most frequently with other experiences. Utilizing network analysis to examine psychopathology is presently debated in the field. Forbes, Wright, Markon, and Krueger (2017) published a manuscript in which they attempted to replicate findings in the network analysis psychopathology literature, and report that "current psychopathology network methods have limited replicability both within and between samples, and thus have limited utility." Advocates for the utility of network analysis in examining psychopathology provide commentary questioning Forbes et al. (2017)'s findings (Borsboom et al., 2017), which Forbes and colleagues respond to in detail. In regard to Forbes' original argument against utilizing network analyses in this way, Steinley, Hoffman, Brusco, and Sher (2017) comment that they believe "'the problem is likely worse' than [Forbes et al. (2017)'s] results indicated". In addition to Forbes et al. (2017) being unable to replicate studies from Borsboom and colleague, Forbes et al (2017) examine eight different papers utilizing a network analysis to model networks of PTSD symptoms, finding conflicting associations in each network. Some authors have also argued that there are similar difficulties in examining latent classes of symptoms (Armour, Műllerová, & Elhai, 2016). As this study is not seeking to examine symptoms, but rather experiences, and is seeking to provide information that assists a community mental health agency rather than prove the existence on a phenomenological level of an underlying latent construct, after weighing strengths and challenges, it was decided to proceed with a latent class analysis and regression model.

Appropriateness of utilizing latent class analysis over other analyses: research questions leading the method. Although there are limitations to utilizing latent class analysis to examine adverse childhood experiences, based on past literature and the research question,

a latent class analysis appears to be the most methodologically superior and least flawed of the methods mentioned previously to explore the desired research questions in this dissertation. As described in detail in Chapter Two, there is a growing ACEs literature base with findings supporting the use of latent class analysis as a valid and needed analytic technique for this topic.

Latent class analysis is a type of finite mixture modeling performed to illuminate and describe heterogeneity in a group of otherwise similar individuals (Vermunt & Magidson, 2004). The goal of a latent class analysis is to determine the fewest number of classes required to create discrete, non-overlapping typologies. Historically, a cumulative risk approach has been taken to understand adverse childhood experiences (Felitti et al., 1998), indicating that there is a dose-response relationship between the amount of adversities experienced and deleterious outcomes. Most recently, scholars have advocated for the utility of an interactional approach (O'Hara, Legano, Homel, Walker-Descartes, Rojas, & Laraque, 2015), as it can offer specific prevention and intervention information above and beyond the dose-response framework (Lanier, Maguire-Jack, Lombardi, Frey, & Rose, 2018).

Crow, Swanson, Peterson, Crosby, Wonderlich, and Mitchell (2012) performed a latent class analysis on symptoms of eating disorders and utilized these latent classes to predict mortality rates. Crow et al. (2011) found that the latent classes were stronger and more accurate predictors of mortality than DSM-IV criteria, further indicating the utility of latent class analyses in intervention research.

As Felix, Binmoeller, Nylund-Gibson, Benight, Benner, and Terzieva (2019) note, an increasing number of researchers are employing latent class analysis as a framework to

understand exposure to traumatic experiences and the subsequent effect of this exposure on mental health symptoms. Felix et al. (2019) coin the term "threshold effect" to describe how some configurations of disaster experiences may be more influential on mental health outcomes than other configurations. Although mostly ordered classes emerged, Felix et al. (2019) found that different item combinations related to depression in differing, nonlinear ways, and as a result, encourage future studies to consider a person-centered framework when examining traumatic experiences.

Data analytic strategy. As mentioned previously, latent class analysis (LCA) is an appropriate statistical technique to answer the proposed research questions. An LCA, rather than latent profile analysis, is conducted as the indicators in the present study are categorical and dichotomous, rather than continuous (Nylund-Gibson & Choi, 2018). Unlike other statistical methods, there are no "cut-and-dry" guidelines for calculating a necessary sample size in latent class analysis. Sample size, effect size, and power depend upon a number of unique factors that vary from study to study. Although some individuals indicate that latent class analysis can be carried out with sample sizes as small as 30 (Muthén, 2013), others caution against utilizing latent modeling techniques with less than 200 participants (Collins & Wugalter, 1992), and still others note a sample size of 500 (Finch & Brock, 2011).

Wurpts and Geiser (2014) define a small sample size as a sample between 70 and 200 participants and provide evidence that the limitations created by small sample size can be somewhat mitigated with quality indicators and covariates. In an applied study of bisexual adults, Choi, Nylund-Gibson, Israel, and Mendez (2019) accurately identify a three-class model of bisexual identity. As suggested by Morovati (2014), survey items were culled and

subscale scores were incorporated, reducing redundancy and increasing quality of indicators, to compensate for the study's smaller sample size (n=292).

In 2007, Nylund-Gibson, Asparouhov, and Muthén ran a series of simulation studies to examine various fit indices for accurate class enumeration depending on sample size. In a simulated latent class analysis with ten continuous indicators and unequal class sizes, the Bayesian Information Criterion (BIC) can correctly identify the model nearly three-quarters (74%) of the time with a small sample size of 200. Some researchers have successfully discovered latent classes even when using a large number of indicators (i.e. upwards of 10) with samples of 190 individuals or smaller (Hardy, Garnier-Villarreal, McCarthy, Anderson, & Reynolds, 2018; Hyland et al., 2018; Tomczyk, Schomerus, Stolzenburg, Muehlan, & Schmidt, 2018; Tyler & Ray, 2019). However, the majority of latent class analyses run with small sample sizes (i.e., 200 individuals or smaller) utilize five indicator items on average (Brantley, Kerrigan, German, Lim, & Sherman, 2017; Cheung & Cheung, 2018; Dembo et al., 2015; Dowdy, Nylund-Gibson, Felix, Morovati, Carnazzo, & Dever, 2014; Goklish & Larzelere-Hinton, 2015; Kiang, Supple, & Stein, 2019; Miller & Marsee, 2019; Specker & Nickerson, 2019).

When latent class analyses with particularly small sample sizes are run, it is generally in order to explore an underserved and understudied population, like homeless youth (Tyler et al., 2019), incarcerated youth (Miller et al., 2019), exotic dancers (Brantley et al., 2017), American Indian youth who have attempted suicide (Goklish et al., 2015), and refugees (Hyland et al., 2018; Specker et al., 2019). In a series of latent class simulation studies, No and Hong (2018) found that latent class analyses could be run accurately detect classes with

sample sizes as small as 100, depending upon which approach is utilized. In a series of latent class simulation studies utilizing binary, categorical indicators, Henry, Dymnicki, Mohatt, Allen, and Kelly (2015) found that sample sizes as small as 50 could produce accurate modeling.

Although small, a benefit of the present sample is that it is a sample of youth seeking services at a community mental health agency. States are increasingly introducing mandatory ACEs screenings for individuals using Medicaid, and these populations are typically referred to community mental health agencies and non-profit organizations for treatment. The present study offers a significant contribution to prevention and intervention science, as the population utilized in the study is reflective of a true, community sample, and thus, the analysis is justified despite the limitations imposed by a smaller sample size.

Summarizing the literature, it appears that latent class analysis can be performed with smaller sample sizes, but with some limitations which will be discussed in Chapter Five. As the number of redundant indicators decrease, the disadvantages associated with small sample sizes also may decrease. There is a precedent for conducting latent class analyses employing 10 or greater indicators with small sample sizes. However, based upon the methodological literature, previous simulation studies, and previous applied studies using approximately 5 indicators, I would rather be more conservative in the use of indicators to increase confidence in findings. As a result, only 5-10 indicators will be employed while the sample size remains under 200.

There are various approaches to consider when introducing auxiliary variables (i.e., predictors and outcomes) into a latent class model, as the inclusion of covariates and distal

outcomes is an active area of investigation. Historical methods for incorporating auxiliary variables into a latent class analysis included one-step approaches, classify-analyze, and New Bayes' Theorem. Recently, these approaches have been found to produce biased results, or, change the nature of classes as a result of the influence of auxiliary variables estimating class membership. Asparouhouv & Muthén (2018) note that a three-step approach outperforms a one-step approach as the formation of classes may be influenced by the included outcome variables. There are several new approaches that may be considered when running an LCA with auxiliary (i.e., covariates/predictor or distal outcome) variables, each with differing benefits and challenges. Newer approaches include Vermunt's Maximum-Likelihood 3-step (3-step ML; Vermunt, 2010) and the 3-step BCH method (Asparouhov & Muthén, 2014). To remedy the issue of biased estimates and high standard errors, the ML 3-step approach is used within this work. Information required to interpret results of the 3-step LCA are described using subheadings below. In this approach, (1) the researcher first generates a latent class model without any covariates or distal outcomes, and then (2) derives error estimates for class membership, and finally (3) runs regressions to predict class membership from covariates and predict outcomes from class membership.

Proposed variables for latent class and latent regression analyses. As stated previously, an examination of prevalence rates of ACEs in the present sample of 100% Latinx youth contributes substantially to the growing body of ACEs literature. The study will provide prevalence rates for nineteen of the twenty ACEs items incorporated into the community mental health agency's intake survey. For consistency with the CYW ACE-Q, the item that the agency added about prenatal substance use exposure is not incorporated.

The independent variables in the study are nineteen ACEs; these nineteen ACEs are considered *indicators*, and latent class membership is regressed onto them, similar to factors being regressed on latent factors. Items include the original ten ACEs from Felitti et al.'s 1998 study: sexual abuse, emotional abuse, emotional neglect, physical abuse, physical neglect, witnessing domestic violence, living with someone dependent upon substances, living with someone incarcerated, living with someone with mental illness, and divorce/separation. The additional nine items are the items suggested by community members and practitioners, and are included in the CWY ACE-Q: personal incarceration, personal dating violence, foster care, personal medical illness, separation due to deportation/immigration detention, bullying, community violence, discrimination, and sudden loss of a guardian. *Distal outcomes* are variables that are predicted by latent class membership. Distal outcomes in the present study include externalizing symptoms, internalizing symptoms, and "other" symptoms (i.e., thought problems, social problems, and attentional difficulties), as measured by the Youth Self-Report (2001). *Covariates* predict class membership, and gender is a covariate in the present study.

Methodologists and applied researchers have called for a consistent and unified definition of ACEs to address limitations in ACEs research and improve the scientific study of the construct (Jackson, McGuire, Tunno, & Makanui, 2019; Kelly-Irving & Delpierre, 2019). One critique of ACEs research is the difficulty in replicating findings due to conflicting definitions. To address this critique, the present study will utilize the original ten ACEs items (Felitti et al., 1998) as indicators, in addition to the nine additional ACEs suggested by Burke Harris and Renschler (2015). It is proposed that classes will emerge,

although the interactions amongst items within the classes are not identified as the present study is exploratory in nature. Once classes emerge, regression analyses using gender to predict classes, and classes to predict symptoms at intake, were run.

Estimating the unconditional LCA. Cases with missing data were retained as the maximum likelihood estimation method used for the LCA is robust to missing cases (Enders & Bandalos, 2001). A series of LCA models were fit without auxiliary variables to first determine class the best number of classes to capture the heterogeneity in ACEs (Nylund-Gibson & Masyn, 2016). Based upon patterns of participant responses, Mplus creates distinct classes that can differentiate participants. The model estimates the odds of a specific individual in the sample being placed into each class. Using the nineteen ACEs indicator items from the CYW ACE-Q survey, seven models for the data were iteratively estimated and statistically compared to one another. For example, a 1-class model is estimated, then a 2-class model, 3-class model, 4-class model, 5-class model, 6-class model, and 7-class model. Fit statistics (e.g., Bayesian Information Criterion (BIC), Bootstrap Likelihood Ratios (BLRT)) for every model are tabulated and statistical compared to determine the best-fitting model for the data.

Class enumeration. Utilizing sample size, the number of free parameters, and loglikelihood ratios, fit information for each model is calculated, including the Akaike's information criterion (AIC), the consistent AIC (CAIC), the Bayesian information criterion (BIC), and the sample size adjusted BIC (saBIC). The best-fitting model is indicated the same way for the AIC, CAIC, BIC, and saBIC; information criteria values decrease with each additional class, but, at some point, these values begin to increase again. The optimal *k*-

class model is the model where the minimum occurs, before the increase. The Vuong-Lo-Mendell Rubin Likelihood Ratio Test (LMRT) and the Bootstrap Likelihood Ratio Test (BLRT) are tests with associated *p*-values that compare the fit between two latent class models with differing number of classes. When the LMRT and BLRT are significant, it means the present *k*-class solution is superior to the solution before it. As classes increase, at some point, the *p*-values for the LMRT and BLRT become non-significant, indicating that the current *k*-class solution is not providing additional and meaningful information, and that a class with fewer classes is preferred. For example, if the LMRT and BLRT *p*-values are significant for a 1-class, 2-class, 3-class, 4-class, and 5-class solution, but not 6-class solution, this suggests that the 5-class solution is the best fitting model.

Finally, the Bayes' factor (BF) and correct model probabilities (cmP) are also used as fit indices. The highest *BF* value greater than ten suggests the best-fitting model for the data, while the cmP value closest to 1 suggests the best-fitting model for the data. A model's entropy and average posterior probabilities (AvePP), are valuable to observe. Although not used to enumerate classes, entropy values are probabilities capturing classification accuracy and should be above .85 (Muthen & Muthen, 2000). Average posterior probabilities (AvePP) indicate the proportion of the time that any given individual placed in a class would be placed in that class correctly, and should also be above .85 (Andruff et al., 2009).

Class sizes and conditional item probabilities can also be used to help determine the final model. Class sizes refer to the proportion of the population that comprise each class. Conditional item probabilities refer to the odds that a participant within a given class will endorse an indicator. For example, a class with an average item probability of .27 on an

indicator suggests that for an individual in that class, there is a 27% that they endorse that indicator. Current best practices for LCA dictate that there should be high class separation across classes and high homogeneity within classes (Masyn, 2013). Items with probabilities above .7 or below .3 suggest that these items strongly differentiate individuals from one class to another. Indicators/items with conditional probabilities above .7 suggest high levels of within-class homogeneity, as this means that a participant in the sample would endorse that item 70% of the time.

Incorporating linear regressions. After enumeration is complete, we include auxiliary variables in the analysis. There are several ways to include auxiliary variables in mixture models with newer three-step approaches, including the Vermunt ML 3-step (automatic and manual) and the 3-step BCH approach (automatic and manual). The Vermunt ML 3-step and the BCH 3-step approaches are similar in that they both utilize multiple steps to incorporate distal outcome variables into an LCA, but they differ in how errors are incorporated. Steps for the Vermunt ML 3-step are: (1) the unconditional LCA is estimated, (2) participants are assigned a class *and* an uncertainty rate to incorporate possible error, and (3) class membership and uncertainty rates are then used to predict the distal outcomes. Steps for the BCH 3-step are: (1) the unconditional LCA is estimated, (2) class assignment errors are computed and saved for later use as weights, (3) the regression is conducted using BCH weights to incorporate error, as opposed to uncertainty rates in the second step of the Vermunt ML 3-step approach. Although one benefit of the BCH 3-step approach is that it can help stabilize classes and provides individual errors rather than at the latent class level, one

disadvantage is that it is sensitive to smaller sample sizes, and can produce negative estimates of weights and variances.

Linear regressions were estimated to determine whether gender significantly predicted class membership, and whether class membership could significantly predict internalizing and externalizing symptoms. When testing for mean differences in the distal outcomes, we estimate a class specific distal outcome mean for each of the distal outcomes and then test if they are significantly different from each other. Similar to an omnibus test in ANOVA, Mplus reports an omnibus chi-squared to see if there are any significant differences (with an associated *p*-value). Overall chi-square results with *p*-values less than .05 indicate that there is a statistical difference between means of the outcome variable conditioned on class membership. Mplus then calculates all pairwise comparison and provides corresponding chi-squared statistics and *p*-values. For example, in a three-class solution, Class 1 is compared to Class 2, Class 1 is compared to Class 3, and Class 2 is compared to Class 3.

Chapter Four: Results

To aid with interpretation, the results section is comprised of three distinct subsections. First, the results of the unconditional latent class modeling process are reported. These results describe a class enumeration process and enable an exploration of the extent to which trauma-specific profiles do, or do not, exist within a help-seeking population of Latinx adolescents. Fit statistics are provided as support for a 3-class solution. Included in this subsection are also item probabilities, class sizes for the 3-class model, and names for the three distinct ACEs typologies. The second subsection discusses the frequency of various response patterns found within the dataset. The third and final subsection offers the results of including auxiliary variables into the analysis. Gender is used as a covariate to predict class membership. To determine the relationship between trauma-specific profiles and symptoms presented at intake, the classes are regressed upon externalizing and internalizing symptomology. Mplus version 7.0 (Muthén & Muthén, 1998 – 2012) was used to estimate an ML 3-step LCA.

Latent Class Analysis

Model Enumeration. Nineteen indicators of adverse childhood experiences (Table 2) were used to measure the latent classes. A discussion of the advantages and limitations of utilizing nineteen indicators is included in Chapter Five. Seven latent class models were fit (1-7 classes) and compared with a number of corresponding statistics indicating levels of "fit" (Table 3). When conducting a latent class analysis, there is no one fit statistic that is more important than another, and no one "correct" solution. Instead, researchers synthesize

and interpret all fit statistics to select a good fitting model that has substantive support and is empirically useful (Nylund-Gibson & Choi, 2018).

The BIC and CAIC provided support for a 2-class model, while the AIC and saBIC provided support for a 3-class model (Table 3). Looking at the fit indices presented in Table 3, we see that $p < .001$ for the LMRT at a 2-class solution, but $p = .35$ at a 3-class solution. This indicates that the LMRT supported a 2-class solution. However, the BLRT increased in significance until reaching a six-class solution, suggesting that a 3-class solution is superior to a 2-class solution at $p < .001$. The cmP suggested that a 2-class solution is a better fitting solution, while the *BF* suggested that the 3-class solution is a better fit. The average posterior probabilities (AvePP) indicated the proportion of the time that any given individual placed in a class would be placed in that class correctly; both the 2-class and 3-class solutions have AvePP's above .90 (Table 3).

Due to nearly all fit statistics converging upon either a 2-class or 3-class model, it is likely that both a 2-class model and 3-class model are adequate models to describe co-occurrences of adverse childhood experiences. As there is acceptable support for a 3-class solution, and an examination of item probabilities reveals meaningful differences amongst the three classes, the present study utilizes a 3-class model of ACEs.

Class Sizes and Item Probability. Item probabilities (Figure 2) represent the proportion of a specific class endorsing an item. For example, in Class 1, for the item "Emotional Abuse", an item probability of .204 indicates that a person in this class would endorse having experienced emotional abuse 20.4% of the time. Item probabilities falling

below .30 and above .70 suggest that an item is differentiating class members well, and is a valuable item in interpretation (Masyn, 2013).

The first class was the smallest class (n = 23), comprising 13.8% of the sample. Participants in this class were extremely likely to report bullying (92.9%) and were likely to report experiencing community violence (62.1%). Differentiating themselves from classes two and three, participants in the first class were extremely unlikely to endorse a number of household dysfunction questions. For example, participants in this class did not endorse (0%) witnessing domestic violence, experiencing physical neglect, and being in foster care. Endorsement of family members with mental illness and divorce were also low, at 4.6% and 18%, respectively. There is some evidence of parental/household dysfunction that contrasts this (i.e., emotional abuse and neglect, incarcerated family member, family member using substances, physical abuse); however, item probabilities for these items primarily fell below .3 (indicating that someone in this class would endorse those items less than 30% of the time), and were lower than item probabilities of these items in other groups. Interestingly, although less likely to report having been sexually abused than experiencing bullying or community violence, participants in this class were the most likely to report having experienced sexual abuse (34.6%).

Participants in the first class were also more likely to have experienced dating violence themselves (26%) and going to jail themselves (26.5%) than participants in the second or third class. It appears that this class experiences interpersonal victimization (i.e., bullying, discrimination, teen dating violence, sexual abuse) in a wider variety of settings than the other classes, and at greater rates. Interestingly, compared to other classes, items

representing household challenges and dysfunction (e.g., witnessing domestic violence, family members experiencing mental illness or substance use issues) were low. As a result of exhibiting the highest likelihood of endorsing experiencing community violence, discrimination, sexual abuse, teen dating violence, and bullying, while exhibiting lower levels of household dysfunction, I named this class: *Interpersonal Victimization with High Community Violence and Low Household Dysfunction.*

The second class is the largest class (n = 85), and comprised slightly over half of the sample at 50.90%. Of all indicators in this class, participants were most likely to report experiencing divorce (57.4%). Participants in the second class were not very likely to report having experienced interpersonal peer violence (0% discrimination, 10.3% bullying, 0% dating violence), representing a marked difference from the *Interpersonal Victimization with High Community Violence and Low Household Dysfunction* class. As this class is primarily identified by its increased levels of divorce endorsement, and has particularly low levels of interpersonal victimization, it was called: *Healthy Interpersonal Relationships with Divorce and Low Household Dysfunction.* Key experiences differentiating this class included moderate levels of divorce, while simultaneously experiencing low levels of nearly all other ACEs.

Aside from divorce, individuals comprising the *Healthy Interpersonal Relationships with Divorce and Low Household Dysfunction* class exhibited relatively low rates of adverse experiences that makeup household dysfunction, such as domestic violence, a family member with mental illness, a family member in jail, being in the foster care system, or emotional abuse.

The third class (n = 59), the second-to-largest class, stood in stark contrast to the two classes preceding it in regards to household challenges. Accounting for 35.3% of the entire sample, the third class demonstrated the highest rates of household dysfunction; 82% endorsed that their caregivers are divorced, 87% endorsed that they have witnessed domestic violence, 87% reported that they have experienced emotional abuse, and 53% reported experiencing emotional neglect. The third class also contained the greatest proportion of participants with a family member with mental illness (44.2%), an incarcerated family member (69%), and a family member with substance dependence (81.1%). Participants in the third class also endorse experiencing foster care (25.4%), the death of a guardian (16.2%), physical abuse (71.1%), and physical neglect (23.7%) at greater rates than participants in the other classes.

Interestingly, participants in this third class reported experiencing sexual abuse (31.8%), dating violence victimization (7.7%), and incarceration (15.3%) less than participants in the *Interpersonal Victimization with High Community Violence and Low Household Dysfunction* class, and at a frequency much lower than the other ACEs they endorse (e.g., domestic violence, divorce, emotional abuse, family member with substance dependence). Because participants in this class demonstrated highly elevated rates of household dysfunction, with relatively lower rates of interpersonal victimization perpetrated outside the home (i.e., bullying, dating violence victimization, discrimination), this class was referred to as *Family Interpersonal Victimization with Extreme Household Dysfunction.* Key experiences which differentiated this class from other classes included divorce, witnessing

domestic violence, emotional abuse, family member with substance dependence, and physical abuse.

Patterns of Responding

Response patterns offer insight into the specific vector of items that participants endorse. Like prevalence rates of specific ACEs, it is useful to examine the frequency of response patterns. Because there are nineteen indicators, there are 524,288 (2^{19}) possible unique response patterns. In the present data, 140 unique response patterns were found.

The *Interpersonal Victimization with High Community Violence and Low Household Dysfunction* (n = 23) demonstrated a wide variety of diverse response classes, with the most commonly occurring response pattern occurring twice. The most commonly endorsed response pattern consisted of: bullying, discrimination, emotional neglect, sexual abuse, and teen dating violence. Endorsement of the nineteen ACEs indicators in this class ranged from 3 – 8, with an average cumulative ACEs score of 4.68. The most frequently endorsed ACEs experience in this class is bullying; witnessing domestic violence and being physically neglected are never endorsed.

In the *Healthy Interpersonal Relationships with Divorce and Low Household Dysfunction* (n = 85), the most commonly occurring response pattern (n = 6) was that participants indicated an ACEs score of "0". The second most commonly endorsed response pattern (n = 5) was to endorse only experiencing parental divorce. Endorsement of the nineteen ACEs indicators in this class range from 0 – 6, with an average cumulative ACEs score of 2.84. The most frequently endorsed ACEs experience in this class was divorce; discrimination and teen dating violence are never endorsed.

In the *Family Interpersonal Victimization with Extreme Household Dysfunction* (*n* = 56), the most commonly occurring response pattern (*n* = 3) was as follows: bullying, divorce, witnessing domestic violence, emotional abuse, emotional neglect, incarcerated family member, family member experiencing substance dependence, living in the foster care system, physical abuse, and physical neglect. Endorsement of the nineteen ACEs indicators in this class range from 1-13, with an average cumulative ACEs score of 7.61. The most frequently endorsed ACEs experiences in this class are experiencing emotional abuse and witnessing domestic violence; the least frequently endorsed ACEs experience in this class is experiencing a major medical illness. Of all classes, the *Family Interpersonal Victimization with Extreme Household Dysfunction* report the greatest number of cumulative ACEs.

Incorporating Auxiliary Variables

Vermunt's manual 3-step approach (Vemunt, 2010) was used to incorporate auxiliary variables into the analysis. Gender is used as a covariate to predict class membership, and class membership is used to predict symptoms at intake. Based on the literature, it was hypothesized that latent classes would differentially predict a client presenting with predominantly internalizing or externalizing symptoms at intake, as measured by the Achenbach Youth Self-Report (Achenbach & Rescorla, 2001). First, results for the "predictor" (i.e., gender) of class membership are reported, followed by results of the "distal outcome" (i.e., internalizing symptoms and externalizing symptoms). All results are logistic and multinomial regressions, and chi-squared statistics are reported.

Gender. Overall, there was a significant and direct relation of the predictor variable to the distal outcome measures. Participants in the sample who identified as male reported,

on average, fewer internalizing symptoms than participants who identified as female ($\chi 2$ = -6.02, p <.05). Participants in the sample identifying as male also reported fewer externalizing symptoms than participants who identified as female ($\chi 2$ = -4.80, p <.05). The only significant gender difference occurred when comparing the *Healthy Interpersonal Relationships with Divorce and Low Household Dysfunction* and the *Family Interpersonal Victimization with Extreme Household Dysfunction* (χ^2 = .84, p < .05) classes. Participants identifying as male are 2.3 times more likely to belong to the *Healthy Interpersonal Relationships with Divorce and Low Household Dysfunction* class than the *Family Interpersonal Victimization with Extreme Household Dysfunction* class.

Internalizing. The internalizing broadband scale of the YSR is comprised of the anxious/depressed, anxious/withdrawn, and somatic complaints subscales. Mean difference testing suggested that there are differences in internalizing scores depending upon class membership. There were differences in the mean internalizing symptoms ($x^2_{\text{Class 1 v. Class 2}}$ = 5.74, p < .05; $x^2_{\text{Class 1 v. Class 3}}$ = 6.19, p < .05) when comparing *Interpersonal Victimization with High Community Violence and Low Household Dysfunction* (M = 67.91, SE = 2.24) to *Healthy Interpersonal Relationships with Divorce and Low Household Dysfunction* (M = 62.16, SE = 1.69), and also when comparing the *Interpersonal Victimization with High Community Violence and Low Household Dysfunction* class (M = 67.91) to the *Family Interpersonal Victimization with Extreme Household Dysfunction* class (M = 61.71, SE = 1.68).

There was not a statistically significant difference in self-report of internalizing symptoms between participants in the *Healthy Interpersonal Relationships with Divorce and*

Low Household Dysfunction (M = 62.16, *SE* = 1.69*)* class and participants in the *Family Interpersonal Victimization with Extreme Household Dysfunction* class (*M* = 61.71, *SE* = 1.68). Although participants in the *Family Interpersonal Victimization with Extreme Household Dysfunction* exhibited the greatest number of cumulative ACEs, participants in the *Interpersonal Victimization with High Community Violence and Low Household Dysfunction* class demonstrated the highest internalizing symptom score, with a mean *T*-score of 67.91, which was greater than the clinically significant value of 65.

Externalizing. The externalizing broadband scale of the YSR is comprised of rule-breaking behavior and aggressive behavior subscales. As with internalizing symptoms, there was also a statistically significant difference in severity of externalizing symptoms depending upon the latent classes. There was a significant difference in the mean externalizing symptoms ($x^2_{\text{Class 1 v. Class 2}} = 6.25$, $p < .05$) when comparing *Interpersonal Victimization with High Community Violence and Low Household Dysfunction* class (*M* = 63.06, *SE* = 2.56) to *Healthy Interpersonal Relationships with Divorce and Low Household Dysfunction* class (*M* = 56.81, *SE* = 1.56).

Externalizing symptoms of those in the *Family Interpersonal Victimization with Extreme Household Dysfunction* class (*M* = 58.91, *SE* = 1.51) did not differ from those in the *Interpersonal Victimization with High Community Violence and Low Household Dysfunction* class (*M* = 63.06, *SE* = 2.56) or the *Healthy Interpersonal Relationships with Divorce and Low Household Dysfunction* class (*M* = 56.81, *SE* = 1.56). There was a statistically significant difference between externalizing symptom means depending upon class membership in the *Interpersonal Victimization with High Community Violence and Low*

Household Dysfunction (*M* = 63.06, *SE* = 2.56) class or the *Healthy Interpersonal Relationships with Divorce and Low Household Dysfunction* class (*M* = 56.81, *SE* = 1.56) class. These findings suggested that the *Healthy Interpersonal Relationships with Divorce and Low Household Dysfunction* class (*M* = 56.81, *SE* = 1.56) had the lowest externalizing symptoms *t*-scores.

Chapter Five: Discussion

There is currently no consensus in the field regarding how best to interpret ACEs data in a clinical setting. This dissertation examined prevalence rates of ACEs in an adolescent, Latinx, help-seeking population. It then utilized a person-centered modeling approach, latent class analysis, to explore whether interactions between ACEs might make up meaningfully differentiated classes. Taking into consideration model fit statistics, parsimony, substantive utility, and theoretical support, a three-class model was estimated. The three typologies of ACEs constellations that emerged are: (1) *Interpersonal Victimization with High Community Violence and Low Household Dysfunction,* (2) *Healthy Interpersonal Relationships with Divorce and Low Household Dysfunction, and* (3) *Family Interpersonal Victimization with Extreme Household Dysfunction.* As classes were differentiated by class composition, rather than the amount of cumulative trauma, results of the LCA suggest that individuals are more likely to experience varying levels of specific types of co-occurring ACEs, rather than experiencing low, medium, or high levels of ACEs in a cumulative risk fashion as current frameworks for interpreting ACEs suggest. These findings suggest that three distinct constellations, or subtypes, of co-occurring traumatic experiences that Latinx youth face before seeking mental health counseling could be estimated.

Research Question 1

The first question this dissertation sought to answer was whether meaningfully unique constellations of ACEs could be estimated in a sample of help-seeking Latinx adolescents. Results of a latent class analysis model enumeration process found three unique constellations of ACEs. The largest class was the parental divorce class, referred to as the

Healthy Interpersonal Relationships with Divorce and Low Household Dysfunction class. Within this class, the most common pattern of responding was to either experience no ACEs at all or to endorse experiencing parental divorce and few other ACEs. On average, this class reports experiencing the fewest number of ACEs. Some literature suggests that there are protective factors, or, positive outcomes following parental divorce (Jackson & Fife, 2018) which may explain this group's relatively low ACEs score; however, significantly more research is needed in order to support this claim.

The second-to-largest class, *Family Interpersonal Victimization with Extreme Household Dysfunction,* accounted for 35.3% of the sample, consisting of 59 youth. From a cumulative risk perspective, this class would be considered at greatest risk, as they endorsed the most ACEs on average out of all classes. Participants in this class endorsed experiencing parental divorce (82.20%) at greater rates than participants in the *Healthy Interpersonal Relationships with Divorce and Low Household Dysfunction* class (57.4%). Unlike the *Healthy Interpersonal Relationships with Divorce and Low Household Dysfunction* class, participants in the *Family Interpersonal Victimization with Extreme Household Dysfunction* reported experiencing several household challenges (i.e., family substance abuse, family incarceration, witnessing domestic violence, being in the foster care system), as well as interpersonal victimization within the household (i.e., physical abuse and neglect, emotional abuse and neglect).

When comparing the typologies of these classes, it appears as though there is one class of youth with divorced parents whose families are characterized by a lack of challenges, and one class of youth with divorced parents whose families are characterized by their

challenges. This may suggest two different trajectories for families experiencing divorce. Although youth in the *Family Interpersonal Victimization with Extreme Household Dysfunction* class experience high rates of interpersonal victimization inside the home, they report experiencing relatively lower rates of non-parental victimization (e.g., bullying, discrimination, teen dating violence), suggesting healthy (or no) relationships with peers and romantic partners.

The smallest class accounted for just 13.8% of the sample, consisting of 23 youth, but is substantively quite different from the other classes. This class was characterized by frequent out-of-home interpersonal victimization, including teen dating violence, discrimination, and bullying. Participants in this class also report the highest rates of community violence, sexual abuse, and incarceration. Interestingly, participants in this class report less abuse, foster care involvement, and domestic violence exposure than those in the *Family Interpersonal Victimization with Extreme Household Dysfunction* class. Thus, it appears that although both classes share rates of interpersonal victimization, the perpetrators of this victimization may differ (e.g., peers or community members compared to family). Because participants in this class are less involved in the foster care system, yet are more involved in the juvenile justice system, it is possible that this may be a class of youth in need of services, but undetected by the child welfare system.

One possible explanation for the *Interpersonal Victimization with High Community Violence and Low Household Dysfunction* class experiencing more justice involvement, less foster care involvement, the highest rates of sexual abuse and dating violence, as well as the greatest internalizing and externalizing symptoms, is that these youth may be on the cusp of,

or already involved with, the commercial sexual exploitation of children (CSEC). There is a well-documented relationship between the specific ACEs these youth endorse (e.g., community violence, sexual abuse, bullying, teen dating violence, juvenile justice involvement) and CSEC involvement (Franchino-Olsen, 2019). Although this class of youth was not reporting a common risk factor for CSEC, extreme household dysfunction, as youth in the *Family Interpersonal Victimization with Extreme Household Dysfunction* class do, youth in this class *were* reporting less household and community strengths than the youth in the *Healthy Interpersonal Relationships with Divorce and Low Household Dysfunction* class do. This suggests that although these youth are not in extremely dysfunctional households, they are also not in extremely protective households. Additional research is needed to investigate the relation between youth who would fall in this class and their risk of CSEC.

Research Question 2

After models were enumerated and class membership was examined, the present study investigated whether significant gender differences existed between classes. Significant gender differences were found when predicting class membership in the *Healthy Interpersonal Relationships with Divorce and Low Household Dysfunction* class. Some research suggests that men more frequently report physical assault and accidents than women, while women more frequently report sexual assault than men (Freedman et al., 2002). These findings are confirmed by Iniguez and Stankowski (2016). However, these findings are specifically related to adult populations retrospectively reporting childhood adversity. Although fewer studies exist examining gender differences in traumatic experiences among school-age children and adolescents, Finkelhor et al. (2014) reported a

greater proportion of individuals identifying as female report that they experienced child sexual abuse. Findings from Keesler et al. (2020) also support this, as they found that female youth experienced emotional neglect, sexual abuse, and family mental illness at greater rates than males in their sample of school-aged children. Thus, there is some evidence that the type of traumatic experiences males and females face is different, explaining the findings of the covariate regression.

The finding that males were more likely to be placed in the *Healthy Interpersonal Relationships with Divorce and Low Household Dysfunction* class may be for a number of reasons. As differences exist in the prevalence rates of types of ACEs reported by men and women, it is possible that these are then true gender differences in the occurrence and co-occurrences of ACEs. Past literature suggests that girls are survivors of interpersonal violence at greater rates than their male counterparts. However, the differences in prevalence rates of trauma overall, and interpersonal violence and victimization specifically, may be artificial. The socially constructed idea of maleness is that boys are tough, strong, and don't cry (Hill et al., 2020). This idea is often a result of gender socialization, and has a profound impact on the mental health of male survivors (Finkelhor, 2019; Nelson, 2019). As boys in the current sample were between the ages of 13 - 17, they are at a particularly vulnerable period of development as boys in the context of gendered expectations, and may be unwilling or unable to discuss interpersonal victimization experiences perpetrated against them. Thus, it may be that boys are most likely to go into the non-interpersonal victimization class rather than either of the other two classes comprised of interpersonal victimization because: (1) the only adverse experience boys in this sample faced truly was divorce, (2) because boys

experience greater rates of stigma and shame regarding traumatic experience than girls, or (3) that some combination of these two conditions is explaining this result.

The findings of the logistic regression in the present study predicting class membership dependent upon participant gender echo the results of Haahr-Pedersen et al. (2020) and extends their findings by suggesting that distinct gender differences in profiles of ACEs can emerge as early as adolescence.

Research Question 3

One goal of this dissertation was to establish a collaborative and mutual partnership with a community agency where knowledge could be shared from one party to the other. One way this dissertation contributed to the agency is through its applied relevance that is useful for practitioners. To aid in assessment and treatment planning at a community agency, one research question in this dissertation sought to determine whether the diversity in traumatic profiles was practically and functionally meaningful. In other words: if diverse profiles of traumatic experiences exist, can they differentially predict the psychological symptoms that clients could present at intake?

Internalizing disorders are typically thought of as distress that manifests toward the self- an individual might experience depression or anxiety. Meanwhile, externalizing disorders are typically thought of as distress that manifests outward, typically through aggression or defiance. Regressions were run to determine if the previously found typologies of ACEs could differentially predict internalizing or externalizing symptoms. Two statistically significant differences in internalizing symptom scores emerged, suggesting that participant in the *Interpersonal Victimization with High Community Violence and Low*

Household Dysfunction class exhibited more internalizing symptoms than individuals in both of the other classes. An examination of response patterns illuminates that although individuals in the *Interpersonal Victimization with High Community Violence and Low Household Dysfunction* class report the greatest severity of internalizing symptoms, they do *not* report the greatest number of cumulative ACEs.

A univariate one-way ANOVA demonstrated significant differences in cumulative ACEs scores, and all post-hoc testing (i.e., Bonferroni, Games-Howell, Fisher's Least Significant Difference, Scheffe, Sidak, and Tukey's Honestly Significant Difference) suggested that the differences in cumulative ACEs scores for each class were significant. Because youth in the *Interpersonal Victimization with High Community Violence and Low Household Dysfunction* class report the greatest severity of internalizing symptoms, but report a significantly lower cumulative ACEs score than youth in the *Family Interpersonal Victimization with Extreme Household Dysfunction* class, provides support that in the present study, the composition of the classes, rather than the cumulative ACEs, is predictive of outcomes. Thus, there is some evidence that the present dose-response and cumulative frameworks of utilizing ACEs (Lanier et al., 2018) may not fully capture the relation between traumatic experiences and their psychological aftermath.

It may be that the *type*, or content, of the trauma significantly impacts the type and severity of symptoms experienced. For example, the *Interpersonal Victimization with High Community Violence and Low Household Dysfunction* class also reports the greatest rates of sexual abuse and teen dating violence. Betrayal trauma (Freyd, 1996) refers to situations in which someone is victimized by a person that they trust and rely on for safety and survival,

like caregivers or a romantic partner. Betrayal trauma theory (Freyd, 1996), like developmental trauma disorder frameworks (van der Kolk, 2017), and theories of interpersonal neurobiology (Porges, 2011) posits that this specific type of delicate and nefarious injury carried out by someone the survivor relies on may create different and greater pathology than other types of victimization. Further, the present sample is a sample of Latinx adolescents. Recent investigations into betrayal trauma theory suggest that this relationship is even more staggering for marginalized groups (Gómez & Freyd, 2017).

In this study, participants were limited to youth who identified as Latinx to control for ethnicity-based variance in traumatic experiences. Interestingly, the prevalence of endorsing discrimination experiences varied from class to class, with the *Interpersonal Victimization with High Community Violence and Low Household Dysfunction* class having reported the greatest rates of discrimination at 35.1%. It may be that these youth experience more ethnicity-based discrimination than their peers. Alternatively, because we are controlling for race/ethnicity, it may be that this group is being discriminated against for a reason other than race and ethnicity (e.g., sexual orientation). LGBT individuals experience more bullying, discrimination, teen dating violence, juvenile justice involvement, and internalizing symptoms than their non-LGBT peers (Mallon & Perez, 2020;). As this class demonstrates the greatest rates of bullying, discrimination, teen dating violence, juvenile justice, and internalizing symptoms, it is possible that this class consists of LGBT youth.

Unfortunately, I cannot investigate the extent to which sexual and gender minority status may influence class membership, as the agency that the study took place at did not, at the time, collect this information. One benefit of this community-academic partnership is that

it has highlighted the importance of including questions about gender identity and sexual orientation on mental health intake forms, which can be recommended to the agency, leading to more SGM-inclusive practices. At the time of the completion of this dissertation, this information was included on updated screening and intake forms.

As with internalizing disorders, there was also a significant relationship between class membership and externalizing disorders. Interestingly, unlike with internalizing disorders, there was no statistically significant difference between *Interpersonal Victimization with High Community Violence and Low Household Dysfunction* and *Family Interpersonal Victimization with Extreme Household Dysfunction.* This may suggest that there is a unique association between interpersonal victimization and externalizing symptoms that does not exist between interpersonal victimization and internalizing symptoms, or, it could be due to insufficient power to detect a significant difference.

The statistically significant difference that emerged was between the *Interpersonal Victimization with High Community Violence and Low Household Dysfunction* and the *Healthy Interpersonal Relationships with Divorce and Low Household Dysfunction* class; individuals in the *Interpersonal Victimization with High Community Violence and Low Household Dysfunction* reported a greater severity of externalizing symptoms than individuals in the *Healthy Interpersonal Relationships with Divorce and Low Household Dysfunction* do. These findings make sense as individuals in the *Interpersonal Victimization with High Community Violence and Low Household Dysfunction* group report greater rates of juvenile justice involvement, which is associated with externalizing symptoms like aggression (Charak et al., 2019).

Comparing internalizing and externalizing disorders, the *Interpersonal Victimization with High Community Violence and Low Household Dysfunction* class exhibits greater internalizing than externalizing symptoms (67.91 vs. 63.06), the *Healthy Interpersonal Relationships with Divorce and Low Household Dysfunction* class exhibits greater internalizing symptoms than externalizing symptoms (62.16 vs 56.81), and the *Family Interpersonal Victimization with Extreme Household Dysfunction* experiences greater internalizing symptoms than externalizing symptoms (61.72 vs. 58.91). These findings suggest that regardless of traumatic experience profile, participants are more likely to report experiencing internalizing symptoms than externalizing symptoms. As the sample consists of Latinx adolescents, and documenting externalizing symptoms of marginalized youth has contributed to juvenile justice involvement for these youth (Mizock & Harkins, 2011), it is possible that youth are underreporting these symptoms as they may have faced repercussions for doing so in the past. Alternatively, it is possible that traumatic experiences are associated more so with internalizing symptomology than externalizing symptomology. Taken together, these findings lend credence to calls for research into the operationalization of ACEs and the heterogeneity of ACEs (Lanier et al., 2018).

Limitations

Although this dissertation offers significant contributions to the extant literature, limitations exist. First, methodological limitations must be discussed. As stated in Chapter Three, limited recommendations regarding sample size and indicators exist. Some research suggests that incorporating a large number of indicators, if they are of high quality, can actually compensate for small sample sizes (Wurpts & Geiser, 2014), suggesting that

researchers may want to increase the number of indicators used when their sample sizes are small. However, Wurpts and Geisre refer to a large number of indicators as 12, and the present study incorporates *nineteen* indicators. To use 19 indicators is not unprecedented; some examples of studies with greater than 19 indicators include 20 indicators and a sample size of 1,293 (Yeşilyaprak & Boysan, 2014), 23 indicators and a sample size of 1,073 (Agasisti et al., 2019), 20 indicators and a sample size of 2,513 (Diamond et al., 2017), and 20 indicators and a sample size of 432 (Armour et al., 2014).

Further, simulations by Nylund, Asparouhov and Muthén (2007) found that with 15 indicators, a sample size of 200, and a 3-class solution, some fit statistics still identified the correct model 100% of the time. Interestingly, a primary concern with small sample sizes is that models will not generate enough statistical power to detect differences or meaningful classes; although the sample size of the present dissertation is small, fit statistics were able to converge upon a 3-class solution, with some fit statistics even suggesting a solution larger than three classes. Despite this, simulations by Asparouhov and Muthen (2010) suggest that a large number of indicators, paired with small sample sizes, can yield biased estimates. Thus, it is possible that classes may shift if this study is replicated with a larger sample of Latinx help-seeking adolescents.

Although a limitation, it may be necessary to stretch the bounds of LCA to do research on hard-to-reach groups. For example, Grasso et al. (2013) utilized 26 indicators of child maltreatment perpetrated by parents in a sample of 195 youth with parents in the Navy. Similar to the present dissertation, models were able to converge, and a three-class solution emerged as the best-fitting model to the data. Extensive methodological research is required

in this area to provide guidance to applied researchers. More research can be conducted with large samples in an attempt to confirm the three-class solution found in this study, find a three-class solution of different ACEs, or determine if there is a larger *k*-class solution that better fits the data (Finch & Bronk, 2011).

Other limitations in this study are related to race and ethnicity. First, for parsimony, the study considers race and ethnicity to be equivocal terms, which is an oversimplification of the constructs. Second, the study focuses on a broad Latinx population, and racial and ethnic groups are not a monolith. Within the Latinx population exist individuals with ancestry hailing from Latin American, South American, Caribbean, and Central American descent. There is also diversity in the phenotype of Latinx individuals, with some Latinx individuals identifying as having White skin and others identifying as Black. Different cultural norms and experiences exist within different Latinx peoples; future research should examine typologies of ACEs within distinct Latinx groups.

Alternatively, another limitation to this study is that it examined *only* individuals of Latinx identity. Although focusing only on a Latinx population is a strength in that this focus helps to reduce the influence of confounding variables (i.e., racial and ethnic differences) on the latent class analysis, this strategy also has a distinct disadvantage.

As a result of focusing only on a Latinx population, it is unclear whether the three-class solution found, and the association of auxiliary variables to the three-class solution, is generalizable to youth identifying as non-Latinx. Future research should incorporate larger samples of diverse youth of varying ethnicities to investigate the extent to which ACEs constellations exist in treatment-seeking youth, and the extent to which these constellations

might predict symptom presentation. Interestingly, experiences that would be specific to a Latinx population, like deportation, were not endorsed frequently; thus, it may be that these classes are influenced more by a variable other than race/ethnicity.

There are also limitations of the study related to the nature of the data. First, data are cross-sectional. Secondly, ACEs are collected retrospectively, and the data is reported from the youth themselves. Although there is some temporal precedence, in that youth are reflecting back on adverse childhood experiences that occurred before their intakes, the study is not truly longitudinal. As a result, it is inappropriate to make claims about causality. It is possible that the symptoms reported at intake preceded the adverse childhood experiences reported. Future research should collect data on adverse childhood experiences at one time point and compare it to psychological symptoms collected at later time points (e.g., collecting ACEs data in elementary school and psychological symptom data in high school).

Secondly, ACEs in this study were collected retrospectively. There is not a unified methodological recommendation for ACEs collection. Some studies have reported that prospectively collecting ACEs by surveying adults working with children at various time points throughout childhood may be more reliable than an adult, or late adolescent, retrospectively recalling their own ACEs (Reuben et al., 2016). Meanwhile, Newbury et al. (2018) found that adults retrospectively recalling their own ACEs was a stronger predictor of later psychopathology than the prospective reports by caregivers and staff in the children's lives. One meta-analysis argues that these methods are not interchangeable, but rather, different techniques used to capture entirely different populations of people (Baldwin et al., 2019). Therefore, like using a person-centered analysis over a variable-centered analysis, one

method of ACEs data collection (i.e., retrospective or prospective) is not superior to another, rather, the use of one technique over the other requires a researcher to reflect on the limitations and benefits of each. Although there are benefits to collecting ACEs data utilizing a retrospective self-report from adolescents, one cannot ignore the possible influence of social desirability, or memory, particularly in a population impacted by trauma, which is known to have neurobiological impacts on brain structures and memory.

Additionally, a limitation of this study relates to gender identity and sexual orientation. Youth who identify as sexual minorities have demonstrated higher prevalence rates of post-traumatic stress disorder; this can be explained by early and often traumatic exposures and more frequent exposure to assault (Roberts et al., 2010). Youth identifying as LGBT, particularly transgender youth, also experience greater rates of suicidal ideation (Huebner et al. 2015; Reisner et al. 2015). Some researchers posit that earlier and more frequent exposures to traumatic events experienced by LGBT individuals is the explanatory mechanism behind the relation of LGBT identity and increased suicidal ideation and attempt (Yadegarfard et al., 2014). Given that one of the classes endorses a pattern of responses that suggest they are discriminated against, bullied, and victimized for a reason other than race (the *Interpersonal Victimization with High Community Violence and Low Household Dysfunction* class), it would have been helpful to understand the LGBT identities of participants. Previous research has documented an association between LGBT identity and child maltreatment in Latin American refugee/asylum-seeking populations (Alessi et al., 2016); as this sample consists of Latinx youth, and some report their parents have been deported, it is possible that there are also asylum-seeking youth in this sample that may be

particularly at risk due to gender identity or sexual orientation. Because of this, collecting information on gender identity and sexual orientation is desperately critical needed.

Finally, a large limitation of this study is the study's emphasis on risks and deficits, rather than incorporating a framework of resilience and strengths-based constructs. There is a risk of discussing adverse childhood experiences in only a negative light, which discounts the association between childhood adversity and post-traumatic growth (Dykes, 2016). Although the dissertation does shed some light into constellations of adverse childhood experiences that might lead to *less* pathology, like the *Healthy Interpersonal Relationships with Divorce and Low Household Dysfunction*, it fails to examine the association between classes and resilient outcomes, like socioemotional health and thriving. Further, when focusing only on risks in a Latinx youth population, there is a danger of over pathologizing or over criminalizing the population. Youth are more than their trauma, but research by predominantly White researchers conducted with Latinx samples may present a hopeless picture that Latinx youth themselves or even lawmakers might internalize, which could lead to hopelessness and reduced funding for prevention and intervention in these communities.

Study Contributions

In addition to limitations, this study demonstrates many strengths. Although one limitation of the study is that it is using retrospective, self-report data from adolescents, this is *also* a strength of the study. The original ACEs research conducted by Felitti and colleagues used retrospective data from adults. Following this tradition, many studies have collected ACEs data using adult samples to predict adult outcomes (Crandall et al., 2019). However, collecting ACEs data in adulthood limits the ability to prevent the toxic stress that

occurs throughout youth as a result of ACEs. One strength of utilizing data collected in adolescence is that prevention and intervention efforts for the aftermath of psychological trauma can be created and delivered sooner. Further, data collected in adolescence, from the adolescents themselves, may be more representative of the immediate adolescent experience so that intervention efforts based on the data are more accurate to the youth's self-reported perspective and experience.

In addition to using data from adolescents, using self-report data may also be a strength. In addition to allowing us to see the impact of ACEs in real-time on a population of youth, as opposed to adults, there is some evidence suggesting that adolescent self-report data on maltreatment is just as accurate, if not better, than parent-report or CPS-reported data. Child maltreatment is a somewhat subjective term, and as a result, many forms of maltreatment are unintentionally overlooked by child welfare workers (Hambrick et al., 2014). In addition to the fact that many cases of maltreatment may not rise to the attention of CWS/CPS, there is also the fact that a person's perception of a traumatic incident might be more predictive of the influence of the event than an outside observer's definition of it (Butaney et al., 2011). Similar to the measurement of youth gang involvement (Decker et al., 2014), the use of data from local and federal agencies, as opposed to self-report data, to measure child maltreatment has possibly resulted in biased results, resulting in an underestimation of the true magnitude of child maltreatment (Sedlack et al., 2010; Shenk et al., 2016).

Other studies comparing parent-report to child-report data have also suggested there is bias in parent reporting. Abate et al. (2018) suggests that for older youth, like adolescents,

parent report may not adequately capture experiences like depression, anxiety, and distress. Similarly, in a recent study of the influence of concussions on fatigue, Gerst et al. (2019) found that parents were not adept at noticing the influence of variables occurring outside the home, like fatigue in the school setting. Thus, parents might be aware of the home and family ACEs but may not be aware of teen dating violence or bullying ACEs they experience. Further, if a parent is perpetrator, and treatment isn't mandated, this parent may severely underreport maltreatment to keep their family intact. Therefore, there are advantages and disadvantages to utilizing any form of data, which must be weighed in light of the research question. The best methodology would be to incorporate a multi-informant system of data collection (e.g., teachers, neighbors, parents, youth, child welfare, probation). However, this is often unrealistic; thus, for the purpose of this study, the use of adolescent self-report was selected due to the relation between self-appraisal of traumatic experiences and self-report of psychiatric distress (Barlow et al., 2017).

An additional strength of this study is the study's methodological contribution to the discussion of a unified definition of ACEs. There are documented difficulties in measuring and conceptualizing child maltreatment (Gabrielli et al., 2017). It has been proposed that measuring type, severity, and frequency/chronicity can help unify the conceptualization of maltreatment. A strength of this study is its contribution to the literature by examining different types of child maltreatment and traumatic experiences, how they cluster together, and how they differentially predict deleterious outcomes like internalizing or externalizing symptoms. An additional way this study contributes to the issue of defining ACEs is that it shows the importance of using scales in their entirety. There are calls for using expanded

measures of ACEs to better capture the realities that contemporary youth face (Afifi, 2020; McEwen et al., 2019). For example, bullying is a severe and extreme form of traumatic experience that is closely linked to suicide (Vergara et al., 2019), which is excluded in most studies of ACEs. Utilizing focus groups and discussions with stakeholders, many researchers have created expanded ACEs items that are consistently suggested for use (Finkelhor et al., 2015). Currently, the definition of ACEs using only original ACEs items are create prevention and intervention efforts from an individualistic perspective. These ACEs only measure household challenges and family violence. As a result, it turns the discussion of ACEs prevention and intervention in to one of an individualized responsibility, where the focus is on the isolated family unit. This individualistic emphasis perpetrated by using only the ten original ACEs precludes wide, systems-based movements that might better help prevent and intervene for ACEs.

An additional strength of the study is that it answers calls for research on ACEs in non-White, socioeconomically disadvantaged communities. The present sample is collected from a community mental health agency in which all clients either receive public assistance to pay for services, or, have services covered by private grants; thus, clients do not pay for any of the treatment. The sample was further reduced to only focus on Latinx adolescents. Currently, one limitation in the ACEs literature is that the original sample is largely unrepresentative (McEwen et al., 2019). Although large, the original ACEs sample consists of well-educated, medium-to-high income, insured, White participants (Felitti et al., 1998). The ACEs discovered and documented in the original study may not be as relevant to a Latinx in the 21st century, as community violence and discrimination are traumatic

experiences that are frequently implicated in adverse health outcomes (Wade et al., 2014), but are not included in the traditional measure of ACEs. In the present study, community-based ACEs were endorsed more frequently and appeared to be most predictive of both internalizing and externalizing symptoms, above and beyond familial challenges and abuse, further highlighting the importance of formally incorporating these items into a definition of ACEs.

Finally, a strength of this study is both the use of a clinical sample and the application of higher-level statistics within this specific sample. Structural equation modeling, particularly with latent variables, use a number of degrees of freedom, often requiring large sample sizes for model convergence; as a result, this type of higher-level statistical modeling is often conducted with large, national samples. A strength of this dissertation is that it used person-centered design to study childhood trauma with an overlooked and underserved population that is particularly vulnerable to its impact. More samples need to consist of who underrepresented, help-seeking populations. Our most vulnerable clients may not actually be represented in these large datasets of thousands of people. We, as researchers, tend to consider those with highly prevalent ACEs as outliers in the data, and erasing them from study. From a public health perspective, it is critical to study ACEs on a national scale to provide the most generalizable findings possible. However, when wanting to gain insight into treatment planning, symptoms, and therapeutic outcomes, using these large, national samples may not be ideal. Although it presents a sample size issue, future research specifically should focus on samples of youth seeking treatment for trauma, to learn how their trauma may influence their symptoms and treatment, to maximize the benefits of their service use.

Implications and Future Directions

Implications for researchers include a continuing discussion of cumulative risk frameworks compared to frameworks examining the constellations of ACEs. A wealth of literature has advocated for the utility of the cumulative risk approach at the expense of an approach acknowledging interactions; this dissertation provides evidence to counter that practice. This dissertation does acknowledge the long history and utility of the cumulative risk approach, and at the same time, contributes evidence to a growing body of literature suggesting that some interactions of ACEs are more predictive of deleterious outcomes than the sheer cumulative amount of ACEs (Lanier et al., 2018), at least within a population of adolescents seeking community-based therapeutic services. Future research should continue exploring constellations of childhood trauma to create targeted prevention and intervention efforts specific to various classes and profiles of experiences.

Additionally, future research should continue to strive toward a unified definition of ACEs. Like the debate regarding cumulative risk and interaction frameworks, there is still an ongoing discussion of how to operationalize ACEs. This study showed that the expanded ACEs are important to study- particularly bullying, discrimination, and community violence. Alternatively, when expanding ACEs, there is a risk of incorporating every negatively-valanced occurrence that someone can possibly experience as an "ACE". Additionally, some experiences that are extremely traumatic are left out of the commonly-used expanded ACEs- for example, natural disasters (Felix et al., 2019), terrorist events and mass shootings (Felix et al., 2020), and global pandemics (Whaling et al., under review). One strategy to remedy this may be to collect data on as many ACEs as possible. If some ACEs are not predictive of

adverse or deleterious outcomes, these items can be deleted for a lack of predictive utility and validity. This does not mean that these adversities are not traumatic, but simply that they might not belong in the "ACEs science" framework.

There are also some implications for research regarding measuring the association between childhood and adolescent ACEs and adolescent mental health. The results of the 3-step LCA regressing symptoms on classes show that classes differentially predict both the strength and type of symptoms displayed. Within-class, all classes demonstrate greater internalizing symptoms than externalizing symptoms. Because more boys were placed into the healthy interpersonal relationship class, future research should also focus on the association between gender, ACEs classes, and psychological symptoms.

Finally, more resilience research is needed within the "ACEs science" framework. This study examines the relationship between latent classes of ACEs and internalizing and externalizing symptoms, but does not examine how these classes might actually predict *positive* outcomes, representing post-traumatic growth. Further, research could also examine variables associated with positive outcomes and resilience as moderators to investigate how protective factors may buffer the relationship between ACEs class membership and symptom presentation and development. Related to moderating models, there is emerging structural equation research using latent classes as moderators; future studies should work to confirm class sizes and descriptions, and then use these classes as moderating variables.

Practical Implications

This study highlights importance of shifting trauma research to a collaborative and reciprocal approach between universities and communities. Community agencies typically do

not have the resources or time available to do ACEs research, but with expanded resources provided by a university partnership, agencies can learn valuable information about the clients that they serve. This can also help the scientific community at large, as the field benefits from having insight into help-seeking populations. Additionally, a benefit of the community agency informing research questions highlights the importance of shared power and participation in studying trauma. Disenfranchised communities must have control over their own lives and their expertise should be recognized. Future research should work to incorporate qualitative methods and participatory methods, while finding ways to safely and non-exploitatively involve families experiencing trauma into this work.

Practice. As with research, there are important implications for practitioners (e.g., mental health professionals and teachers). One implication is related to the efficiency and speed of assessment. Although inventories and self-report surveys cannot replace a thorough assessment procedure, clinicians working with community agencies are often required to diagnose within twenty-four hours due to insurance policies and procedures. Being able to delineate clients into classes depending upon the ACEs they self-report experiencing can be helpful due to the relation between latent classes and symptoms, and can help triage clients and care. For example, if a client endorses a similar pattern of ACEs to the *Healthy Interpersonal Relationships with Divorce and Low Household Dysfunction*, this client may not be as at-risk for pathology as someone in either of the *interpersonal victimization* classes.

In addition to triage and assessment, knowledge of latent classes of ACEs can aid in efficient and targeted treatment planning. Currently, practitioners are collecting ACEs data and utilizing a cumulative risk approach to determine the treatment needs of clients.

However, in line with other research, this study shows that some groups may be at a risk of different types of symptoms than others or different severity unrelated to the amount of ACEs they endorse. Various constellations of ACEs youth endorse may indicate different treatment strategies.

There are also practice implications for educators. Students spend the majority of their time outside of the home in schools. This study contributes to the literature by showing that in a sample of treatment-seeking Latinx adolescents, bullying, teen dating violence, and discrimination is prevalent. This study showed the extent of the prevalence of this trauma, and that it occurs at a young age. Because many of these traumatic experiences occur within a school context, there is a need for trauma-informed educational systems; trauma-informed systems not only benefit teachers working with trauma-impacted youth, but also help mitigate burnout and increase wellness in staff (Sullivan et al., 2014).

It is well documented that experiencing child and adolescent adversity is related to deficits in emotion regulation and impulse control, brain structure development, and hormonal and endocrine system responses (van der Kolk, 2003). All of these developmental features are needed to function in a traditional school environment. Currently, practitioners are seing Latinx youth coming to school with trauma, trauma severely impacting neurological systems required to succeed in school, and teachers who are not supported by a trauma-informed school system. This could lead to adverse consequences, like juvenile justice involvement (Whaling & Sharkey, 2019).

Implications of this study in particular show that Latinx youth seeking therapeutic support at a community-based agency are experiencing major disruptions in interpersonal

relationships, whether with their parents or with peers. Individuals in the *Interpersonal Victimization with High Community Violence and Low Household Dysfunction* class demonstrated more severe psychological symptoms than individuals in a class where they were abused by someone inside their home, clearly demonstrating how critical relationships *outside* the home are for adolescents. Safe relationships with teachers may serve as a model for how adult should treat them, as well as serve as a corrective adult relationship. However, this is a lot of responsibility to place on individual teachers. For trauma-informed education to be successful, it must be implemented on a school-wide level (Oehlberg, 2008), impacting not just any individual teacher's behavior, but school-wide policies and practices at an administrative level.

Policy and law implications. This study illuminates the importance of an expanded and broad definition of ACEs. Currently, on macrosystem levels, national attention is directed toward "child abuse" and "child maltreatment" when discussing adverse childhood experiences. However, the findings from this study suggest that community violence and bullying, particularly when paired with traditional measures of family adversity, severely influence mental health outcomes. These findings have important implications for the division of financial resources for prevention and intervention. For example, the findings suggest that individuals victimized outside the home face unique risks for the development of pathology above and beyond individuals victimized primarily by family members. This suggests the importance of neighborhood, school, and community strength and cohesiveness on reversing the influence of toxic stress and complex trauma for Latinx adolescents. Prior research suggests that allocating funding to public housing authorities (PHAs) for the explicit

purpose of reducing childhood adversity is one example of how policy-level changes can begin mitigating the impacts of ACEs (Barrera, Kelley, & Arantani, 2017). Previous examples of policy-level changes include California's emphasis on and funding for universal screening for ACEs in publicly insured populations (Enos, 2019).

Conclusion

In 2016, 4.1 million child maltreatment reports were made in the United States (USDHHS, 2018). The study of childhood adversity has come a long way since the groundbreaking 1998 Felitti et al. study. With recent calls for the acknowledgment of expanded ACEs, using clinical samples, examining ACEs in diverse populations, and using person-centered analysis instead of variable-centered analysis to move beyond a cumulative risk framework has opened up novel research opportunities. The chronic stress experienced by these youth is devastating, leaving them at risk for a number of deleterious mental and physical health outcomes (Osório et al., 2017). There must be a global shift toward the understanding of ACEs, and beyond this, into understanding *how* we help youth and families experiencing ACEs after collecting these data from them (Finkelhor, 2017). These findings contribute to the pre-existing literature suggesting that the way that traumatic experiences intersect with one another might have differential and clinically significant impacts on psychological functioning. The field of ACEs science has advanced greatly in the last few decades, and there is still much research to be done.

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Appendix A. Original ACEs Survey (Felitti et al., 1998)

Prior to your 18th birthday:

1. Did a parent or other adult in the household often or very often… Swear at you, insult you, put you down, or humiliate you? or Act in a way that made you afraid that you might be physically hurt?
   No___If Yes, enter 1 __
2. Did a parent or other adult in the household often or very often… Push, grab, slap, or throw something at you? or Ever hit you so hard that you had marks or were injured?
   No___If Yes, enter 1 __
3. Did an adult or person at least 5 years older than you ever… Touch or fondle you or have you touch their body in a sexual way? or Attempt or actually have oral, anal, or vaginal intercourse with you?
   No___If Yes, enter 1 __
4. Did you often or very often feel that … No one in your family loved you or thought you were important or special? or Your family didn't look out for each other, feel close to each other, or support each other?
   No___If Yes, enter 1 __
5. Did you often or very often feel that … You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you? or Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?
   No___If Yes, enter 1 __
6. Were your parents ever separated or divorced?
   No___If Yes, enter 1 __
7. Was your mother or stepmother:
   Often or very often pushed, grabbed, slapped, or had something thrown at her? or Sometimes, often, or very often kicked, bitten, hit with a fist, or hit with something hard? or Ever repeatedly hit over at least a few minutes or threatened with a gun or knife?
   No___If Yes, enter 1 __
8. Did you live with anyone who was a problem drinker or alcoholic, or who used street drugs?
   No___If Yes, enter 1 __
9. Was a household member depressed or mentally ill, or did a household member attempt suicide? No___If Yes, enter 1 __
10. Did a household member go to prison?
    No___If Yes, enter 1 __

Now add up your "Yes" answers: _ This is your ACE Score

Appendix B. Demographic Questionnaire

Client Information – Children **Staff:** **Date:**

Name* _____ **DOB*** _____

Address* _____ **City*** _____ **Zip***

Home Phone _____ OK to say CALM is calling/leave message? **Yes / No**

Cell _____ OK to say CALM is calling/leave message? **Yes / No**

Work **Ext** OK to say CALM is calling/leave message? **Yes / No**

Services requested for (check all that apply)*

- ☐ *Developmental education/support*
- ☐ *Positive parenting practices*
- ☐ *Treatment to support healing*
- ☐ *Individual/couples/treatment or support groups for parents*

Abuse Exposure*

- ☐ None
- ☐ Physical Abuse
- ☐ Domestic Violence
- ☐ Sexual Abuse
- ☐ Sexual Exploitation
- ☐ Child Abduction
- ☐ School/Community Violence
- ☐ Neglect
- ☐ Abandonment
- ☐ Parental Substance Abuse/Endangering Lifestyle
- ☐ Emotional Abuse
- ☐ Other Trauma

Child Abuse/Police Reports ☐ None

Date	Responding Agency	Report #	Incident Type	Location

Referral Information*

Referral made by _____ **Relationship to client** _____ ☐ Client is self-referred

Agency _____ **Phone** _____ **Fax** _____

Is client mandated to participate? **Yes / No** **CWS Path** ☐1 ☐2 ☐3

Family Composition (check one)*

Single Parent Household	Two-Parent Household
☐ Single Biological-Parent Household	☐ Two Biological-Parent Household
	☐ Biological-Parent & Step-Parent/Partner
☐ Single Parent (Adoption by Family Member)	☐ Two Parent (Adoption by Family Member)
☐ Single Parent (Adoption)	☐ Two Parent (Adoption)
☐ Single Parent Foster Home (Care by Family Members)	☐ Two-Parent Foster Home (Care by Family Members)
	☐ Two-Parent Foster Home(Unrelated Caregivers)
☐ Single Parent Informal Care (by Family Members)	☐ Two Parent Informal Care (by Family Members)

Marital Status (of client's birth or adoptive parents)*

Eligibility/Custody Information

Custody/visitation*

Please indicate (by number) which caregivers on page 2 have legal custody of client:
Caregiver # __ Relationship _____ Caregiver # __ Relationship _____

Please indicate (by number) which caregivers on page 2 have primary physical custody:
Caregiver # __ Relationship _____ Caregiver # __ Relationship _____

☐ This child is currently a ward of the court (WIC 300)

Please indicate by number which caregivers on page 2 have court ordered supervised visitation, or no contact:
Caregiver # __ Relationship _____ Specify contact _____
Caregiver # __ Relationship _____ Specify contact _____

Is custody currently being disputed (circle)? Yes / No / Not applicable

Are biological parents currently in the process of parental reunification through CWS? Yes / No / Not applicable

Custody Order

If parents were never married, is the father's name on the birth certificate? **Yes / No**
If NO, was a paternity judgment issued? **Yes / No**
Was a custody order issued? **Yes/No**
Does the custody order or paternity judgment state that both parents must consent to treatment? **Yes/No**

Demographic/Registration Information

Sex ☐M ☐F ☐T ☐I **Language(s)** ☐ English ☐ Spanish ☐ Both
Preferred Language ☐ English ☐ Spanish ☐ Both

Ethnicity ☐ African Am ☐ Anglo ☐ Latino ☐ Mixteco ☐ Native American ☐ Pacific Islander ☐ Chinese ☐ Filipino ☐ Hmong ☐ Japanese ☐ Korean ☐ Multiple ☐ Other

Disabilities*

- ☐ None
- ☐ Unknown
- ☐ Severe Visual Impairment
- ☐ Severe Hearing Impairment
- ☐ Speech Impairment
- ☐ Learning Disabled
- ☐ Physical Impairment/Mobility Problem
- ☐ Other Physical Impairment
- ☐ Developmentally Disabled/Cognitive Impairment

Education Information

School* _____ **Grade*** _____ **Teacher** _____

Does child have an IEP?* **Yes / No**

Insurance Information

Social Security #

Medical/Insurance # _____ **Group Number** _____

Victim-Witness Claim #

Appendix C. Expanded ACEs Survey

Many people experience stressful life events that can affect their health and wellbeing. The results from this questionnaire will assist your provider in assessing their health and determining guidance. Please read the statements below, and **check if you have experienced any of the following at** *any point during your childhood or teens...*

Separation from caregivers

- ☐ Your parents or guardians were separated or divorced
- ☐ You have lived with a parent or guardian who died
- ☐ You have been in foster care
- ☐ You have been separated from your primary caregiver through deportation or immigration

Family Problems

- ☐ You lived with someone who had a problem with drinking or using drugs
- ☐ You lived with a household member who served time in jail or prison
- ☐ You lived with a household member who was depressed, mentally ill or attempted suicide

Trauma exposure

- ☐ A household member swore at, insulted, humiliated, or put you down in a way that scared you OR a household member acted in a way that made you afraid that you might be physically hurt
- ☐ Someone pushed, grabbed, slapped or threw something at you OR you were hit so hard that you were injured or had marks
- ☐ You saw or heard household members hurt or threaten to hurt each other
- ☐ Someone touched your private parts or asked you to touch their private parts in a sexual way that was unwanted, against your will, or made you feel uncomfortable
- ☐ You have often seen or heard violence in the neighborhood or in your school
- ☐ You have often been treated badly because of race, sexual orientation, place of birth, disability or religion
- ☐ You have experienced harassment or bullying at school

Other

- ☐ You have had a serious medical procedure or life threatening illness
- ☐ Your mother used illegal drugs or alcohol before you were born
- ☐ More than once, you went without food, clothing, a place to live, or had no one to protect you
- ☐ You often felt unsupported, unloved and/or unprotected, felt that no one in your family thought you were important or special, or felt that your family didn't look out for each other or feel close to each other.

Check if you have experienced any of the following at *any point during your teens or adulthood...*

- ☐ You have been detained, arrested or incarcerated
- ☐ You have experienced verbal or physical abuse or threats from a romantic partner (i.e. boyfriend/girlfriend, spouse, etc.)

Adapted from the ***CYW Adverse Childhood Experiences Questionnaire (ACE-Q), 2015***

Tables and Figures

Table 1
Descriptive Statistic Comparison Table

		% Overall Sample	% Final Sample
Location	Carpinteria	0.90	3.60
	Lompoc	8.70	3.60
	Santa Barbara	33.50	35.80
	Santa Maria	16.90	13.10
Grade	Pre-K & Kinder or None	43.20	1.50
	1st - 5th	21.90	0.00
	6th - 8th	10.80	31.40
	9th - 12th	9.90	64.90
	Some College	0.20	0.00
	Unknown	0.50	1.50
IEP	Yes	8.40	16.80
	No	78.10	83.20
Age	0 - 5	48.70	0.00
	6 - 11	23.50	0.00
	12 - 17	15.00	100.00
	18 - 25	0.22	0.00
	26 - 71	11.00	0.00
Gender	Male	49.00	34.30
	Female	50.80	65.70
	Intersex	0.10	0.00
Ethnicity	African American	2.00	0.00
	Anglo	21.40	0.00
	Chinese	0.20	0.00
	Filipinx	0.30	0.00
	Latinx	70.30	100.00
	Mixtecx	0.40	0.00
	Multiple	4.70	0.00
	Native American/Alaskan Native	0.30	0.00
Primary Language	English	71.10	67.90
	Spanish	28.70	32.10

Table 2
ACEs Prevalence Rate Comparison Table

	% Overall Sample	% Final Sample
Bullying	15.70	32.10
Community Violence	11.60	30.70
Discrimination	4.40	10.90
Divorce	55.60	60.60
Domestic Violence	32.50	43.10
Emotional Abuse	33.10	40.10
Emotional Neglect	17.60	29.90
Family Member w/ Mental Illness	31.60	23.40
Family Member Incarcerated	27.60	36.50
Family Member w/ Substance Abuse	43.20	43.10
Foster Care Placement	13.70	9.50
Death of Guardian	5.80	10.90
Medical Illness	5.90	3.60
Physical Abuse	18.70	27.00
Physical Neglect	10.10	8.00
Prenatal Exposure to Substances	10.60	10.20
Separation due to Immigration	4.40	13.10
Sexual Abuse	11.90	36.30
Teen Domestic Violence Victim	5.30	6.60
Teen Incarcerated	4.20	13.10

Table 3
Fit statistics (AIC - cmP(K))

Model	LL	npar	AIC	CAIC	BIC	saBIC	LRTS	Adj LMR	Bootstrap	BF (K, K+1)	cmP(K)
1-class	-1534.61	19.00	3107.22	3185.46	3166.46	3106.31	–	–	–	5.75E-29	0.00
2-class	-1418.41	39.00	2914.81	**3075.41**	**3036.41**	2912.93	232.41	**0.00**	0.00	8.08E+05	**1.00**
3-class	-1380.83	59.00	**2879.65**	3122.62	3063.62	**2876.81**	75.16	0.35	0.00	**1.58E+29**	0.00
4-class	-1386.65	83.00	2939.29	3281.09	3198.09	2935.30	-11.64	0.47	0.00	2.68E+10	0.00
5-class	-1356.92	104.00	2921.84	3350.11	3246.11	2916.83	59.45	0.02	**0.00**	1.80E-08	0.00
6-class	-1300.70	119.00	2839.40	3329.44	3210.44	2833.67	112.44	0.60	0.12	4.31E+16	0.00
7-class	-1287.82	139.00	2853.65	3426.05	3287.05	2846.95	25.76	0.82	0.67	–	0.00

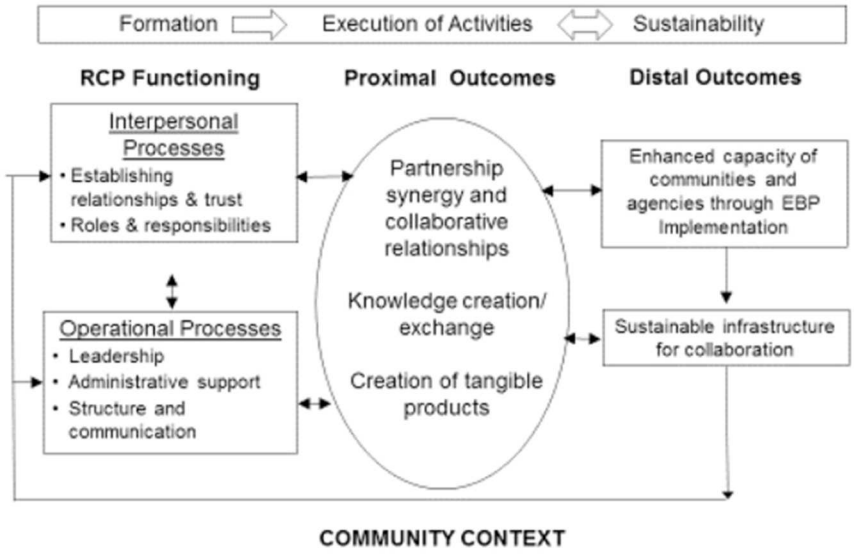

Figure 1. Community-academic partnership model, adapated from Brookman-Frazee, L., Stahmer, A., Stadnick, N., Chlebowski, C., Herschell, A., & Garland, A. F. (2016). Characterizing the use of research-community partnerships in studies of evidence-based interventions in children's community services. *Administration and Policy in Mental Health and Mental Health Services Research*, *43*(1), 93-104.

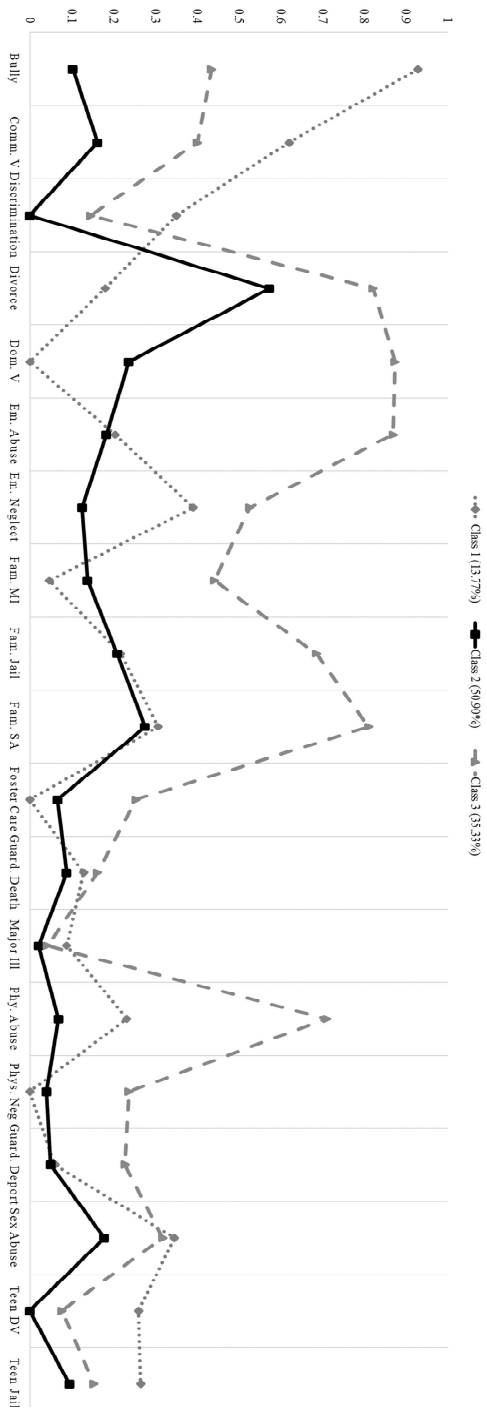

Figure 2. Conditional item probability plot of ACEs classes with class size

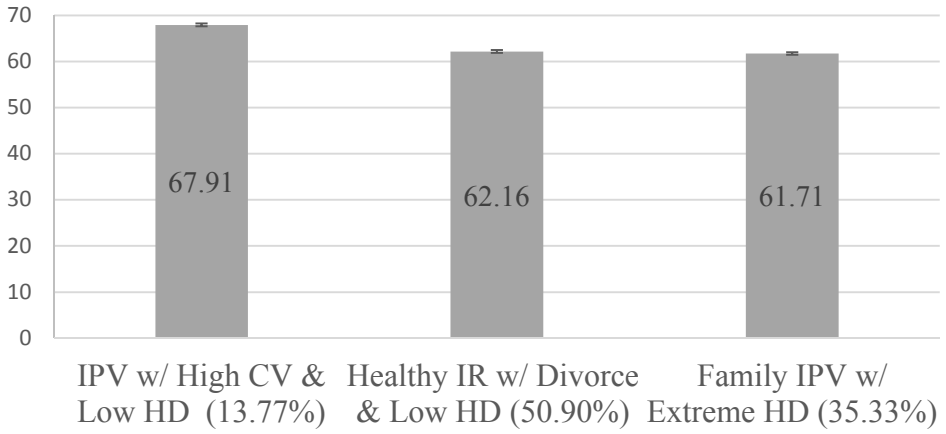

Figure 3. Step 3 of 3-step LCA predicting internalizing symptoms from class membership.

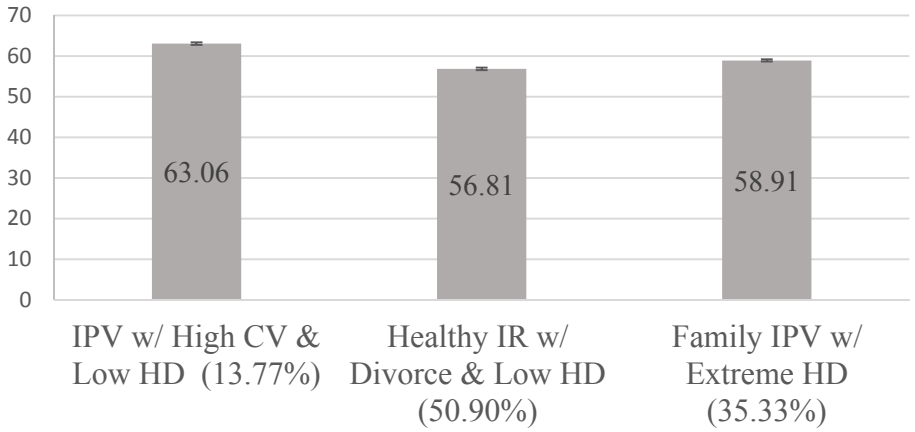

Figure 4. Step 3 of 3-step LCA predicting externalizing symptoms from class membership.