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## Exploring the relationship between adverse childhood experiences and suicidality in college and university students: a systematic review

Tatyana Aposhian  
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Pepperdine University  
Graduate School of Education and Psychology

EXPLORING THE RELATIONSHIP BETWEEN ADVERSE CHILDHOOD EXPERIENCES  
AND SUICIDALITY IN COLLEGE AND UNIVERSITY STUDENTS: A SYSTEMATIC  
REVIEW

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

by

Tatyana Aposhian

March, 2024

Stephanie Woo, Ph.D. – Dissertation Chairperson

This clinical dissertation, written by

Tatyana Aposhian

under the guidance of a Faculty Committee and approved by its members, has been submitted and accepted by the Graduate Faculty in partial fulfillment of the requirements for the degree of

DOCTOR OF PSYCHOLOGY

Doctoral Committee:

Stephanie Woo, PhD, Chairperson

Carrie Castaneda-Sound, PhD

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## DEDICATION

To my parents, grandparents, and ancestors – thank you for passing on your strength and wisdom. Achieving my dreams would not have been possible without you.

To anyone wondering whether their life is worth living or coping with the effects of childhood adversity – there is hope and healing. You matter and the world is a better place with you in it.

## ACKNOWLEDGEMENTS

My deepest gratitude and appreciation to my dissertation chair, Dr. Stephanie Woo – I am beyond grateful for all your guidance, support, encouragement, and wisdom. I have learned so much from you that I will carry throughout my career. A big thank you to my committee member, Dr. Carrie Castaneda Sound – thank you for sharing your passion of multicultural psychology, teaching, and mentorship. A big thank you to my mentors and professors who believed in me from the very start, challenged me to grow, provided never-ending guidance, and helped shaped me into the clinician I am today, Dr. Anat Cohen, Dr. Ani Khatchadourian, Dr. Tamara Eromo, Dr. Wendy Eifert, Dr. Miriam Barillas, Dr. Shelly Harrell, Dr. Natasha Thapar-Olmos – my journey would not have been the same without you. Many thanks to my research assistants, Christine Murphy, Kendall Bement, Alyssa Felsdine, Julia Gurzi, and Annelise Murillo – I am grateful for your time and dedication to this project. Additionally, an immense thank you to my family, partner, and friends for your unconditional support and love throughout my graduate school and dissertation journey.

## VITA

**EDUCATION**

---

**Doctor of Psychology, Clinical Psychology**

Expected April 2024

Pepperdine University

Specialty Tracks: Cognitive Behavioral Therapy and Multicultural/Community Interventions

Qualifying Clinical Competency Exam Passed: May 2022

Qualifying Assessment Competency Exam Passed: September 2022

Dissertation Proposed: February 22, 2022

Dissertation Defended: December 15, 2023

Dissertation Title: Exploring the Relationship Between Adverse Childhood Experiences (ACEs) and Suicidality in College and University Students: A Systematic Review

Dissertation Chairperson: Stephanie Woo, Ph.D.

**Master of Arts, Marriage and Family Therapy**

May 2020

University of Southern California

**Bachelor of Arts, Psychology and Sociology**

June 2018

University of California, Irvine

**PROFESSIONAL REGISTRATION**

---

Associate Marriage and Family Therapist: AMFT #119537

June 2020-present

**CLINICAL EXPERIENCE**

---

**USC COUNSELING AND MENTAL HEALTH**, Los Angeles, CA

August 2023-present

*Doctoral Psychology Intern**Primary Supervisor: Dr. Parissa Nili, PsyD**Delegated Supervisor: Dr. Yong Park, PhD*

- Provide individual psychotherapy to USC student population treating a variety of mental health diagnoses and symptoms, including depression, anxiety, trauma-related disorders, relationship issues, and LGBTQIA+ and racial identity concerns
- Conduct consultations and comprehensive intakes to assess appropriate fit for various services (e.g., short-term individual therapy, group therapy, and/or off-campus referrals)
- Provide crisis intervention and regularly conduct risk assessments during intakes and as needed in therapy sessions, same day initial appointments, as well as during triage shifts
- Provide single-session therapy and outreach ("*solution sessions*" and *Let's Talk*)
- Co-facilitate relationships process group (*Understanding Self and Others*) with intern team utilizing two-way mirror and live group supervision
- Serve as co-facilitator of *Surviving to Thriving after Unhealthy Relationships* semi-structured psychoeducation group for women and nonbinary identifying individuals who have experienced unhealthy relationship dynamics or intimate partner violence
- Provide weekly peer supervision to a practicum student with audio/video recording and participating in weekly group and individual supervision of supervision

- Organize and deliver outreach programming spanning a variety of topics, including but not limited to stress management, mental health awareness and resources
- Serve as liaison to *First-Generation Success Plus Center* and provide outreach, support, and community building opportunities for first-generation, undocumented, transfer, and former foster youth students at USC
- Create and implement administrative and social advocacy projects to advance the needs of the counseling center and student body at large
- Participate in weekly individual and group supervision, including *Diversity Dialogues*, supervision of supervision, video case conference, crisis supervision, supervision of group therapy, and staff and business meetings
- Attend and participate in weekly seminar trainings on various mental health topics (e.g., exposure and response prevention for OCD and anxiety disorders, crisis intervention, ethical and legal concerns, and working with diverse populations)
- Maintain up-to-date documentation through electronic medical record system, Point and Click

**USC COUNSELING AND MENTAL HEALTH**, Los Angeles, CA     August 2022-May 2023

*Doctoral Practicum Counselor*

*Primary Supervisor: Miriam Barillas, Psy.D.*

*Group Supervisor: Rudy Roman, LMFT, Ph.D.*

*Group Therapy Supervisors: Danielle Gonzalez, Psy.D., Michelle Dexter, Ph.D.*

- Provided individual, brief, evidence-based treatment to USC student population treating a variety of mental health diagnoses and symptoms, including depression, anxiety, trauma-related disorders, relationship issues, and LGBTQIA+ and racial identity concerns
- Provided single-session therapy and outreach (“solution sessions” and Let’s Talk)
- Co-facilitated DBT skills therapy group (*Effective Life Skills: Regulate, Communicate, Tolerate*) for students with eating disorders, body image issues, and high-risk behaviors and skills group for building self-compassion (*Mindful Self-Compassion*)
- Conducted consultations and intakes to assess appropriate fit for various services (e.g., short-term individual therapy, group therapy, and/or off-campus referrals)
- Provided crisis intervention and regularly conducted risk assessments during intakes and as needed in therapy sessions
- Participated in weekly group and individual supervision, as well as staff meetings
- Attended and participated in weekly seminar trainings on various mental health topics (e.g., short-term psychotherapy, diagnosis and assessment, psychiatric consultation, crisis intervention, ethical and legal concerns, working with diverse populations, and outreach)
- Utilized Point and Click electronic health record system to maintain up-to-date and accurate records

**MIND BLOSSOM CENTER**, Pasadena, CA

September 2021-June 2023

*(formerly Dr. Ani & Associates)*

*Neuropsychology Doctoral Practicum Trainee*

*Supervisor: Ani Khatchadourian, Psy.D.*

- Conducted comprehensive clinical interviews and neuropsychological assessments to inform diagnoses and tailored evidence-based recommendations for clients and families

- Administered, scored, and interpreted common intellectual, neuropsychological, academic, social-emotional, and behavioral measures to diverse children, adolescents, and young adults with neurodevelopmental disorders, emotional and behavioral issues, and other conditions that may impact cognitive, academic, and social functioning
- Wrote comprehensive integrated neuropsychological assessment reports
- Integrated neuropsychological and diagnostic information with clinical skills to provide effective testing feedback to clients and their families
- Provided individualized executive functioning skills training services to assist clients with skills related to organization, time management, planning
- Consulted with teachers, therapists, and psychiatrists to provide educational and treatment recommendations and to tailor treatment interventions

### **PEPPERDINE COMMUNITY COUNSELING CENTER**

September 2020-June 2023

Formerly in Encino, CA; Currently in Calabasas, CA

*Doctoral Trainee*

*Supervisors: Anat Cohen, Ph.D., Tamara Eromo, Psy.D.*

- Conducted biopsychosocial interviews, prepare comprehensive intake reports, and formulate individualized treatment plans unique to each client and their desired goals
- Provided short- and long-term individual and couples psychotherapy to adolescents and adults presenting with mood and anxiety disorders, crisis issues, trauma- and stressor-related disorders, identity development concerns, and relational stress
- Administered assessments targeting presence and severity of depressive and post-traumatic stress symptoms, common presenting concerns, and strength of the therapeutic alliance
- Participated in dyadic supervision with clinic director, group supervision with licensed psychologist, and individual peer consultation to increase understanding of client concerns, dynamics of therapeutic dyad, and overall case conceptualization
- Provided peer supervision to two first-year doctoral students
- Managed client charts and maintain up-to-date progress notes, intake summaries, and treatment summaries to ensure proper documentation of treatment interventions and adherence to ethical and legal standards
- Participated in community outreach and advocacy to provide psychoeducation, spread mental health awareness, and extend resources and referrals

### **LOS ANGELES JOB CORPS CENTER, Los Angeles, CA**

August 2021-July 2022

*Mental Health Practicum Intern*

*Supervisors: Kenneth Spears, Psy.D., Kandice Timmons, Psy.D., Angie Shenouda, Psy.D.*

- Provided individual psychotherapy to diverse transitional-aged youth (16-25) population presenting with mood and anxiety disorders, PTSD, ADHD, OCD, specific learning disorders, substance use disorders, and identity development and relational issues
- Co-facilitated a process and psychoeducational skills group to assist transitional-aged youth with navigation of creating healthy relationships
- Conducted weekly quarantine check-in calls to assess mental status, mood, and anxiety of students in quarantine and provided coping skills to promote wellness during isolation

- Conducted monthly phone calls to assess and monitor mental health of students who receive psychological services and offered appropriate support to maintain well-being
- Managed client charts and maintained up-to-date SOAP notes to ensure proper documentation of treatment interventions and adherence to ethical and legal standards
- Participated in weekly social engagement meetings to provide ideas and plan for outreach presentations and activities to share psychoeducation on various mental health topics, and to increase visibility of the mental health team at the residential training facility
- Created interactive social media posts to spread mental health awareness
- Consulted with multidisciplinary team, including psychiatrists, nurses, career counselors, and substance abuse counselors to obtain a holistic understanding of students' functioning and create individualized treatment plans
- Administered, scored, interpreted, and wrote integrated psychological assessment reports to assess for potential cognitive deficits, diagnostic impressions, psychological functioning, and to make treatment recommendations and provide feedback to students
- Created presentations to provide outreach on various topics, including suicide prevention, grief and loss, coping with the holidays, substance abuse prevention, and self-care
- Completed readings and participated in biweekly didactic seminars on various topics
- Participated in individual and group supervision to increase knowledge and skills of therapy and psychological assessment

**GLENDALE COMMUNITY COLLEGE, Glendale, CA**

September 2019-June 2020

*Marriage and Family Therapist Trainee*

*Supervisor: Crescent Orpelli, LMFT*

- Provided short-term individual psychotherapy and crisis intervention to a diverse college student population with a variety of presenting problems including depression, anxiety, PTSD, suicidality, grief, interpersonal difficulties, and identity development concerns
- Facilitated group therapy for first-generation college students to increase self-efficacy, cultural capital, and social support
- Co-facilitated virtual support groups in English and Armenian to promote connection and address stress and anxiety management during the COVID-19 pandemic
- Maintained progress notes for all clients to ensure proper documentation of session content and interventions

## **PROFESSIONAL EXPERIENCE**

---

**DR. ANI & ASSOCIATES, Pasadena, CA**

July 2020-September 2021

*Marriage and Family Therapist Associate*

*Supervisor: Ani Khatchadourian, Psy.D.*

- Provided individual therapy to adolescents and young adults integrating multicultural, cognitive-behavioral, psychodynamic, and mindfulness-based approaches
- Created and implemented individualized treatment plans addressing unique client needs
- Facilitated virtual group therapy for high school and first-time college students to process the challenges of distance learning and share coping tools to thrive during COVID-19
- Recorded and maintained progress notes for all client and group sessions

**DR. ANI & ASSOCIATES, Pasadena, CA**

August 2018-May 2021

*Clinical Assistant*

- Assisted with neuropsychological testing of children, adolescents, and young adults
- Scored and interpreted psychological assessments and standardized rating scales to assess for a range of neurodevelopmental disorders including ADHD, autism spectrum disorder, specific learning disorders as well as mood, anxiety, and trauma-related disorders
- Created data summary tables for patient test scores to assist with data analysis and neuropsychological report writing

**USC INSTITUTE OF ARMENIAN STUDIES, Los Angeles, CA**

August 2018-May 2020

*Research Associate*

- Transcribed oral history interviews of the Armenian diaspora sharing life stories
- Scanned significant oral history documents obtained for Digital Diaspora Project

**AMERICAN CAMPUS COMMUNITIES, Irvine, CA**

June 2017-June 2018

**PUERTA DEL SOL***Community Assistant*

- Developed and implemented programs promoting health and wellness, professional development, academic success, and financial literacy for the residential community
- Fostered personal and professional growth of residents through community programs and daily communication
- Mediated conflict and helped college residents create a respectful living community

**AUTISM LEARNING PARTNERS, Glendale, CA**

June 2016-September 2016

*ABA Direct Service Provider*

- Provided Applied Behavioral Analysis services to children on the autism spectrum
- Administered programs that test skills acquisition and address behavioral problems to better integrate youth into society
- Recorded observational and measurable data to track developmental progress over time

**SUPERVISORY EXPERIENCE**

---

**USC Counseling and Mental Health, Los Angeles, CA**

August 2023-present

*Peer Supervisor**Co-Supervisor: Miriam Barillas, Psy.D.*

- Provide one hour per week of peer supervision to a practicum student with video/audio recording
- Review supervisee's written documentation and provide constructive written and verbal feedback on intake documentation and clinical case notes, diagnoses, treatment planning, and case conceptualization
- Receive one hour per week of supervision of supervision discussing peer supervisory work with a licensed psychologist and intern colleagues
- Meet one hour per month with co-supervisor of practicum student to collaborate and provide feedback regarding areas of strength and growth for practicum student



**Pepperdine Community Counseling Center, Calabasas, CA**

September 2022-June 2023

*Peer Consultant*

*Supervisor: Anat Cohen, Ph.D.*

- Selected from a pool of qualified applicants by the Clinical Director to provide supervision, consultation, and mentorship to two first year PsyD practicum trainees for the 2022-2023 academic year
- Held weekly consultation sessions with trainees to support their development of clinical skills (e.g., intake report writing, diagnostic and case conceptualization, cultural integration, treatment planning, and clinical documentation)
- Reviewed supervisees' written documentation to provide constructive feedback on writing skills, case conceptualization, and diagnoses
- Attended weekly supervision for the purpose of enhancing supervision and consultation skills and addressing any consultee-related concerns
- Academic training/coursework: PSY 776 Clinical Supervision – *Edward Shafranske Ph.D. & Carol Falender, Ph.D.*, Pepperdine University, Fall 2022

### **Doctoral Dissertation**

July 2022-July 2023

Dissertation Title: Exploring the Relationship Between Adverse Childhood Experiences (ACEs) and Suicidality in College and University Students: A Systematic Review

Dissertation Chairperson: Stephanie Woo, Ph.D.

- Instruct research assistants on the systematic review dissertation process
- Prepare and assign tasks for research assistants enrolled in psychology M.A. programs
- Provide guidance and constructive feedback to research assistants throughout the completion of research tasks
- Provide mentorship and support to research assistants within their academic and career endeavors

## **TEACHING EXPERIENCE**

---

**University of Southern California, Los Angeles, CA**

Fall 2023

### **Guest Lecture Panel Member**

Theories in Counseling with Rudy Roman, Ph.D., LMFT

- Participated in two guest lecture teaching panels on trauma-informed care for first-year masters in marriage and family therapy students at USC

**University of Southern California, Los Angeles, CA**

Fall 2023

### **Guest Lecturer**

*Abnormal Psychology* with Parissa Nili, Psy.D.

- Taught undergraduate course on anxiety and trauma and stressor-related disorders, diagnosis, assessment, conceptualization, and evidence-based treatments

**Pepperdine University, Los Angeles, CA**

Fall 2022

### **Teaching Assistant – Doctor of Psychology in Clinical Psychology**

*Sociocultural Foundations of Behavior* with Shelly Harrell, Ph.D.

- Hold a weekly discussion group with first-year doctoral students to facilitate conversations about culture and diversity

- Review and grade weekly journals of students reflecting on themes related to cultural identity, diversity, and multiculturalism
- Review and provide constructive feedback on videotaped dyadic interviews of students practicing facilitation of diversity conversations
- Meet weekly with course professor and TA group to enhance teaching skills on diversity topics, debrief weekly small group discussions, and plan for course

**Pepperdine University, Los Angeles, CA**

Fall 2022

**Teaching Assistant – Doctor of Psychology in Clinical Psychology**

*Theories and Techniques of Cognitive Behavioral Therapies* with Natasha Thapar-Olmos, Ph.D.

- Review and grade weekly journals and assignments of students writing about the application of cognitive-behavioral therapies
- Provide constructive feedback and offer assistance to enhance students' understanding of course material and application of cognitive-behavioral therapies in clinical work

**Pepperdine University, Los Angeles, CA**

Spring 2022

**Teaching Assistant – Doctor of Psychology in Clinical Psychology**

*Personality Assessment* with Susan Himelstein, Ph.D.

- Graded student assignments and exams
- Met with and advised students on test administration and interpretation of results
- Provided feedback on assessment administration

## **RESEARCH EXPERIENCE**

---

**Doctoral Dissertation**

January 2021-present

Pepperdine University

*Dissertation Chairperson: Stephanie Woo, Ph.D.*

*Dissertation Defended: December 15, 2023*

- Title: Exploring the Relationship Between Adverse Childhood Experiences (ACEs) and Suicidality in College and University Students: A Systematic Review
- Completed and presented a dissertation proposal in which a thorough background and rationale was presented incorporating previous research, suggesting the significant clinical implications
- Developed an extensive search, screening, and synthesis plan delineating the process to identify and select relevant studies for inclusion
- Created a systematic and reproducible methodology to answer the proposed research questions
- Complete a comprehensive search on the relationship between adverse childhood experiences on suicidality among university students as well as university suicide prevention and intervention response
- Implemented a structured methodology to identify and select relevant studies, appraise the quality of the studies, and collect and analyze data from included studies
- Synthesized search information into a formal systematic review to present the relevant findings, gaps in the literature, and areas for further consideration

**Research Assistant – Memory and Development Lab**

March 2017–June 2018

University of California, Irvine – Department of Psychology and Social Behavior

*Principle Investigator: Angela Lukowski, Ph.D.*

Research Assistant to examine the relations among sleep, emotion, and cognition

- Created weekly lab schedule, assigned researchers to participants, and communicated with participants to reschedule appointments as needed
- Utilized Qualtrics software for online data collection and ensured participants completed every task
- Analyzed actigraph sleep data using Action-W Software
- Managed and organized all study files

Research Assistant to examine intergenerational transmission of narrative style in European-American and Chinese-American adults

- Engaged in data coding and data analysis
- Met with faculty mentor and graduate student on a weekly basis to discuss progress on data collection, coding, and analysis

**POSTER PRESENTATIONS**

---

**Aposhian, T.**, Burford, M., Levin, R., Matamoros, B. (2020, April) What Risk Factors are Associated with Suicide Attempts Among LGBTQ+ College Students? Poster presented at USC MFT Capstone Conference, Los Angeles, CA.

Kim, E. and **Aposhian, T.** (2018, May) Examining the Intergenerational Transmission of Narrative Style in European-American and Chinese-American Adults. Poster presented at UC Irvine Undergraduate Research Symposium, Irvine, CA.

**OUTREACH AND EDUCATION**

---

**Aposhian T.** (2023, November) *Befriending Perfectionism for Trojan Scholar Society*, University of Southern California, Los Angeles, CA

**Aposhian T.**, Newell, J. (2023, October) *College Mental Health and CMH Resources Overview*, University of Southern California, Los Angeles, CA

**Aposhian T.**, Wills, O. (2023, September) *USC Herman Ostrow School of Dentistry Resource Fair*, University of Southern California, Los Angeles, CA

**Aposhian T.**, Ensley, M. (2023, September) *Stress Management for USC Thornton School of Music Students*, University of Southern California, Los Angeles, CA

**Aposhian T.**, Newell, J. (2023, August) *USC School of Social Work Resource Fair*, University of Southern California, Los Angeles, CA

**Aposhian T.**, Barillas, M. (2023, April) *Healthy and Unhealthy Relationships*, University of Southern California First Generation Plus Success Center, Los Angeles, CA

Gonzalez, M., Aliga, F., **Aposhian, T.**, Arlauskas, A., Diaz, A., Mongold, S. (2022, July) *Symptoms of Mental Health Disorders*, Los Angeles Job Corps Center, Los Angeles, CA

Gonzalez, M., Aliga, F., **Aposhian, T.**, Arlauskas, A., Diaz, A., Mongold, S. (2022, July) *Mental Health Staff Training*, Los Angeles Job Corps Center, Los Angeles, CA

Gonzalez, M., Aliga, F., **Aposhian, T.**, Arlauskas, A., Diaz, A., Mongold, S. (2022, June) *Supporting the LGBTQ+ Community*, Los Angeles Job Corps Center, Los Angeles, CA

Gonzalez, M., Aliga, F., **Aposhian, T.**, Arlauskas, A., Diaz, A., Mongold, S. (2022, May) *May is Mental Health Awareness Month*, Los Angeles Job Corps Center, Los Angeles, CA

Gonzalez, M., Aliga, F., **Aposhian, T.**, Arlauskas, A., Diaz, A., Mongold, S. (2022, May) *Sleep Hygiene*, Los Angeles Job Corps Center, Los Angeles, CA

**Aposhian, T.**, Mongold, S. (2022, May) *Career Preparation Presentation*, Los Angeles Job Corps Center, Los Angeles, CA

Gonzalez, M., Shenouda, A., Aliga, F., **Aposhian, T.**, Arlauskas, A., Diaz, A., Mongold, S. (2022, April) *Sexual Assault Awareness and Prevention*, Los Angeles Job Corps Center, Los Angeles, CA

Gonzalez, M., Shenouda, A., Aliga, F., **Aposhian, T.**, Arlauskas, A., Diaz, A., Mongold, S. (2022, March) *Substance Abuse Prevention*, Los Angeles Job Corps Center, Los Angeles, CA

Gonzalez, M., Shenouda, A., Aliga, F., **Aposhian, T.**, Arlauskas, A., Diaz, A., Mongold, S. (2022, February) *Healthy vs. Unhealthy Relationships*, Los Angeles Job Corps Center, Los Angeles, CA

**Aposhian, T.** (2022, January) *Career Preparation Presentation*, Los Angeles Job Corps Center, Los Angeles, CA

Gonzalez, M., Shenouda, A., Aliga, F., **Aposhian, T.**, Arlauskas, A., Diaz, A., Mongold, S. (2022, January) *Self-Care*, Los Angeles Job Corps Center, Los Angeles, CA

Gonzalez, M., Shenouda, A., Aliga, F., **Aposhian, T.**, Arlauskas, A., Diaz, A., Mongold, S. (2022, January) *Why Do I Feel Like This? Pandemic Fatigue*, Los Angeles Job Corps Center, Los Angeles, CA

**Aposhian, T.**, Aliga, F. (2022, January) *Career Preparation Presentation*, Los Angeles Job Corps Center, Los Angeles, CA

Gonzalez, M., Shenouda, A., Aliga, F., **Aposhian, T.**, Arlauskas, A., Diaz, A., Mongold, S. (2021, December) *How to Cope with the Holiday Blues*, Los Angeles Job Corps Center, Los Angeles, CA

Gonzalez, M., Shenouda, A., Aliga, F., **Aposhian, T.**, Arlauskas, A., Diaz, A., Mongold, S. (2021, November) *Gratitude*, Los Angeles Job Corps Center, Los Angeles, CA

**Aposhian, T.** (2021, October) *Career Preparation Presentation*, Los Angeles Job Corps Center, Los Angeles, CA

Gonzalez, M., Shenouda, A., Aliga, F., **Aposhian, T.**, Arlauskas, A., Diaz, A., Mongold, S. (2021, October) *Grief and Loss*, Los Angeles Job Corps Center, Los Angeles, CA

Gonzalez, M., Shenouda, A., Aliga, F., **Aposhian, T.**, Arlauskas, A., Diaz, A., Mongold, S. (2021, September) *What to Do When it Feels Like Living Hurts: Preventing Suicide*, Los Angeles Job Corps Center, Los Angeles, CA

**Aposhian, T.** (2021, February) *Taking Care of Your Mental Health While Working from Home*, My 360 Wealth Management Group, Glendale, CA

**Aposhian, T.**, Chow, E., Eifert, W. (2021, February) *Middle School Anxiety Parent Training*, Portola Middle School, Tarzana, CA

**Aposhian, T.** (2020, November). *Coping as a College Student During Artsakh Crisis and COVID-19*, Pasadena City College, Pasadena, CA

**Aposhian, T.** (2020, November). *Intergenerational Trauma in Armenians: Clinical Considerations for Mental Health Professionals* [Webinar]

## **ASSESSMENT TRAINING**

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### **Academic Coursework – Pepperdine University**

- PSY 713: Advanced Integrated Assessment – *Carolyn Keatinge, Ph.D.*, Fall 2021
- PSY 711: Personality Assessment – *Carolyn Keatinge, Ph.D.*, Spring 2021
- PSY 710: Cognitive Assessment – *Carolyn Keatinge, Ph.D.*, Fall 2020

### **Academic Coursework – University of Southern California**

- EDUC 544: Measurement Procedures for Counselors – *Jennifer Gold, Ph.D.*, Spring 2019

### **Administration, Scoring, Interpretation, and Report Writing Experience**

- Adaptive Behavior Assessment, Third Edition (ABAS-3)
- Adult Behavior Checklist for Ages 18-59 (ABCL/18-59)
- Adult Self Report for Ages 18-59 (ASR/18-59)
- Auditory Consonant Trigrams (ACT, ACT-C)
- Autism Spectrum Rating Scales (ASRS)

- b Test
- Barkley Adult ADHD Rating Scale-IV (BAARS-IV)
- Beck Anxiety Inventory (BAI)
- Beck Depression Inventory, Second Edition (BDI-II)
- Beck Youth Inventories, Second Edition (BYI-2)
- Beery-Buktenica Developmental Test of Visual-Motor Integration, Sixth Edition (Beery VMI): Beery VMI, Visual Perception, Motor Coordination
- Behavior Assessment for Children, Third Edition (BASC-3)
- Behavior Rating Inventory of Executive Function, Second Edition (BRIEF-2)
- Bender-Gestalt Visual Motor Test-II
- California Verbal Learning Test (CVLT-3, CVLT-C)
- Child Behavior Checklist for Ages 6-18 (CBCL/6-18)
- Children's Memory Scale (CMS): Dot Locations, Stories, Faces
- Comprehensive Test of Phonological Processing, Second Edition (CTOPP-2)
- Conners Continuous Auditory Test of Attention (CATA)
- Conners Continuous Performance Test, Third Edition (CPT-3)
- Conners, Third Edition (Conners-3)
- Controlled Oral Word Association Test (COWAT)
- Delis-Kaplan Executive Function System (D-KEFS): Color Word Interference Test, Design Fluency, Trail Making Test, Tower Test, Verbal Fluency Test
- Expressive One-Word Picture Vocabulary Test, Fourth Edition (EOWPVT-4)
- Gray Oral Reading Test, Fifth Edition (GORT-5)
- Grooved Pegboard Test
- Mini Mental Status Exam (MMSE)
- Minnesota Multiphasic Personality Inventory (MMPI-2, MMPI-A)
- Nelson Denny Reading Test (NDRT)
- Outcome Questionnaire-45.2 (OQ-45.2, YOQ-45.2)
- Patient Health Questionnaire (PHQ-9, PHQ-A)
- PTSD Checklist for DSM-5 (PCL-5)
- Receptive One-Word Picture Vocabulary Test, Fourth Edition (ROWPVT-4)
- Rey Auditory Verbal Learning Test (RAVLT)
- Rey Complex Figure Test and Recognition Trial (RCFT)
- Social Communication Questionnaire (SCQ)
- Social Responsiveness Scale (SRS-2)
- Teacher Rating Form for Ages 6-18 (TRF/6-18)
- Trail Making Test (TMT)
- The Working Alliance Inventory – Short Form (WAIS)
- Wechsler Adult Intelligence Scale, Fourth Edition (WAIS-IV)
- Wechsler Individual Achievement Test, Fourth Edition (WIAT-4)
- Wechsler Intelligence Scale for Children, Fifth Edition (WISC-V)
- Wechsler Memory Scale, Fourth Edition (WMS-IV)
- Wisconsin Card Sorting Test (WCST)
- Woodcock Johnson Tests of Achievement, Fourth Edition (WJ-IV)

## SEMINARS AND TRAININGS

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- *Intersection of Multiple Identities: Evidence Based Practices with Iranian American Clients Case Presentation* with Dr. Nazanin Moali, University of Southern California Psychiatry Grand Rounds (November 2023)
- *Behavioral Health Consulting* with Liz Ronca, LCSW, University of Southern California (November 2023)
- *Trauma and Sexuality* with Sarah Bowling, LMFT, University of Southern California (October 2023)
- *Emotion Focused Therapy for Complex Trauma* with Megan Ensley, PsyD, University of Southern California (October 2023)
- *Cognitive Processing Therapy* with Sarah Bowling, LMFT, University of Southern California (October 2023)
- *Trauma Treatment* with Deborah Schleicher, PsyD, University of Southern California (October 2023)
- *Exposure and Response Prevention for OCD and Anxiety Disorders* with Summer Zapata, Psy.D., University of Southern California (September 2023)
- *Columbia Suicide Severity Rating Scale Training* with Dr. Kelly Posner, University of Southern California (September 2023)
- *Working with Clients who have a Disability: Overview of Key Concepts and Intervention Strategies* with Dr. Jefferey Newell, University of Southern California Psychiatry Grand Rounds (September 2023)
- *Gender Affirming Care* with J.D. Barton, Psy.D., University of Southern California (August 2023)
- *Suicide Prevention Training* with David Rudd, Ph.D., University of Southern California (August 2023)
- *Examining the Anatomy of Couple Relationships: Research and Interventions for Couples in Conflict* with Jonathan Impellizzeri, Ph.D., LPC, LMFT, Cognitive Behavior Institute (July 2023)
- *Exploring Polyvagal Theory, Interpersonal Neurobiology and the SSP* with Stephen Porges, Ph.D. and Tina Bryson, Ph.D., Unyte Health Webinar (July 2023)

## COMMUNITY SERVICE

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**PEPPERDINE UNIVERSITY**, Los Angeles CA

September 2021-April 2023

*Student Buddy*

- Paired with a first-year student and met monthly to discuss the student's progress in the PsyD program and overall self-care
- Offer mentorship to student to assist with adjustment to PsyD program

**USC ROSSIER SCHOOL OF EDUCATION**, Los Angeles, CA

November 2018-June 2020

*MFT Cohort Representative*

- Facilitated verbal and written communication between faculty and students
- Organized events to foster connectedness within the graduate program

**UC IRVINE MENTAL HEALTH CONFERENCE**, Irvine, CA      February 2017-May 2017

*Panel Moderator*

- Met with panelists to hear each of their individual challenges with mental health
- Moderated a student panel to raise awareness about the issues surrounding mental health and further the cause to end stigma

## **PROFESSIONAL AND HONOR SOCIETIES**

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American College Health Association	October 2023-present
California Association of Marriage and Family Therapists	February 2019-present
Phi Beta Kappa Honor Society, UC Irvine Chapter	May 2018-present
Psi Chi Honor Society, UC Irvine Chapter	November 2017-present
Association for Psychological Science	November 2017-present

## **AWARDS AND RECOGNITIONS**

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Pepperdine Colleagues Grant	2020-present
Order of Merit, UCI School of Social Sciences	2018
Social Problems & Public Policy Sociology Certificate, UC Irvine	2018
Dean's Honors List (10 consecutive quarters)	2015-2018

## **GRANTS AND SCHOLARSHIPS**

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**Undergraduate Research Opportunities Program (\$1100)**      January 2018

**Undergraduate Research Opportunities Program (\$600)**      May 2017

- Received research grants for a yearlong research project on "Examining the Intergenerational Transmission of Narrative Style in European-American and Chinese-American Adults"
- Poster presented at UCI Undergraduate Research Symposium in May 2018

## **LANGUAGES**

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- Armenian (fluent)
- Spanish (conversational)



## ABSTRACT

Adverse childhood experiences (ACEs) and suicidality are highly prevalent and increasing social problems among the college and university student population, thereby underscoring a need to better understand the relationship between ACEs and suicidal risk, ideation, and attempts during college. There is also a need to examine current suicide prevention and intervention programs for the extent to which they are ACE- and/or trauma-informed. The purpose of this quantitative systematic review with narrative synthesis is to elucidate findings regarding the relationship between ACEs and suicidality in undergraduate and graduate students across the globe and provide recommendations for future ACE-informed suicide prevention and crisis intervention practices. A PRISMA flow diagram was utilized and illustrates the systematic review process, in which a total of 64 articles were included for final analysis. Results suggest that there is a strong-dose relationship between experiences of childhood adversity and suicidality during college, indicating that the more ACEs one experiences in childhood, the higher the likelihood of experiencing suicidal thoughts or attempting suicide as a young adult in college. Moreover, certain ACEs, such as childhood sexual, emotional, and physical abuse appear to be most strongly associated with later suicidality. Cross-cultural considerations, mechanisms through which suicidality may increase (e.g., perceived burdensomeness, thwarted belongingness, etc.) and decrease (e.g., strong social support, coping skills, sense of belonging, etc.) in the context of ACEs history, and limitations that may potentially impact the results are discussed. Results from international and U.S. research are also compared and contrasted. Recommendations for ACE- and/or trauma-informed care practices for suicide prevention and crisis intervention, such as screening for ACEs, training and education for clinicians in trauma-informed care, and other assessment and referral strategies are provided. Finally, recommendations for future research are

discussed, including the need for research on culturally diverse populations and the effectiveness of ACE-informed interventions and practices.

## **Chapter 1: Background and Rationale**

### **Statement of the Problem**

#### ***Introduction to Suicide on University and College Campuses***

Suicide is the second leading cause of death in individuals ages 18-25 (Centers for Disease Control and Prevention [CDC], 2015; Suicide Prevention Resources Center [SPRC], 2004; Tsong et al., 2019). It is also the second leading cause of death among college-aged students (15–34 years old), and it is estimated that 1,088 college and university students die by suicide each year in the United States (CDC, 2015; SPRC, 2004; Tsong et al., 2019). Despite this, students experiencing psychological distress do not always seek or receive support. A 2012 national survey of college and university students living with mental health conditions revealed that even though 70% of students experienced at least one mental health crisis during the school year, more than a third did not share their struggles with anyone on campus (National Alliance on Mental Illness [NAMI], 2012; Tsong et al., 2019). It appears that a majority of college and university students face significant barriers to seeking help. Suicide risk is additionally of major concern among students who do seek mental health services. In a 2015 survey, the Center for Collegiate Mental Health (CCMH, 2016) found that almost 33% of students who sought services for mental health conditions also seriously considered attempting suicide at some point in their lives (Tsong et al., 2019).

Exposure to various forms of trauma in early childhood poses a risk for suicide in college and university students (Lucas et al., 2020). For example, students who have a history of trauma and who lack self-efficacy (i.e., one's perception of their ability to successfully meet goals) are at greater risk for suicide (Grigsby et al., 2020; Lucas et al., 2020; Y.R., Wang et al., 2019). This highlights the need to understand previous experiences of childhood adversity among this

population. It further underscores the need to incorporate screenings within university and college counseling centers to gather a trauma history as a component of a comprehensive biopsychosocial assessment (Lucas et al., 2020). A better understanding and assessment of the presence of childhood adversity among university and college students and its relationship to suicidality may help reduce suicide on university and college campuses. Exploring this relationship may also improve treatment outcomes and inform intervention, assessment, and referral strategies.

## **Overview of Current Research**

### ***Suicide***

Suicide remains a significant public health issue and is the second leading cause of death in youth worldwide. *Suicide risk* is defined by the factors that contribute to the likelihood that someone will die by suicide. *Suicidality* encompasses suicidal ideation, suicide attempts, and non-suicidal self-injury. *Suicidal ideation* refers to one's thoughts about engaging in behaviors that are intended to end their life (Rytilä-Manninen et al., 2018). This may vary from fleeting thoughts about death to more severe thoughts and plans to die by suicide (Vander Stoep et al., 2009). On the other hand, a *suicide attempt* is defined as deliberately causing harm to oneself with an intent to die (Rytilä-Manninen et al., 2018). A *completed suicide* is a suicide that results in death (Rytilä-Manninen et al., 2018). Suicidal ideation and suicide attempts differ from *non-suicidal self-injury (NSSI)*, which involves an individual engaging in self-injurious behaviors such as cutting, without the intent to die (Miller et al., 2013).

### ***Attitudes Toward Suicide Among College and University Students***

Research suggests that a majority of college and university students are affected by suicide, either by knowing at least one person who has attempted or died by suicide, or self-

identifying as a suicide survivor (Cerel et al., 2013). In addition, a majority of students agree that suicide is preventable and that everyone should play a role in suicide prevention (Cerel et al., 2013). One study suggests that university students who are suicide survivors, women, domestic students, White, or who know someone who has attempted or died by suicide, are more likely to see suicide as a problem among college-aged students who are between the ages of 18-24, than their counterparts (Cerel et al., 2013). A majority of participants additionally agreed that most people who kill themselves usually show some signs or thoughts about suicide (Cerel et al., 2013). Overall, these results suggest that individuals who have survived suicide themselves or who know someone who has attempted or died by suicide are more highly attuned to the fact that suicidal thoughts are common among others.

### ***Help-Seeking and Barriers Faced in Utilizing Services***

Despite the need for mental health support, college students (undergraduate and graduate) face unique barriers in accessing and utilizing mental health services. Some barriers to utilizing services when experiencing distress and suicidality include students' beliefs that their high levels of distress are normal simply because they are college students. Similarly, others experience feelings of doubt that their symptoms warrant professional help (Drum & Denmark, 2012; Wolitzky-Taylor et al., 2020). Many students may also believe that their current social network is sufficient for gaining support and meeting their mental health needs. Others prefer to deal with their problems without professional help (Drum & Denmark, 2012; Wolitzky-Taylor et al., 2020). Stigma appears to be a factor that prevents many college students from seeking help, especially among students who belong to diverse cultural groups (Shadick & Akhter, 2014).

### *Unique Stressors of College*

Across the globe, students in institutions of higher education face unique stressors that can contribute to behavioral, physical, or psychological strain. There are a number of unique influences that could negatively impact students' mental health in higher education. For example, common stressors college and university students experience include relationship stressors, lack of resources, expectations (e.g., family and self), academics, environment, diversity issues (e.g., belonging to marginalized racial or ethnic groups, belonging to a sexual minority group, being a first-generation student, facing discrimination, having a disability), and life transitions (Hurst et al., 2013). Students often experience stress in their family relationships due to leaving family behind to go to school, academic pressure from parents, and caring for family members. In romantic relationships, students report having concerns about developing relationships, missing significant others, managing dysfunctional relationships, or ending romantic relationships. In peer relationships, students tend to have concerns around developing strong relationships with peers, leaving friends behind to go to school, or feeling judged or isolated from peers. With faculty, students report stress over developing mature relationships with authority figures, desire for respect and support from faculty members, and feelings of sensitivity towards faculty displaying differential levels of engagement and support to students (Hurst et al., 2013).

In addition to relationship stressors, students often experience stress as a result of lack of resources, including lack of time, money, support, skills, technology, and sleep (Hurst et al., 2013). It is not uncommon for students to struggle with maintaining a work-life balance, time management, and procrastination. It is also common for students to experience stress due to a lack of support from faculty and institutions of higher education, especially for students who belong to marginalized cultural groups.

Living up to expectations, which come from others or oneself, is also a unique stressor in college and university students. Many students report struggling with perfectionism or managing multiple roles (Hurst et al., 2013). While second-generation students report struggling with living up to the high expectations of their college-educated parents, first-generation students experience stress associated with not knowing what to expect (Hurst et al., 2013).

Academic-related stress, including exams, classes, studying, and selecting a major, are also prevalent stressors among college students (Hurst et al., 2013). Students also face stress related to choosing and working towards a career path, extracurricular activities, health, and their personal appearance (Hurst et al., 2013).

Being in and adjusting to an unfamiliar environment can exacerbate these varied stressors. Societal and institutional racism and discrimination are additional reported stressors within institutions of higher education (Hurst et al., 2013). Students who belong to minority groups report experiencing a heavy burden to succeed given the legacy of discrimination, as these spaces were not built or maintained for all students to thrive academically, socially, or personally. Current events, such as the political climate and the COVID-19 pandemic, may also intersect to exacerbate, highlight, and perpetuate the stressors that students face in higher education. Overall, such stressors can contribute to risk factors in the health and wellbeing of students, including mental health strain and suicidality.

### ***Suicide Risk Factors in College and University Students***

College and university students are at increased risk of mental health concerns, including suicidality, as they are in a developmental stage where depressive symptoms and attention to mental health issues become more prevalent (Baik et al., 2019). College is a time when students are exposed to various and novel stressors including encountering new experiences,

relationships, and living situations with greater exploration of their racial/ethnic, gender, and sexual identities (C.H. Liu et al., 2019). These factors, combined with the developmental age, common forms of psychological distress (e.g., anxiety and depression), increased likelihood of impulsive or other risky behaviors (e.g., alcohol and drug use), and campus culture may create a unique set of stressors that puts students at increased risk for mental health problems and suicidality (Baik et al., 2019; C.H. Liu et al., 2019).

Additionally, students who belong to diverse cultural groups, or racial/ethnic, gender, and sexual minorities are at increased risk for experiencing stress and suicidality in college due to unique stressors. These include, but are not limited to, acculturation issues, cultural expectations, lack of belonging, racism, discrimination, and/or lack of culturally-informed treatment (Acharya et al., 2018; Greer & Chwalisz, 2007; C.H. Liu et al., 2019; Olivas & Li, 2006; Shadick & Akhter, 2014; Sims et al., 2020).

In addition, students who belong to minority groups may differ in their help-seeking styles and coping with mental health problems. Lack of culturally-informed treatment may be a barrier and additional risk factor in students having their mental health supported on college campuses and consequently decreasing the risk of suicide. Research exploring the specific barriers, help-seeking styles, and utilization of services on college campuses and associated suicide risk factors reveals differences and similarities across groups (Shadick & Akhter, 2014). For example, research shows that Asian American college students are at greater risk for experiencing suicidal ideation and behaviors (Choi et al., 2009; Shadick & Akhter, 2014). Factors that increase the risk for suicidality among this group include reluctance to disclose personal issues (especially pertaining to family), acculturation stressors, intergenerational conflicts, navigating expectations of the model minority myth, and a tendency for perfectionism



(Choi et al., 2009; Shadick & Akhter, 2014). In contrast, research has shown that suicide rates among Hispanic or Latinx college students may be associated with risk factors such as low parental income, low levels of acculturation, perceived family conflict, and intragroup marginalization, as well as a difficulty with self-disclosure to mental health professionals (Castillo et al., 2008; Shadick & Akhter, 2014). Similarly, research supports that risk factors for African American college students include acculturative stress and lack of ethnic group identity (Shadick & Akhter, 2014; Walker et al., 2008). Native American college students appear to be at higher risk for suicide than all other student groups. Researchers found that like other ethnic minority groups, acculturation issues as well as socioeconomic characteristics, substance abuse, and historical trauma serve as risk factors for suicidality in college among Native American students (Muehlenkamp et al., 2009; Shadick & Akhter, 2014). First-generation students, international students, students with disabilities, gender and sexual minority students, and religious minority students also face unique stressors and risk factors that negatively impact mental health and increase suicide risk. These risk factors include acculturative stress; depression; previous suicide attempts or knowing others who have attempted or died by suicide; lack of belonging; experiences of oppression, racism, and discrimination; microaggressions; and exposure to family or intimate partner violence (Backhaus et al., 2019; Blosnich & Bossarte, 2012; D'Aguelli et al., 2001; Moran et al., 2018; Shadick & Akhter, 2014; Woodford et al., 2018).

The research literature is clear that LGBTQ+ students experience greater risk for suicide attempts than their heterosexual counterparts (Blosnich & Bossarte, 2012; Johnson et al., 2013; Seelman, 2016; Shadick & Akhter, 2014). Bisexual and transgender students face unique risk factors and are more vulnerable to suicidality. Blosnich and Bossarte (2012) found that among

bisexual students, physical assault and intimate partner violence are more significantly associated with suicide attempts compared to their lesbian and gay counterparts. For transgender students, discrimination based on gender identity, lack of access to gender appropriate spaces, and being under the age of 25 were additional risk factors associated with suicide attempts (Johnson et al., 2013; Seelman, 2016). LGBTQ+ students often enter college already having experienced suicidality or other stressors that further increase the risk for suicide (D'Augelli et al., 2001). While there are several shared risk factors within the LGBTQ+ student community, their effects vary across gender identity and sexual orientation.

Ultimately, it is important for colleges and universities to be aware of the unique and shared suicide risk factors that all students face and attend to intersectionality when shaping campus culture, providing mental health services, and creating and implementing suicide prevention and intervention programs.

### ***The Impact of COVID-19 on College Mental Health***

As discussed, students seeking to earn an education face unique challenges that can negatively impact their mental health. In addition to the general risk factors that college and university students historically face, more recently, the COVID-19 pandemic has added to and exacerbated such effects, contributing to increased vulnerability to psychological difficulties, including suicide risk. Studies show that university students are reporting increases in stress, insomnia, denial, fear, anger, and depressive symptoms throughout their lived experience of the COVID-19 pandemic (Salimi et al., 2021). Social isolation, limited social support, moving back to unsupportive or hostile environments, having relatives and acquaintances infected with COVID-19, sudden and rapid academic changes to an online course format, reduced access to health and mental health care, and reduced employment opportunities are among the stressors

that increase students' vulnerability to psychiatric disorders and suicide risk (Salimi et al., 2021). Students' changes in mental health and increased suicide risk due to the ongoing COVID-19 pandemic further underscore the need for trauma-informed suicide prevention and intervention programs for this vulnerable population.

### ***Suicide Prevention and Response on College Campuses***

The unique stressors and risk factors students face, in addition to the added impact of the COVID-19 pandemic, highlight the need to further evaluate and create suicide prevention and response programs on college and university campuses to meet the needs of the population. Over the past several decades, colleges and universities have increased the levels of support provided to students to prevent suicide and have improved intervention plans for when a student is at risk of harming themselves (Wolitzky-Taylor et al., 2020). At the same time, mental health concerns and the number of students who seek services have also seen an upward trend within university settings (Wolitzky-Taylor et al., 2020). While there have been efforts to increase support, limitations remain in supporting students' needs, and questions regarding the efficacy of the programs utilized. There is significant heterogeneity in the approaches different institutions use and lack of a "gold standard" in treating suicidality in university and college students (Drum & Denmark, 2012; Wolitzky-Taylor et al., 2020). The current literature indicates that more research is needed in this area to better understand the efficacy of different suicide prevention and intervention programs. This may inform recommendations for future effective and comprehensive guidelines that will best support students who are at risk of dying by suicide (Wolitzky-Taylor et al., 2020). Exploring the relationship between adverse childhood experiences and suicidality in college and university students may be instrumental in filling the

gap and creating effective interventions to appropriately meet students' needs and prevent suicide.

At this time, existing suicide prevention and response programs vary widely and intervene at various stages of suicide risk. For example, gatekeeper interventions aim to identify students who are already at risk of dying by suicide and refer them for assessment and treatment (Drum & Denmark, 2012). These types of programs involve individuals who are in close contact with students who may show warning signs of suicide. One such program is QPR, which stands for question, persuade, and refer. Through this intervention, residential advisors, professors, other students, and staff members are trained to recognize the signs of suicide risk, ask questions about suicide and whether someone is considering harming themselves, and refer students to receive support (Wolitzky-Taylor et al., 2020). A similar program, Student Support Network (SSN), draws from QPR to train student helpers to recognize and respond to their peers' distress (Morse & Schulze, 2013). SSN differs from QPR in that it emphasizes building sustaining connections between campus resources and students (Morse & Schulze, 2013). Another peer-to-peer program is the DORA (Depression OutReach Alliance) Peer-Peer Outreach program. This program integrates a didactic component to promote intervention with distressed peers and a self-screening for depression (Funkhouser et al., 2017). DORA programming involves students who are in recovery from depression and suicidal ideation to support peers experiencing similar struggles (Funkhouser et al., 2017). Clinicians at the University of Pennsylvania Counseling and Psychological Services developed I CARE (inquire, connect, acknowledge, respond, and explore), which is another form of gatekeeper training, although not informed by adverse childhood experiences or trauma. This program utilizes experiential learning, role-plays, and exploration of gatekeepers' feelings about suicide to prepare them to respond to suicidal students

(Reiff et al., 2019). The goal of I CARE is to train individuals to talk openly and directly about mental health and suicide and reduce gatekeepers' fears about engaging with students in distress or crisis (Reiff et al., 2019). More generally, college counseling centers also implement outreach and preventive programming as an intervention to educate students about various topics, including suicide (Golightly et al., 2017).

Online suicide prevention programming has been utilized across campuses as well. Programs such as QPR, Mental Health First Aid, and Kognito (avatar-based training) have been implemented online (Smith-Millman et al., 2020). These gatekeeper training programs teach participating individuals how to interact with students exhibiting signs of psychological distress, although they do not include discussion about trauma or the impact of adverse childhood experiences.

Other approaches include direct treatment for students who have expressed suicidal ideation or attempted suicide. Some universities require every student who reports suicidal ideation or had a suicide attempt to receive a certain number of sessions at the school counseling center. Cognitive-behavioral therapy (CBT) and dialectical behavior therapy (DBT) are also widely used approaches to treat college students who are at high risk of completing suicide (Wolitzky-Taylor et al., 2020). Collaborative safety plans are utilized as an intervention to prevent suicide. The Safety Planning Intervention (SPI) is a structured, personalized safety plan that is completed by clinician and client to assist individuals in managing a suicidal crisis (Stewart et al., 2020). Often, the safety plan includes personalized information about the students' crisis warning signs, coping strategies that can be used by themselves, people they can count on to ask for help, people or places that provide distraction, steps to take to ensure safety

(e.g., reducing access to means), emergency contact information, reasons for living, and information about the next counseling appointment.

Some campuses have implemented a variety of screenings to assess various facets of mental health functioning in service of increasing students' contact with the student counseling center. This involves implementing assessment tools in sessions or sending out web-based screenings to the student body and reaching out to students who report high levels of distress in order to connect them to care, should the students need and agree. One such tool is called BASIC ID (i.e., Behavior, Affective Responses, Sensations, Images, Cognitions, Interpersonal Relationships, and Drugs or Biological Influences), which assesses students' behaviors, affective responses, sensations, images, cognitions, interpersonal relationships, and drugs or biological influences as possible risk factors for suicide (Paladino & Minton, 2008). The goal of this assessment is to obtain a holistic understanding of the nature of suicide and its impact on students. An example of a web-based screening is eBridge, in which the primary aim is to facilitate the linkage of students endorsing elevated suicide risk to mental health services (King et al., 2022). eBridge assesses students' suicide risk and provides personalized screening feedback which honors students' personal choice to engage in online counseling. Despite reaching a small subset of students at risk, overall engagement in eBridge appeared to be low. The authors deduced engagement was likely low due to students' concerns about privacy, credibility of online counseling, and potential preference to connect with real providers. Moreover, the authors agree that more effective strategies are needed for suicide prevention on college and university campuses (King et al., 2022).

In addition to gatekeeper interventions, screenings, suicide prevention education, and treatment, efforts have been made to incorporate college students' individuality, attending to the

impact of culture on mental health, suicidality, and help-seeking to prevent suicide. Notably, a multicultural suicide prevention kit was developed by Pace University in 2005 due to the unique additional challenges that diverse college students may face such as minority stress, acculturation concerns, and other challenges related to their background and intersectional identities (Shadick & Akhter, 2014). This program is an example of a culturally-alert intervention that addresses the varying attitudes that college students from diverse cultural groups may have about utilizing mental health services and help-seeking styles, the unique barriers faced in accessing mental health care, and increased potential for suicide risk (Shadick & Akhter, 2014). Because of the unique and comprehensive nature of this intervention, detailed information is summarized below on its approach and components.

Research supports that being cognizant of students' differences in help-seeking styles is important in suicide prevention and intervention (Shadick & Akhter, 2014). Due to these factors, this multicultural suicide prevention kit is centralized around understanding the impact of microaggressions, discrimination, and hate crimes on mental health. It includes signs and symptoms that clinicians and others can be aware of within varying cultural groups, including African American, Asian American, Latino, White, LGBTQ+, international, and Muslim students, as well as students with disabilities (Shadick & Akhter, 2014).

In addition to these themes, the kit includes instructions on how to make referrals that take into account students' diverse backgrounds (Shadick & Akhter, 2014). Brochures, posters, fact sheets, self-study quizzes, role-plays, and bibliographies are included for each of these eight groups to assist with making culturally sensitive referrals for students at risk of dying by suicide (Shadick & Akhter, 2014). Based on anecdotal data, 100% of the participants who underwent training on implementing the program found the information in the multicultural suicide

prevention program useful, 95% of individuals reported that they feel more confident in managing a mental health crisis involving a college student, and 80% of participants reported having used the information to assist students who are suicidal. Although it is not possible to solely tie the following finding to the trainings offered, the university also reported a 12% increase in the number of diverse students referred to the counseling center (Shadick & Akhter, 2014). As a result, this multicultural suicide prevention kit for college students has been disseminated to other colleges, mental health facilities, and government organizations (Shadick & Akhter, 2014).

In the aftermath of a suicide on a college or university campus, postvention practices are utilized to support individuals who are impacted by the death of a student or other crisis and to reduce suicide contagion. This involves both individual and group support where counseling center staff conduct outreach and provide services to individuals, families, and communities who are impacted. This includes consulting with student affairs staff, attending funeral or memorial services, providing outreach to support and normalize grief responses, teaching coping skills, and processing the crisis (Golightly et al., 2017). Ultimately, the goals of postvention practices are to reduce the intensity of the community's emotional, mental, physical, and behavioral reactions to crisis, stabilize the campus community, and limit the risk of further suicide since those who are experiencing psychological pain may view suicide as a viable option to end the pain and act similarly.

Researchers have introduced the idea of implementing changes in campus climate as a clinical and preventative intervention for suicide. For example, stressors that are suicide risk factors may be mitigated by reducing "unproductive stress" from sources such as common institutional barriers to academic success, unnecessary academic pressure, competition, distress,



and discrimination on campus. Other ways to improve campus climate are promoting collaborative work, encouraging career and academic advising, and enhancing preparatory courses to support students entering college for the first time (Brownson et al., 2016). Another area of focus is for campuses to reduce stressors that can produce posttraumatic stress responses. This may be achieved by promoting peer-based awareness and bystander intervention programs to reduce the prevalence of sexual assault, homophobia, and bias on campus (Brownson et al., 2016). By supporting these actions, the goal is to reduce long-lasting vulnerability for suicide, especially for students who are already at greater risk when entering college. A final area of Brownson et al. (2016) suggests focusing on is the development of on-campus recovery support to reduce relapse for students in recovery from addictions, eating disorders, depression, and suicidality.

Despite colleges and universities making strides to improve suicide prevention and intervention, there continues to be a lack of a gold standard to meet students' needs. Ultimately, suicide on college and university campuses continues to be a growing social problem. It is important to evaluate the efficacy of existing programs and consider additional factors, such as the impact of adverse childhood experiences, when creating and implementing suicide prevention and response on college campuses. Despite the known relation between suicidality and adverse childhood experiences, as illustrated in the preceding review, existing interventions do not address the impact of exposures to childhood traumatic experiences on suicidality in students enrolled in institutions of higher education, which is an important puzzle piece to consider when designing programs to decrease suicidality on college campuses.

### *Adverse Childhood Experiences*

Adverse Childhood Experiences (ACEs) are stressful and potentially traumatic events that occur between the ages of 0-18, which negatively impact health and overall wellness of adults and contribute to greater use of emergency and mental and physical health services (Felitti et al., 1998; Karatekin & Hill, 2019; Sahle et al., 2021). These events include but are not limited to exposure to abuse or neglect, parental mental illness, family dysfunction, and socio-economic adversity (Karatekin & Hill, 2019; Sahle et al., 2021). The original adverse childhood experiences study investigated the association between early forms of childhood abuse, neglect, and household dysfunction and later-life health, wellbeing, and many leading causes of death, including suicide (Felitti et al., 1998). This study identified ten core stressful and potentially traumatic events that have lifelong impacts throughout the lifespan, including five personal experiences: physical abuse, emotional abuse, sexual abuse, physical neglect, and emotional neglect. There are also five related to other family members, including having a parent who is an alcoholic, a mother who is a victim of domestic violence, a family member in jail, a family member diagnosed with mental illness, and experiencing divorce or separation of parents.

There is significant evidence to support the relationship between childhood adversity and negative health outcomes in adulthood (Karatekin & Hill, 2019; Sahle et al., 2021). For example, ACEs have been associated with cardiovascular disease, obesity, pulmonary disease, headaches, and autoimmune diseases (Kalmakis et al., 2019; Kalmakis & Chandler, 2015). Research also suggests that negative outcomes are not only limited to physical health, but may also impact mental health throughout the lifespan. ACEs have been associated with suicidal ideation, depression, PTSD, anxiety, and substance use disorders as well as higher rates of health care and prescription medication use (Kalmakis et al., 2019; Kalmakis & Chandler, 2015). The impact of

exposure to ACEs is widely investigated; however, more research is needed to understand the strength, quality, and consistency of the association between various ACEs, common mental disorders, and suicidality as well as how these connections vary across populations and developmental stage at the time of exposure to ACEs (Sahle et al., 2021).

Since the original ACEs study, some researchers have expanded the definition of ACEs to include multiple contextual and systemic stressful and potentially traumatic events (Sahle et al., 2021). This has resulted in four overarching ACE categories:

- interpersonal loss (parental separation, parental death, both death and separation)
- family dysfunction (mental illness, suicidality, substance use disorder, incarceration, domestic violence, inter-parental conflict)
- maltreatment (physical abuse, sexual abuse, emotional abuse, neglect, felt discrimination, bullying, foster care)
- maladaptive parenting (harsh discipline, aversiveness, overinvolvement, and parent-child-conflict)

As the number of these experiences in childhood increases, there is a greater likelihood of poorer outcomes later in life across a wide range of health conditions and behaviors, including suicidality.

### ***ACES and Suicidality***

The interplay of genetic, biological, psychiatric, psychological, social, and cultural factors influences suicidality (Hawton et al., 2012; Ryttilä-Manninen et al., 2018). Individuals exposed to one form of victimization often experience other types of maltreatment, which then poses greater risk and can exacerbate negative physical and mental health consequences, such as suicide risk (Grigsby et al., 2020). The diathesis-stress model theorizes that predisposing

biological, personality, and cognitive vulnerabilities, combined with exposure to ACEs and psychopathology, can increase the risk of suicidal behaviors. Research shows that exposure to high levels of early life stress may serve as an increased and long-term vulnerability to suicidal behavior (Hawton et al., 2012; Ryttilä-Manninen et al., 2018; Serafini et al., 2015). For example, impulsive or aggressive behavior based on exposure to early life experiences may make an individual more likely and vulnerable to act on their suicidal feelings (Pelkonen et al., 2011; Ryttilä-Manninen et al., 2018). Individuals who have a history of multiple ACEs are at greater risk for attempting suicide (Brodsky & Stanley, 2008). Each individual adverse childhood experience can increase the odds of an individual attempting suicide by two to five times compared to those who do not have exposure to ACEs (Dube et al., 2001). Having an ACE score of greater than one appears to have a graded effect on suicidal behavior, exponentially increasing the chance of someone engaging in suicidal behaviors (Dube et al., 2001). Some research shows that having a personal history of sexual abuse between the ages of 0-18 is more highly correlated with suicidal behavior such as self-harm, suicidal ideation, and suicide attempts due to the increased feelings of shame and internal attributions of blame that increase vulnerability to self-harm and decrease reasons for living (Brodsky & Stanley, 2008).

Additional research suggests that childhood abuse and neglect increases the risk of both suicidal ideation and attempted suicide in young people, providing further support for the diathesis-stress model (Bruffaerts et al., 2010; Dube et al., 2001; Evans et al., 2005; Miller et al., 2013; Ryttilä-Manninen et al., 2018; Thompson et al., 2012). In a systematic review that explored the association between ACEs and common mental disorders and suicidality, 14 studies indicated that growing up between the ages 0-18 with a parent with mental illness, experiencing child abuse, and other forms of family dysfunction increased the risk of suicidality later in life

(Sahle et al., 2021). Further findings suggest that the most common ACEs, including childhood maltreatment, maladaptive parenting, and bullying, are associated with a two-fold increase in the risk of common mental disorders and suicidality (Sahle et al., 2021). Researchers have consistently noted a strong link between childhood physical and sexual abuse and suicidal thoughts and attempts in adolescence (Evans et al., 2005; Ryttilä-Manninen et al., 2018). Although all forms of maltreatment have been associated with suicidal ideation and suicide attempts in adolescence, research suggests that childhood sexual and emotional abuse may be more crucial risk factors than physical abuse (Miller et al., 2013; Ryttilä-Manninen et al., 2018). Overall, the strong relationship between the number of adverse childhood experiences and suicidality in adolescence and young adulthood is well-documented in the existing literature (Dube et al., 2001; Felitti et al., 1998; Kumar & George, 2013; Ryttilä-Manninen et al., 2018; Sahle et al., 2021; Serafini et al., 2015).

### ***ACEs and Suicide Prevention***

Although ACEs are well-documented risk factors for suicidality, suicide prevention efforts rarely utilize what is known about the relationship between ACEs and suicidality to prevent suicide (Ports et al., 2017). For decades, suicidologists have recommended a comprehensive approach to suicide prevention that utilizes downstream (secondary and tertiary intervention) and upstream (primary prevention) prevention efforts that emphasize treatment and interventions for at-risk individuals and groups. This includes components such as safety planning, screening for suicide, therapy, and reducing access to lethal means, as well as to prevent suicidal ideation, behavior, and risk before they occur through public policy and destigmatization efforts (Ports et al., 2017). Specifically, primary interventions are aimed at preventing suicide, while secondary interventions involve clinical intervention, and tertiary

interventions focus on recovery and reducing relapse. Prevention efforts such as crisis response plans and crisis services aim to reduce the risk of suicide; however, many of the interventions utilized in this area do not target the antecedents of suicidality that stem from childhood experiences (Ports et al., 2017). Researchers argue that while secondary and tertiary prevention efforts are effective and impactful in limiting death by suicide, they are not enough on their own to sustainably and significantly reduce suicidality (Ports et al., 2017). Due to the strong link between ACEs and suicidality shown across research studies, utilizing what is known about the connection between early adversity and suicide risk may strengthen suicide prevention efforts (Ports et al., 2017). Given the personal and collective burden of having adverse childhood experiences, it is crucial to consider the impact of ACEs on suicidality to decrease the risk of premature mortality.

### ***ACES and Suicidality in College and University Students***

College and university students are at a developmental age and setting in which there is great opportunity to intervene and prevent suicide, as they are often gaining more independence and generally living apart from dysfunctional households (Grigsby et al., 2020). Because exposure to multiple ACEs can increase suicide risk in this population, it is an appropriate time to implement intervention and prevention programs to improve the outcomes for those with early childhood adversity (Grigsby et al., 2020). Although there is little research on the relationship between ACEs and suicidality in college and university students, the existing literature has shown that ACEs are associated with increased levels of perceived stress and lower resiliency, poor psychological and physical health, and lower levels of global subjective health among this population (Coleman et al., 2016; Kalmakis et al., 2019). A study that examined the relationship between ACEs, health behaviors, and outcomes found associations between ACEs and

depressive symptoms; ADHD symptoms; higher cigarette, alcohol, and marijuana use; higher BMI; and lower than recommended sleep, fruit, and vegetable intake among college students (Kalmakis et al., 2019; Windle et al., 2018). Furthermore, higher ACE scores in college students significantly predicted poorer outcomes and were not moderated by gender (Windle et al., 2018). In a 2008 study, more than half (66%) of surveyed college students reported experiencing at least one ACE during their childhood and 17% reported having experienced at least three (Coleman et al., 2016; Kalmakis et al., 2019).

As the number of ACE exposures increase, the negative physical and psychological effects are more pronounced. In a study of health outcomes of college students (ages 18-29) with a history of early childhood trauma (i.e., exposure to verbal abuse, physical abuse, sexual abuse; witnessing violence between parents; living with household members who misused alcohol or other substances; household member incarceration), those with a history of ACEs were two to three times more likely to attempt suicide, struggle with suicidal ideation and/or self-injury, and have depression diagnoses, compared to their non-ACE exposed counterparts (Grigsby et al., 2020). In this study, females experienced a more robust graded relationship between ACEs and internalizing problems such as suicidal ideation and poor sleep than male participants (Grigsby et al., 2020). However, there were no other gender differences between ACEs and the other health indicators, including depression diagnoses, suicide attempts, and non-suicidal self-injury. It appears there is not a significant difference between experiences of childhood trauma and gender-specific health trajectories. It is possible that reported gender-specific differences between the relationship of early childhood adversity and mental health during college are attributable to differences in coping styles (Grigsby et al., 2020). Ultimately, the high level and negative impact of ACEs present in the average college student population underscores the need

for responsive mental health services, especially around suicide risk, to offset the long-term consequences of childhood trauma.

The association between ACEs and suicidality, including ideation, plans, and attempts, in college and university students is seen globally. One study conducted in China concluded that peer isolation or rejection, emotional neglect, and low socioeconomic status strongly predicted suicidal ideation in college students (Y.R. Wang et al., 2019). Research conducted with Zambian college students found that males were more likely to report ACEs of parental substance use, physical abuse, and exposure to parental intimate partner violence than their female counterparts (Zhang et al., 2020). The researchers also found that exposure to parental substance use, verbal abuse, and sexual abuse were all associated with increased risk of suicidal behaviors among Zambian college students (Zhang et al., 2020). The impact of ACEs on suicidality in university and college students across cultural and global contexts further supports the need for trauma-informed suicide prevention and intervention programs, not just in the United States, but across the globe.

### **Rationale, Primary Aims and Key Research Questions**

College is a period of time that can be stressful and difficult for many students. Being enrolled in an institution of higher education exposes students to unique stressors that may contribute to new or existing mental health problems and increase the risk for suicide, which is the second leading cause of death among this population (CDC, 2018; SPRC, 2004; Tsong et al., 2019). The stressors that are present during the college years may also be associated with and exacerbate the presence and effects of ACEs (Karatekin et al., 2018). Research indicates that 70% of college students have experienced one or more ACEs throughout their lifetime (Grigsby et al., 2020), yet there is little research on the impact of ACEs in college students (Karatekin et



al., 2018). Studies have shown that ACE scores are strongly associated with internalizing problems such as having suicidal thoughts (Grigsby et al., 2020). In addition, research suggests that a higher ACE score in college students is correlated with higher stress and lower perceived support from peers, compared to students with lower levels of childhood adversity (Karatekin et al., 2018). Greater understanding of the factors that mediate the relationship of ACEs and suicidality will help universities to better utilize them as potential strategies and targets of suicide prevention and intervention among college students (Grigsby et al., 2020; Karatekin et al., 2018).

Overall, it is evident that college and university students are a vulnerable population who have a high prevalence of ACEs and are at increased risk for having suicidal thoughts and engaging in suicidal behaviors. As suicide among college students becomes an increasing social problem, it continues to reflect the need for responsive suicide prevention and intervention on college campuses that takes into consideration a number of contextual factors, including the history of ACEs in order to effectively serve students' mental health needs. Therefore, broadening the scope of understanding of the relationship between ACEs and suicidality among college students may strengthen comprehensive suicide prevention and intervention strategies. Supporting the general public's and professionals' knowledge of this association may assist with targeting the antecedents of suicide and ACEs and providing appropriate treatment and interventions for those at higher risk of suicide in college. Taking a comprehensive, socio-ecological approach to suicide prevention could result in significant physical and mental health benefits and reduction in suicidality among this population (Ports et al., 2017).

This systematic review aims to explore the relationship between ACEs, and suicide risk and attempts among college and university students. In addition, this review aims to identify factors that may be instrumental in developing a suicide prevention and intervention focus to

increase support for college and university students who have experienced one or more ACEs.

The research questions that will be addressed are

- RQ1: What is the relationship between adverse childhood experiences (ACEs) and suicide risk and attempts among college and university students?
- RQ2: How does the relationship between ACEs and suicide risk and/or attempts inform assessment and referral strategies in existing suicide prevention and/or intervention programs on college and university campuses?

## **Chapter 2: Methodology**

### **Systematic Review Approach**

This systematic review was designed to synthesize the existing body of relevant literature in order to explore the relationship between ACEs and suicide risk and/or attempts in college and university students as well as to identify how this relationship informs assessment and referral strategies in existing suicide prevention and/or intervention programs on college and university campuses. The systematic review methodological approach utilized was the quantitative approach with narrative synthesis. A quantitative narrative synthesis can summarize findings from multiple studies varying in design and methodology, and can expand its concentration on a wide range of questions. Therefore, a narrative synthesis of the data was conducted, examining all included articles, and supported by evidence tables. This narrative synthesis focused on the relationship between ACEs and suicidality as a college or university student, as well the current suicide prevention programs and interventions that exist on college campuses, and the degree to which they are ACEs or trauma-informed.

### **Eligibility Criteria**

The inclusion and exclusion criteria for the systematic review were based on the research questions and the extensive literature review presented previously.

#### ***Inclusion Criteria***

**Source Eligibility Criteria.** Eligible articles were defined as published studies in peer-reviewed journal articles that examined the relationship between ACEs and suicidality among college and university students as well as suicide prevention programs and interventions on college campuses. International research was included to examine the differences and commonalities in the relationship between ACEs and suicidality among college students in the

U.S. and other countries. However, the review only included studies published or available in English. Because the original ACEs study was published in 1998, all included literature in this review was published between 1998-2022.

***Types of Research Variables.*** Research examining suicide ideation, plans, risk, and suicide attempts were included. No restrictions were placed on the type or number of suicide attempts or number of risk factors. The data also included information about adverse or traumatic childhood experiences. Research examining all adverse childhood experiences were included. Inclusion of data on ACEs were not limited to the ten adverse childhood experiences from the original ACEs study in order to account for contextual and systemic childhood adversity (e.g., bullying or peer victimization, community violence, etc.). Research that includes data on interventions for suicidality, including prevention, postvention, assessment, referral, awareness, outreach, and other general interventions (e.g., CBT, DBT) were also examined and included.

***Types of Participants.*** The target population for this study included students enrolled in a higher education institution. Research conducted on traditional and non-traditional aged college students was included. The study primarily focuses on college students (undergraduate and graduate) who reside in the U.S, although research conducted on international students are also included to explore the differences and similarities in the relationship between adverse childhood experiences and suicidality in college students across various cultural contexts. During the 2019-2020 academic year, international students made up 5.5% of the U.S. population enrolled in an institution of higher education, and continues to be an ever-growing population on college and university campuses (Institute of International Education, 2021). Including studies on ACEs with international college and university students was deemed helpful to strengthen the commonalities among the relationship between ACEs and suicidality among the college-aged population. This

research may also be beneficial for clinicians working in clinical settings with international students. No restrictions were placed on age, gender, race, ethnicity, socioeconomic status, sexual identity, or religious identity of study participants.

***Types of Studies.*** Any study design with quantitative data was included, including the following: quantitative studies, experimental (randomized control trial, quasi-experimental design with or without control groups) and non-experimental (descriptive, survey-based, longitudinal and correlational) studies. No restrictions were placed on follow-up time period, sample size, or statistical power.

***Types of Settings.*** Studies from all settings were considered, including institutions of higher education such as junior or community colleges, colleges, universities, and free-standing professional schools. Studies from different countries were also considered to examine the similarities and differences among the relationship between ACEs and suicidality in college students as well as suicide prevention and intervention for college students across various geographic and cultural contexts.

### ***Exclusion Criteria***

Research conducted on young adults who are not enrolled in an institution of higher education were excluded due to the study focusing on the experience of students who are enrolled in institutions of higher education.

### **Search, Screening, and Selection Processes**

#### ***Information Sources***

**Electronic Databases.** Search of scholarly literature included electronic databases that publish psychology-related research in order to identify studies that are specific to the mental healthcare field. The following databases were utilized: PsycINFO, Academic Search Complete,

ERIC, and Scopus to locate relevant peer-reviewed articles. PTSDpubs was also searched because it contains large amounts of research on PTSD and the mental health consequences of traumatic events, which are relevant to the current study.

**Other Information Sources.** Names of prominent researchers of adverse childhood experiences and suicide, including Vincent Felitti, Robert Anda, Shanta Dube, Katie Ports, Tracie Afifi, Julia Sheffler, Ian Stanley, John McLennan, Jill McTavish, Harriet MacMillan, and Caroline Piotrowski were searched to identify additional relevant literature.

**Search Terms.** The main areas of interest of this systematic review are adverse childhood experiences, suicidality, college (undergraduate and graduate) students, and interventions aimed at preventing, addressing, or responding to student suicidality. Data related to these areas were identified by using an extensive list of search terms, search term sets, and keywords listed below and in Appendix A. The list of terms was selected based on a preliminary review of the literature, preliminary searches using various search strategies, and a brief pilot of data extraction methods. The initial term list was refined after consultation with the supervisory committee. The same search terms and search term sets were used to search all databases. A detailed search plan and documentation spreadsheet (Appendix B and Appendix C) was utilized to record the full electronic search strategy utilized in this review. The devised search plan documented the search type (e.g., electronic database), source type (e.g., PsycINFO, Academic Search Complete), assigned search term identification numbers, search syntax and instructions, field of search (e.g., title, keywords, abstract) and included specifiers (e.g., years of publication and publication type).

Terms related to the first area of interest (adverse childhood experiences) included “adverse childhood experiences,” “ACEs,” “childhood adversity,” “trauma,” “early trauma,”

“childhood trauma,” “child maltreatment,” “physical abuse,” “emotional abuse,” “sexual abuse,” “physical neglect,” “emotional neglect,” “parental incarceration,” “parental substance abuse,” “parental substance misuse,” “household dysfunction,” “domestic violence,” “family member with mental illness,” “parental psychopathology,” “parental loss,” “parental divorce or separation,” “discrimination,” “bullying,” “oppression,” “racism,” “parental suicidality,” “foster care,” “maladaptive parenting,” “peer victimization,” “peer isolation,” “peer rejection,” “community violence,” and “low socioeconomic status.”

Terms related to the second area (suicidality) included “suicide,” “suicidality,” “suicide risk,” “suicide attempt(s).”

Terms related to the third area (college students) included “college student,” “university student,” “student,” “young adults,” “college campus,” “undergraduate student,” and “graduate student.”

Lastly, terms related to the fourth area (intervention) included “college interventions,” “assessment,” “referral,” “prevention,” “postvention,” and “awareness.”

**Selection of Studies.** There were three stages in the selection of studies: identification, screening, and eligibility determination. A PRISMA flow diagram (Appendix E) illustrates the search and screening process. A spreadsheet was utilized to record the results of the screening and selection process. A sample of this spreadsheet is shown in Appendix D. The results from all searches were combined and all duplicates were removed. During the first phase, the titles and abstracts of each article were screened to determine if they meet inclusion criteria. The number and principal reasons for exclusion of studies were also documented. During phase two, remaining articles underwent full-text review and were screened for eligibility, utilizing the screening and selection record (Appendix D). In phase three, articles that met inclusion criteria

for the type of source, research variables, participants, and setting were included. An identification number was assigned for each study. To reduce bias and mistakes, a second reviewer reviewed the selection process to confirm the articles that were included in this systematic review.

The researcher recruited master's-level students in psychology as research assistants to assist with screening the articles for eligibility and to complete the data extraction and quality appraisal process described below. Prior to the screening, the research assistants practiced screening the eligibility criteria, extracting data, and completing quality appraisal forms with randomly selected articles to establish inter-rater reliability. Following the establishment of adequate inter-rater reliability, the research assistants assessed the remaining articles for eligibility by reading the full text of the article to determine whether the article met the outlined inclusion and exclusion criteria. Articles determined not eligible for the current study were excluded. A confirmatory review was conducted by comparing the research assistants' decisions to include or exclude an article and determining whether they were in agreement. In cases where there was disagreement, the primary researcher made the final decision to include or exclude the article. All excluded articles were reviewed a second time by the researcher to confirm that they should not be included, as were all included articles to ensure they met the inclusion criteria.

The articles that passed through the three stages were included in the data extraction process and then critically appraised to determine the quality of the data was valid, reliable, and relevant to the content of the current systematic review.

## **Data Collection and Extraction**

### ***Data Collection***



The data collection process involved categorizing descriptive data (study characteristics) and analytical data (outcomes and prevalence rates). Data collection and categorization took place for all articles that passed through the three stages of screening. Information gathered included categories concerning all relevant bibliographic information and the studies' aims, methodology, and research designs.

### ***Study Variables***

The following variables were included: adverse childhood experiences, suicide ideation, plans, risk and attempts, and interventions among college students. Interventions included assessment and referral strategies, suicide prevention and postvention, and awareness and outreach on campuses.

### ***Data Extraction***

Information about the study variables was extracted from each article to explore the relationship between adverse childhood experiences (ACEs) and suicidality in college and university students. A data collection and extraction form designed by the university's program research coordinator and modified by the researcher was used and transferred into spreadsheet format to record the extracted data (Appendix F). The modified form was developed through pilot testing by the researcher to ensure its effectiveness as a data collection tool. One form was completed for each source used in the study. The form included the following information: a previously identified document ID number, the names of authors, year of article publication, the full document title, the research variables, and a section for notes.

The remaining portion of the form was divided into eight sections: general bibliographic information, design characteristics and methodological features, assessment of research variables, study participant characteristics and recruitment, setting characteristics, analysis

conducted, results, conclusions, and recommendations about future research directions. Within each section, specific variables pertaining to adverse childhood experiences, suicidality, college students, and interventions were recorded. In addition, each section included space for additional notes and information identified as important but that could not be captured by the recording scheme. The specific variables recorded were based on relevant information related to the research questions, as well as a preliminary search of the research on ACEs and suicidality among college and university students.

### **Quality Appraisal**

The quality of the chosen studies was assessed using a Quality Appraisal Form (Appendix G) designed by the university's program research coordinator and modified by the researcher. The form was initially pilot-tested by the researcher with randomly selected articles, and the researcher made modifications to the form based on individual considerations of the design and methodological approach for this quantitative systematic review. The Quality Appraisal Form evaluated the quality of studies using the following nine criteria:

1. Strength of literature foundation and rationale for study
2. Clarity and specificity of research aims or objectives or questions
3. Quality of research design or methodological approach
4. Sample selection and characteristics
5. Measures and data collection tools
6. Data collection
7. Analysis of data
8. Discussion of limitations
9. Consideration of culture and diversity

Each item was scored on a scale ranging from 0 (*missing*) to 3 (*strong*) with the option of inapplicable (N/A). The rating for each of the nine components was used to obtain an overall rating of a study's quality. Exemplary quality was considered to be a score of all 3's, Strong quality scores consisted mostly of 3's, Good or Adequate scores were made up of mostly 2's, and a Weak score consisted mostly of 1's. The data collected from this form were utilized to indicate the overall quality of data utilized in this systematic review.

## **Data Management, Synthesis, and Analysis Plan**

### ***Database Development***

After the final set of studies for inclusion was identified, data from each study were extracted using the data extraction and quality appraisal forms. The raw data collected from each study and recorded on the Data Extraction Form (Appendix F) were entered into an Excel sheet database table by the researcher (Appendix H). The primary researcher organized the collected data into categories based on the extracted descriptive and analytical data that were determined by the researcher in collaboration with the dissertation chair.

Following the completion of the Database Table, the primary researcher cleaned, organized, and presented the collected data in two data tables. These tables were used as the evidence base for the research questions. Table 1 organizes the included studies by study design, location, sample size, age, gender, and race and ethnicity of participants. Table 2 organizes the research findings by country and region, by identifying the main ACEs studied, suicide variables, and overall findings of each article. A review of the aforementioned data was assessed and examined, and the results are presented descriptively below.

The results of the systematic review were transferred from the Database Table and summarized in Appendix I (Evidence Table of Included Studies), which was designed by the

university's program research coordinator and modified by the researcher. Reasons for exclusion and number of excluded articles were entered into Appendix J (Excluded Studies), which was created by the researcher, in order to document the principal reasons for exclusion.

### ***Data Analysis and Synthesis***

After the data were extracted, the quality appraisals were completed, and the raw data were transferred and entered into their respective tables, the findings from the systematic review of quantitative studies were described and analyzed with a narrative synthesis. The analysis involved identifying, organizing, describing, and comparing various patterns and/or discrepancies in the studies reviewed to identify information about the relationship between adverse childhood experiences and suicide risk and/or attempts among college students and to determine how this relationship informs assessment and referral strategies in suicide prevention and/or intervention programs on college campuses. Within this analysis, research variables, study and participant characteristics, outcomes, and key results were examined for patterns. Next, the findings were compared and clustered as relevant to inform the descriptive review with key findings found below.

### ***Reporting of the Results***

The results of the systematic review were transferred from the Database and then entered into an Evidence Table of Included Studies (Table 1, Appendix I, and Appendix K). The Evidence Table of Included Studies presented key characteristics of the included studies, including author; year; title; the focus and aims of the study; research methodology and study design; sample characteristics (e.g., sample size, gender, race/ethnicity, and other identity markers); type of adverse childhood experience(s); form of suicidality (e.g., suicidal ideation, plans, risks, suicide attempts); suicide prevention and/or intervention. This table also

summarized the main findings, general takeaways, and clinical implications of the final set of included studies. Research articles that were identified as helpful in answering the systematic review's research questions were compiled into tables as the evidence base for research questions to present and describe how the included studies helped inform each of the stated research questions.

## Chapter 3: Results

### Search Results

The final search yielded 30,033 results (EBSCOhost [Academic Search Complete, ERIC, PsycINFO]: 24,408; SCOPUS: 4,277; and PTSDpubs: 1,348). After removing duplicates ( $n = 16,314$ ), 13,719 articles were screened for eligibility, which included first checking the title and key terms for relevancy, which excluded 13,228 articles. The abstracts of the remaining 491 articles were then reviewed for eligibility, leading to the exclusion of an additional 333 articles. After screening for eligibility, the full texts of 158 articles were screened for inclusion and exclusion criteria. Articles were excluded if they did not focus on college or university students, did not discuss the role of ACEs in suicidality among college or university students, did not focus on ACEs, were not available in English, did not involve quantitative research, did not discuss suicidality, or did not meet any criteria for the research questions for this systematic review. After full-text screening for inclusion and exclusion criteria, a total of 64 articles were selected to be included in the systematic review, as reflected in the PRISMA Flow Diagram below (Appendix E).

### Included Studies Summary Table

The summary table of Included Studies comprises key characteristics of the 64 included quantitative studies (see Table 1 and Appendix K). Of the 64 included articles, 34 reported on prevalence of ACEs and suicidality, 19 focused on discussing the impact of the number of ACEs college students have experienced in childhood, 44 studies focused on examining the impact on types of ACEs, one study reported findings on the impact of time of ACE exposure, 14 focused on mechanisms that underlie the relationship between ACEs and suicidality, 27 studies reported findings on gender, three on LGBTQ+ students, two on graduate students, three on

undergraduate students studying psychology, 12 studies reported findings on one's year in college, 39 studies were conducted internationally, while 24 were situated in the United States (U.S.), along with one study that included both international and U.S. findings. One study reported specific findings with regard to race and ethnicity, outside of international literature. While 57 studies provided suggestions for university counseling centers regarding ACE and/or trauma-informed suicide prevention and/or intervention strategies, only one study focused on testing an intervention, although there was no evidence across the included studies that this intervention is currently being utilized on college and university campuses.

### ***Study Design***

The study design of the included articles varied. The majority of the studies were cross-sectional ( $n = 58$ ; e.g., Roley et al., 2022). Other studies were longitudinal in design ( $n = 6$ ; e.g., Blasco et al., 2019a; Gibb et al., 2001; Karatekin, 2018; Mortier et al., 2017; Puzia et al., 2014).

### ***Location***

Much of the literature included in this systematic review was conducted internationally ( $n = 40$ ; e.g., Hughes et al., 2019), as the research on ACEs and suicidality among college students spans worldwide. Most of the international studies were conducted within various regions of China ( $n = 15$ ; e.g., L.R. Chen et al., 2021), five studies are from Spain (Blasco et al., 2019a, 2019b; Kaminer et al., 2022; Miranda-Mendizabal et al., 2019; Mortier et al., 2021), three from Northern Ireland (McLafferty et al., 2019; Mortier et al., 2021; O'Neill et al., 2018), two from Vietnam (Peltzer et al., 2017; Tran et al., 2015), two from the Czech Republic (Hughes et al., 2019; Veleminsky et al., 2020), two from the Republic of Macedonia (Hughes et al., 2019; Raleva, 2018), two from France (Macalli et al., 2021; Orri et al., 2022), two from Germany (Lin et al., 2020; Mortier et al., 2021), two from Canada (Kaminer et al., 2022; Peter & Taylor, 2014),

two from Belgium (Mortier et al., 2017, 2021), two from South Africa (Kaminer et al., 2022; Mortier et al., 2021), two from Turkey (Eskin et al., 2005; Ozakar Akca et al., 2021), two from Ireland (Bhargav & Swords, 2022; McLafferty et al., 2020), two from Indonesia (Peltzer et al., 2017; Tresno et al., 2012), one from the United Kingdom (UK; McLafferty et al., 2020), one from India (Singh et al., 2012), one study draws from Thailand, Myanmar, Malaysia, and Cambodia (Peltzer et al., 2017), one from Latvia (Springe et al., 2016), one from Brazil (Costa et al., 2019), one from Iran (Kiani et al., 2019), another draws from Mexico and Australia (Mortier et al., 2021), one from Zambia (Zhang et al., 2020), one from Ukraine, Serbia, the Russian Federation, Romania, Poland, Montenegro, Republic of Moldova, and Lithuania (Hughes et al., 2019), and lastly one from Netherlands (Leung et al., 2020).

The remaining studies were conducted within the U.S., across the country ( $n = 25$ ; e.g., Grigsby et al., 2020). Nine studies were from across the Midwest ( $n = 9$ ; e.g., Karatekin, 2018), and included states such as Minnesota (Grigsby et al., 2020), Wisconsin (Gibb et al., 2001), and Michigan (Bridgeland et al., 2001). Four studies were from the Southwest region ( $n = 4$ ; e.g., Watts et al., 2022), and included states like California, Texas (Grigsby et al., 2020; Hsieh et al., 2022), New Mexico, and Colorado (Kaminer et al., 2022). Two studies were from the Southeast (i.e., Virginia; Arata et al., 2005; Kaminer et al., 2022). One study was from the South Central region (Brausch & Holaday, 2015), and two others were additionally from the South, although no more specific regions or states were specified (Bryan et al., 2013; Burlaka et al., 2020). Three studies were from New York (Lawrence et al., 2005; Kaminer et al., 2022; Rodriguez-Srednicki, 2001), and one was from the Boston area (Shapero et al., 2019).



### *Sample Size*

The range of the included sample sizes varied widely, ranging from 65 participants ( $n = 1$ ; Lawrence et al., 2005) to 20,842 ( $n = 1$ ; Mortier et al., 2021). Of these studies, the median sample size was marked at 739 participants, and the most commonly reported number of college and university student participants were 739 ( $n = 2$ ; McLafferty et al., 2020; O'Neill et al., 2018) and 4,034 ( $n = 2$ ; L.R. Chen et al., 2021; Y. Wang et al., 2022).

### *Age and Type of Subjects*

All subjects in this systematic review were college and university students, and there were no exclusion criteria on the basis of age. As such, the age ranges and means of the included studies vary slightly. Of the 64 included articles, 50 studies reported data on students' age ranges and/or mean age of participants ( $n = 50$ ; e.g., Y. Wang et al., 2021) and ten articles did not report any age information ( $n = 10$ ; e.g., Yang & Clum, 2000) other than that participants were college or university students, which met the inclusion criteria for this systematic review. The most commonly reported age ranges were 18-25 years old ( $n = 5$ ; Bhargav & Swords, 2022; L.R. Chen et al., 2021; Hughes et al., 2019; Lin et al., 2020; Singh et al., 2012) and 18-24 years old ( $n = 5$ ; Blasco et al., 2019a; Y. Chen et al., 2017; Kiani et al., 2019; Miranda-Mendizabal et al., 2019; Orri et al., 2022). The widest age range was 17-62 years (Stepakoff, 1998), with the overall age range of participants within the included articles spanning from 15-62 years. Of all included articles, 38 reported the mean age of participants ( $n = 38$ ; e.g., Puzia et al., 2014). Reported age means spanned from 18-26 years, the most frequently reported mean age was 20 ( $n = 12$ ; e.g., Y. Wang et al., 2021), and the next most frequently reported age means were 21 ( $n = 8$ ; e.g., Y. Wang et al., 2022) and 19 ( $n = 8$ ; e.g., Tresno et al., 2012).

## ***Gender***

Of the 64 included articles, only three did not provide information on the gender breakdown of the sample ( $n = 3$ ; Aldridge Antal & Range, 2005; Gibb et al., 2001; Ozakar Akca et al., 2021). The majority of the articles included male and female participants ( $n = 53$ ; e.g., Burke et al., 2018), and several studies looked at only female participants ( $n = 5$ ; e.g., Gidycz et al., 2008). Lastly, a small portion of articles included transgender, nonbinary, or gender queer college participants, though ultimately did not report specific findings on this subsample ( $n = 5$ ; e.g., Watts et al., 2022).

## ***Race and Ethnicity***

The majority of the articles included a racial or ethnic breakdown of the sample ( $n = 36$ ; e.g., Arata et al., 2005); however, several studies did not ( $n = 19$ ; e.g., Aldridge Antal & Range, 2005) or only reported the country the study was conducted in without specifying racial or ethnic identities of the participants ( $n = 10$ ; Blasco et al., 2019a). Of the samples that specified a racial or ethnic breakdown, most represented a majority of White students ( $n = 14$ ; e.g., Gidycz et al., 2008). Two study populations had a majority representation of minorities, specifically self-identified Hispanic and/or Latino students ( $n = 2$ ; Restrepo et al., 2016; Rodriguez-Srednicki, 2001). Only one article reported findings specific to one's racial/ethnic identity, specifically among self-identified Hispanic students in the U.S. (Hsieh et al., 2022).

## **Research Question 1**

What is the relationship between adverse childhood experiences (ACEs) and suicide risk and attempts among college and university students?

## ***Prevalence of ACEs and Suicidality***

Adverse childhood experiences and suicidality among college and university students are pervasive, as demonstrated by research studies examining this relationship among the population worldwide ( $n = 33$ ; e.g., Mortier et al., 2021). Across the studies, prevalence rates vary, likely due to timing of the research, sample size and characteristics, reporting patterns, and/or study design. Nonetheless, a commonality across the literature illustrates how prevalent it is for college and university students to have a history of ACEs, suicidal ideation, and suicide attempts. There is an ever-growing increase in both reported ACEs in college students and suicidality over time as noted in the results below.

**Prevalence of Number of ACEs.** A study conducted across multiple countries (U.S., Canada, England, South Africa, Spain, Argentina, and Uruguay) that examined multiple ACEs (i.e., parental mental illness, parental substance abuse, parental incarceration, parental divorce or separation, parental death, family violence, physical abuse, sexual abuse, emotional abuse, physical neglect, emotional neglect, peer bullying, witnessing community violence and exposure to collective violence such as war, terrorism, and militia violence) found that the majority of students (94.8%) reported at least one ACE and 61% reported experiencing four or more ACEs throughout their childhood (Kaminer et al., 2022). Another cross-cultural study indicated similar findings, in that 75.9% of the sample experienced at least one ACE in childhood, 44.6% experienced at least two ACEs, and 11.9% experienced four or more ACEs (Mortier et al., 2021).

A study conducted in the U.S. found that approximately a third of students had been exposed to two or more ACEs during childhood (Karatekin, 2018). In Zambia, among a sample of 364 students, 27.6% reported exposure to at least one ACE, while 16.3% and 14.4% of students reported two and three or more ACEs, respectively (Zhang et al., 2020). Similar

statistics were reported from a Czech Republic study, which noted 24.9% of students reported at least one ACE, 27.4% reported at least two to three ACEs, and 9.9% of the student sample reported four or more ACEs (Veleminsky et al., 2020). Along with these findings, college students in Ireland reported a prevalence of one to three ACEs among 35.2% of the sample, and 39.6% endorsed four to twelve ACEs (out of a total of twelve; Bhargav & Swords, 2022).

Among self-identified Hispanic undergraduates, 8.7% of students reported childhood polyvictimization, which included experiences of “conventional crime,” “child maltreatment,” “peer and sibling victimization,” sexual abuse, and witnessing victimization (Hsieh et al., 2022).

**Prevalence of Specific Types of ACEs.** Multiple studies reported prevalence rates of specific types of ACEs. For example, one study conducted in China found that the most frequently reported ACE was childhood emotional abuse (53.9%). The least frequently reported ACE was childhood sexual abuse, although almost one in five individuals reported this experience (18.1%; Y. Chen et al., 2017). A more recent study from China supported these findings, noting that 26.37% of college student participants experienced childhood emotional abuse, 17.7% experienced childhood physical abuse, 12.92% experienced childhood sexual abuse, 39.65% experienced childhood emotional neglect and 30.44% experienced childhood physical neglect (Zhou et al., 2022). A cross-cultural study (Mortier et al., 2021) found that the most prevalent ACE across nine countries was bullying victimization (60.7%), followed by parental psychopathology (38.5%), childhood emotional abuse (26.3%), and childhood physical abuse (15.4%). Similarly, a study from France found that 29.8% of their sample was exposed to bullying victimization and 7.5% had experiences of childhood emotional, physical, and/or sexual abuse, while 10.3% of the students had experienced both bullying victimization and childhood emotional, physical, and/or sexual abuse at the hands of their parents (Macalli et al., 2021). A

study from the U.S. that focused on childhood emotional, physical, and sexual abuse found that 75.5% of the sample reported at least one instance of childhood emotional abuse, 57.9% reported at least one instance of childhood physical abuse, and 26.9% reported at least one instance of childhood sexual abuse (Gibb et al., 2001). Among female undergraduate students in the U.S., 14.9% of the sample had experienced childhood sexual abuse (Stepakoff, 1998). In contrast, 28% of male and female university students in Turkey reported at least one instance of childhood sexual abuse (Eskin et al., 2005). One study in China noted that the total prevalence of childhood sexual abuse was 20.76%, with more males than females reporting this ACE (24.23% vs 18.10%; H. Liu et al., 2021).

In the U.S., one study reported that 18.5% of students had experienced childhood physical abuse and 8.1% had experienced childhood sexual abuse (Nilsen & Conner, 2002). Another study found a slightly higher rate of child physical or sexual abuse, with 11% of the participating student sample having had experienced at least one of these ACES (Bryan et al., 2013). In a different U.S. study, 38.8% of the sample reported experiencing childhood physical abuse while 11.2% had experienced childhood sexual abuse (Restrepo et al., 2016) Furthermore, a more recent U.S. study found that 35% of the student sample had experienced at least one instance of childhood emotional, physical, or sexual abuse (Watts et al., 2022). A U.S. study from 2015 more specifically reported that 48% of the student sample had experienced childhood physical abuse (Brausch & Holaday, 2015). Altogether, these findings illustrate an increasing rate of reported childhood physical and sexual abuse in college students across the nation while keeping differences in study design and other factors that may have contributed to these results in mind.

Consistent with prior findings, a study from the Czech Republic noted that emotional abuse was the most common form of childhood abuse in university students (20.7%), followed by childhood physical abuse (17%). Further, this study found significant rates of household dysfunction, with 23% of the sample reporting parental separation and 22.1% reporting having witnessed domestic violence as a child (Veleminsky et al., 2020). Concurring with the above findings, researchers from Latvia noted that childhood emotional abuse had the highest prevalence rate among study participants (31.5%) and that sexual abuse had the lowest (10.4%) (Springe et al., 2016). In contrast, in one study a lower rate of childhood emotional abuse was prevalent in Chinese college students (8.7%; Jiang et al., 2021).

**Prevalence of Suicidality.** The following results emphasize the varying rates of suicidal ideation and suicide attempts among students during their college years. A short-term longitudinal study of U.S. college students found that over a tenth of students who participated in the study endorsed suicidal ideation at two different time points within a span of one month (Karatekin, 2018). Similarly, in a different cross-cultural study, more than a quarter of students reported suicidal ideation during college (27.4%), with smaller percentages endorsing suicide plans (12.7%) and attempts (3.4%). Moreover, within this same cross-cultural study, nearly half (46.4%) of students with suicidal ideation made the transition to a plan and nearly a quarter (23.2%) of those with a plan made the transition to an attempt. Attempts among students with suicidal ideation and no plan were less frequent, with 3% of students reporting this experience (Mortier et al., 2021). Another study, in Northern Ireland found similar results, and overall noted that the prevalence rates of suicidality during college in this region are high, with nearly one third of students reporting suicidal ideation, nearly one in five having made a suicide plan, and 4.3% reporting a suicide attempt (O'Neill et al., 2018). A recent U.S. study noted similar

findings, in that 29.1% of college students reported suicidal ideation, 8.6% had reported making a plan to end their life, and 7.6% had tried to attempt suicide during college (Burlaka et al., 2020). A prior U.S. study reported a lower suicidal ideation prevalence, with 17.5% of students reporting suicidal thoughts at the time of the study, highlighting an overall increase in suicidality over time among the college student population (Bryan et al., 2013). Supporting the increasing rates of suicidality in students over time, Nilsen and Conner (2002), had found that 6.5% of students reported suicidal ideation at the time of their study.

Lower rates of suicidality were found in China, with 9.9% of college students reporting suicidal ideation, 3.0% of students reporting suicidal plans, and 1.3% reporting a suicide attempt in college (G.F. Wang et al., 2020). Similarly, a cross-cultural study in Southeast Asia found that 11.7% and 2.4% of students across multiple countries reported suicidal ideation and attempts, respectively (Peltzer et al., 2017). Within this sample, differences were noted between countries. For example, prevalence rates of suicidal ideation in Myanmar and Vietnam were higher than in Indonesia, Malaysia, and Thailand (15% versus 10%) and suicide attempt rates were higher in Indonesia and Thailand than in Vietnam and Myanmar (more than 3% vs 2%; Peltzer et al., 2017). In addition, a different study in China found that 11.9% of students participating in the research study experienced suicidal ideation, 3.7% had made a plan for suicide, and 1.6% reported having attempted suicide in college (Y.R. Wang et al., 2019). Contrary to these findings, a more recent study conducted in China found that two thirds of students with a history of ACEs experienced suicidal ideation (Zhou et al., 2022). Put together, these results point to a need to pay attention to the increased rate of suicide risk among this subpopulation.

A 2001 study found that 18.6% of female college students with a history of childhood sexual abuse thought about dying by suicide within the past year and 16.9% reported they

attempted suicide (Rodriguez-Srednicki, 2001). Similarly, in a more recent study, nearly one in five (18.3%) of students in France reported suicidal ideation within the past year of participating in the study, though a lower percentage (4.0%) of students carried out a suicide attempt in this sample (Macalli et al., 2021). A similar suicide attempt rate was found in a 2018 study from the Republic of Macedonia, which noted 3.1% of student participants attempted suicide (Raleva, 2018). Higher prevalence rates were found in Turkey, with 41.7% of students reporting suicidal ideation and 6.9% of the sample reporting they had attempted suicide (Eskin et al., 2005). Similarly in Latvia, 6.1% of college students reported suicide attempts, with a higher rate of female than male students (9.2% versus 3.1%) reporting attempting suicide (Springe et al., 2016). A study conducted in India found that 39% of participating undergraduate college students thought about suicide and 15% further thought about a plan for suicide (Singh et al., 2012). Lower rates of suicidality were found in Spanish university students. For instance, one study found that 9.9% of students reported suicidal ideation, 5.6% had a plan for suicide, and less than one percent of students (0.6%) attempted suicide (Blasco et al., 2019b). Regarding persistence of suicidal ideation throughout college, another study from Spain found that 20% of students who reported suicidal ideation in their first year of college continued to experience these thoughts during the following year at university (Blasco et al., 2019a). Overall, it is clear that prevalence rates of suicidal ideation and suicide attempts vary across countries and seem to increase over time. Across all studies, the highest prevalence rates for suicidality during college were for suicidal ideation, regardless of the region of the world, rather than for suicide attempts or other suicidal behaviors (e.g., making a plan for suicide).

**LGBTQ+ Prevalence Rates.** Among research on the LGBTQ+ population, one study found that compared to their heterosexual peers, LGBTQ+ college students reported higher



incidences of suicidal ideation (23% versus 8.9%) and attempts (26.2% versus 3.5%), making LGBTQ+ students 2.6 times more likely to experience suicidal ideation and 7.5 times more likely to attempt suicide. The authors further examined prevalence of suicidal ideation within the past year of participating in the study and likelihood of future attempts. The results suggest that LGBTQ+ university students were 5.8 times more likely than heterosexual students to have had suicidal thoughts three or more times in the past year and predicted to be 10.3 times more likely to attempt suicide in the future (Peter & Taylor, 2014). Another study, conducted in China, reported that the prevalence rate for suicide attempts among LGBTQ+ college students was 4.2%, which was greater than four times higher than their non-LGBTQ+ peers (Y. Wang et al., 2021). Ultimately, as illustrated in the results above, rates of suicidality and reported ACEs among diverse college and university students, including LGBTQ+ students, are concerning and increasing over time and worldwide. The results below will continue to discuss the implications of these prevalence rates and experiences.

### ***Number of ACEs***

Research on the relationship between ACEs and suicidality in college and university students spans several countries and assesses different types of ACEs. The literature illustrates how different types of ACEs have a differential impact on suicidality based on one's culture and the context they grew up in, the type of ACE(s) exposure, timing of ACE(s) exposure, frequency of ACE(s) exposure, number of ACEs experienced, and type of suicidality (e.g., suicidal ideation, plans, or attempts). In total, 19 studies reported on the impact of the number of ACEs experienced and future chances of suicidality (ideation, risk, attempts) during college and graduate school years (Arata et al., 2005; Bhargav & Swords, 2022; Bryan et al., 2013; Grigsby et al., 2020; He et al., 2021; Hughes et al., 2019; Kaminer et al., 2022; Karatekin, 2018;

McLafferty et al., 2020; Mortier et al., 2021; Nilsen & Conner, 2002; O'Neill et al., 2018; Ozakar Akca et al., 2021; Raleva, 2018; Singh et al., 2012; Tran et al., 2015; Veleminsky et al., 2020; Y.R. Wang et al., 2019; Zhang et al., 2020). One study expanded upon this discussion by evaluating the role of the frequency of ACEs students have experienced (Mortier et al., 2021).

A finding that is crystal clear in the literature is that there is a dose-response relationship between the number of ACEs and likelihood of any suicidal ideation in college ( $n = 14$ ; Arata et al., 2005; Bhargav & Swords, 2022; Grigsby et al., 2020; Kaminer et al., 2022; Karatekin, 2018; Mortier et al., 2021; McLafferty et al., 2020; Nilsen & Conner, 2002; Ozakar Akca et al., 2021; Singh et al., 2012; Tran et al., 2015; Y.R. Wang et al., 2019; Zhang et al., 2020). For example, one study found that nearly one half (47%) of students who had a history of two or more types of ACEs reported suicidal ideation during college (Arata et al., 2005). Overall, these studies agreed that there was a positive, linear, and strong dose-response relationship between the number of ACEs students had experienced and suicidal ideation as a college or university student.

In addition, 11 studies focused on suicide attempts as an outcome of experiencing ACEs (Arata et al., 2005; Bryan et al., 2013; Grigsby et al., 2020; He et al., 2021; Hughes et al., 2019; McLafferty et al., 2020; Mortier et al., 2021; O'Neill et al., 2018; Raleva 2018; Veleminsky et al., 2020; Zhang et al., 2020). One article reported that students with a history of ACEs had two to three times the odds of a suicide attempt in comparison to their peers with no history of ACEs (Grigsby et al., 2020). Another study noted that students with at least four ACEs were 17 times more likely to attempt suicide compared to their peers with no ACE history (Hughes et al., 2019). A study conducted in Zambia found that students with three or more ACEs had the highest risk of experiencing suicidal ideation and attempting suicide (Zhang et al., 2020). In agreement with the aforementioned findings, Raleva (2018) found that suicide attempts were 1.5

times more likely as the number of ACEs in college students reached three, and 3.4 times as likely when students had four or more ACEs. In the Czech Republic, researchers found a nearly 24-fold increased odds of attempting suicide in first- and second-year college students when they had a history of four or more ACEs in contrast with students who had no ACE exposure (Veleminsky et al., 2020). Overall, the research showed that exposure to more adversities during childhood leads to a higher risk of suicide attempts in college and university students.

Another trend in the literature found that it is common for ACEs to co-occur. For example, in a study of undergraduate students in the U.S., researchers reported that students endorsed a median of one ACE, with 30% endorsing at least two ACEs out of a list of eight (Karatekin, 2018). Another study, conducted in Vietnam and focused on medical students, noted that over half of the participants had a history of two or more ACEs, one in every five students had been exposed to four or more ACEs, and one in every 30 students experienced six or more of the 11 ACEs examined (Tran et al., 2015). A study that recruited students from seven high-income countries (Australia, Belgium, Germany, Hong Kong, Northern Ireland, Spain, and the United States) and two upper middle-income countries including (Mexico and South Africa), found that over three quarters (75.9%) of students experienced one ACE, 44.6% experienced at least two ACEs, while 11.9% of students experienced four or more ACEs (Mortier et al., 2021). The same study also discussed the unique role of the frequency of the number of ACEs experienced and proposed a model of how college students' suicidal ideation may transition into a suicidal plan, and later into a suicide attempt (Mortier et al., 2021). Regarding the frequency of ACEs exposure, the researchers found that planned suicide attempts were associated with the frequency of all ACEs examined in this study (i.e., parental psychopathology, emotional abuse, physical abuse, sexual abuse, neglect, and bullying victimization), and remained significant for

physical abuse, sexual abuse, and bullying victimization (Mortier et al., 2021). Regarding unplanned suicide attempts among students who experienced suicidal ideation, there were significant associations with the frequency of childhood emotional abuse and bullying victimization (Mortier et al., 2021). Therefore, this study demonstrates that for some college students, it is not only the number of ACEs experienced that contributes to suicidality, but also the frequency of exposure, especially with specific types of childhood adversities such as physical abuse, sexual abuse, bullying victimization, and emotional abuse that can escalate one's suicidal ideation into a suicide plan or attempt. Ultimately, the literature consistently illustrates the presence of a strong dose-response relationship between the number of ACEs experienced during childhood and suicidality among college and university students.

### ***Types of ACEs***

In addition to the impact of the number of ACEs college students have experienced throughout childhood, researchers have also focused their efforts on identifying the types of ACEs that have the greatest impact on suicidality (i.e., suicidal ideation or attempts, and more generally, suicidal behaviors) among college and university students worldwide. Of the 64 included studies, 43 articles reported findings on the impact of specific types of ACEs college students experienced during childhood. Altogether, there are data on 13 ACEs, which include ACEs from the expanded list (e.g., bullying victimization). It is notable that some ACEs (e.g., childhood sexual abuse) are more commonly researched than other ACEs (e.g., familial incarceration), which is important to keep in mind when interpreting this data as there are a number of ACEs not studied at all within this population (e.g., felt discrimination) or understudied compared to other ACEs (e.g., witnessing community violence).

Out of the 44 articles that examined the relationship between suicidality in college and specific ACEs, 21 found a significant association between childhood sexual abuse and suicidal ideation and suicide attempts. Some studies found a significant relationship between this ACE and suicidal ideation only ( $n = 10$ ; e.g., H. Liu et al., 2021). Other studies note a relationship between exposure to childhood sexual abuse and suicide attempts later during the college years ( $n = 5$ ; e.g., Veleminsky et al., 2020). Other studies have found a significant relationship between childhood sexual abuse and both suicide ideation and attempts ( $n = 4$ ; e.g., Zhang et al., 2020). One study found a relationship between childhood sexual abuse and unspecified “suicidal behaviors” in college ( $n = 1$ ; Stepakoff, 1998). Three separate studies did not find an association between childhood sexual abuse and suicidal thoughts or behaviors during college (Zhou et al., 2022; Nilsen & Conner, 2002; Shapero et al., 2019). Overall, the literature shows a high prevalence of experiences of sexual abuse during childhood among college students. Moreover, results suggest that exposure to childhood sexual abuse, in and of itself, can influence the likelihood of developing suicidal thoughts and behaviors during the college or university years.

Similarly, experiences of childhood physical abuse appeared highly prevalent among the study samples included in this systematic review. More specifically, 17 articles reported specific findings on this ACE, with some identifying only a relationship between physical abuse and suicidal ideation during college ( $n = 8$ ; e.g., Thakkar et al., 2000), others indicating a relationship between physical abuse and suicide attempts only ( $n = 5$ ; e.g., Bridgeland et al., 2001), and one focusing on both suicidal ideation and attempts (Bryan et al., 2013). Three studies more generally identified a significant relationship between childhood physical abuse and “suicidal thoughts and behaviors,” “suicide and life threatening behavior,” or “self-harm behaviors,” without specifying the behaviors further (Brausch & Holaday, 2015; Langhinrichsen-Rohling et

al., 1998; Mortier et al., 2017). One study that explored several ACEs (childhood emotional, physical and sexual abuse; witnessing domestic violence; parental separation or divorce; living with family member with a history of substance abuse, mental illness, or criminal behavior; emotional neglect; physical neglect) found that physical abuse was one of the most frequent forms of childhood adversity reported by students and that it doubled the likelihood of suicide attempts during college (Raleva, 2018).

Overall, it appears that childhood abuse is most strongly correlated with suicidality in college, which includes childhood sexual, physical abuse, and emotional abuse ( $n = 15$ ; e.g., Y. Chen et al., 2017). Six of these studies identify a strong relationship between childhood emotional abuse and suicidal ideation in college (e.g., Gibb et al., 2001), five studies examined suicide attempts (e.g., Y. Wang et al., 2021), three studies looked at both suicide ideation and attempts (e.g., Jiang et al., 2021), and one study examined “suicidal thoughts and behaviors” generally. Notably, Raleva (2018) found that study participants who were emotionally abused during childhood were three times more likely than students who had not experienced this childhood adversity to attempt suicide.

Several studies also found a connection between childhood emotional neglect and suicidal ideation ( $n = 3$ ; e.g., Blasco et al., 2019a), attempts ( $n = 1$ ; Spring et al., 2016), ideation and attempts ( $n = 1$ ; Tresno et al., 2012), and more generally, “suicidal thoughts and behaviors” ( $n = 1$ ; Shapero et al., 2019). Five studies found a positive correlation between bullying victimization and suicidality ( $n = 5$ ; e.g., Lin et al., 2020), while four studies found a positive correlation between parental death or loss and suicidality during college ( $n = 4$ ; e.g., Orri et al., 2022). Although physical neglect seems to be an understudied ACE within the literature, two

studies found a significant association between this ACE and suicide ideation and attempts (Burke et al., 2018; Y. Wang et al., 2022).

Significant findings linking ACEs reflecting household dysfunction and suicidality in college were also noted. For example, three studies found a strong association between parental substance abuse and suicidal ideation and attempts during college ( $n = 3$ ; e.g., Zhang et al., 2020), with one study indicating that college students who experienced this ACE are 2.3 to 3 times more likely to attempt suicide in college (Raleva, 2018; Veleminsky et al., 2020, respectively). In addition, college and university students who had witnessed domestic violence exhibited a higher rate of suicidal ideation and/or attempts in college ( $n = 2$ ; e.g., Raleva, 2018). One study found that witnessing domestic violence as an ACE served as a significant risk factor for suicidal ideation in female students (Miranda-Mendizabal et al., 2019), and another researcher found that this ACE quadrupled the chance of attempting suicide during college (Raleva, 2018).

Another understudied adverse childhood experience is having a family member in prison during childhood or adolescence. Raleva (2018) found that a history of familial incarceration was associated with a 3.5 times higher risk of suicide attempts in college. Finally, contextual ACES, such as living within a low socioeconomic status ( $n = 1$ ; Y.R. Wang et al., 2019) and witnessing community violence ( $n = 1$ ; Roley et al., 2022) were also found to have strong associations with suicidal ideation during the college years.

In summary, childhood abusive experiences, such as sexual, physical, and emotional abuse, appeared to be the strongest predictors of suicidal ideation, attempts, and behaviors later in life during college. Experiencing emotional neglect or bullying victimization/peer isolation or rejection appear to follow childhood abusive experiences in strength of predicting suicidality in

college. ACEs pertaining to household dysfunction (e.g., domestic violence) and other ACEs (e.g., low SES, community violence) related to environmental context also appear to increase risk of suicidality in the college years. However, more studies are needed to confirm these preliminary findings.

### ***Time of ACE Exposure***

In addition to the type and number of ACEs experienced, the timing of ACE(s) exposure can impact college students' experience of suicidality. A single study, conducted in China, examined the relationships between timing, duration, types, and patterns of ACEs and suicidal behaviors in male and female college students (L.R. Chen et al., 2021). This study focused solely on childhood sexual abuse and its relationship to suicidal ideation, plans, preparations, and attempts during college. Generally, the researchers found that all types of sexual abuse were significantly associated with each of the aforementioned suicidal behaviors. In addition, a dose-response relationship was found between duration, type of sexual abuse victimization, and each of the suicidal behaviors (L.R. Chen et al., 2021).

Gender differences were noted in the same study. The researchers found that experiences of sexual abuse in elementary school or earlier among male students were associated with suicidal ideation, plans, and preparations while surviving sexual abuse in secondary school among males (approximately ages 13-18 in China) was only associated with suicidal ideation. In contrast, all periods in which sexual abuse was experienced were significantly associated with suicidal ideation only among female students (L.R. Chen et al., 2021). Thus, in this study, the relationship between timing and duration of childhood sexual abuse and suicidal behaviors in college was stronger for male students than for females. In summary, it is clear that male and female participants in this study who had experienced childhood sexual abuse earlier in life and



multiple times throughout their lifetime were at greater risk for suicidal ideation, plans, preparation, and attempts during their time in college.

### ***Mechanisms***

In addition to exploring the aforementioned aspects of the relationship between ACEs and suicidality in college and university students, 14 studies also examined various potential mechanisms that either increased or reduced the likelihood of suicidality among college students. Two articles examined protective factors against suicidal risk, which included a university sense of membership (i.e., sense of connection with the university community), resilience (i.e., the capacity to adapt well to stressful events and life changes), and emotional competence (i.e., the ability to articulate emotions and manage one's own and others' emotions in acceptable ways; Blasco et al., 2019a; Low et al., 2017). In a study examining the first onset of suicidal thoughts and behaviors among incoming first-year Spanish university students, researchers found that a university sense of membership was significantly associated with a lower likelihood of both first onset and persistence of suicidal ideation among students with a history of ACEs (Blasco et al., 2019a).

Another study explored the relationship between childhood physical abuse and suicidal ideation in Chinese undergraduate and graduate students and possible moderators of this relationship. This same study utilized the Emotional Competence and Resilience subscales in the abridged version of the Chinese Positive Youth Development Scale (CPYDS) to measure resilience and emotional competence. The study found that resilience served as a protective factor against suicidal ideation in students with a history of childhood physical abuse. Moreover, the authors found that students with a high level of emotional competence with lower levels of childhood physical abuse experienced less suicidal ideation than students with high levels of

emotional competence and high levels of childhood physical abuse. Finally, this research suggests that students with a history of childhood physical abuse who had both high levels of resilience and emotional competence demonstrated less suicidal ideation than students with lower or no coping resources (Low et al., 2017).

In contrast, 12 studies reported variables that increased students' likelihood of experiencing suicidal ideation, presenting with suicidal risk, or attempting suicide when having a history of ACEs. The mechanisms that were shown to increase college students' likelihood of suicidality included hopelessness, deficits in cognitive functioning (i.e., self-esteem, feelings of hopelessness, and problem-solving deficits), perceived burdensomeness, thwarted belongingness, rumination, personality and dysfunctional attitudes, habituation to pain due to history of childhood physical abuse, past suicide attempts, low or no identification with humanity, social maladjustment, and emotional dysregulation (Bhargav & Swords, 2022; Brausch & Holaday, 2015; Bryan et al., 2013; Gibb et al., 2001; Hsieh et al., 2022; H. Liu et al., 2022; Puzia et al., 2014; Restrepo et al., 2016; Roley et al., 2022; Y. Wang et al., 2022; Yang & Clum, 2000; Zhou et al., 2022).

Two studies focused on students' negative cognitive style, which included feelings of hopelessness. One study found that students who had experienced childhood emotional maltreatment (i.e., emotional abuse or neglect), could develop a negative cognitive style which was associated with chronic elevations of hopelessness and suicidal ideation (Gibb et al., 2001). Similarly, another study identified that the combination of one's self-esteem, locus of control, feelings of hopelessness, and reduced capacity to problem-solve created a "cognitive pathway" of deficits in cognitive functioning (i.e., low self-esteem, external locus of control, hopelessness,

and low problem-solving skills) between ACEs and suicidal ideation in college (Yang & Clum, 2000).

In addition, three studies offered the perspective that perceived burdensomeness plays a role in increasing the likelihood of suicidality among students who have a history of early adversity (Bhargav & Swords, 2022; Hsieh et al., 2022; Puzia et al., 2014). One study reported that students' experiences of childhood emotional abuse and suicidal intent during the college years can partly be explained by their perceived burdensomeness (Puzia et al., 2014). Two recent studies that examined the association between ACEs and suicide ideation supported these findings and noted that perceived burdensomeness (i.e., the sense of feeling like a burden to family, friends, and society) contributed to an increase in suicidal ideation for students with a childhood history of early adversity (Bhargav & Swords, 2022; Hsieh et al., 2022). These studies also found that thwarted belongingness was an additional mechanism that contributed to suicidal ideation. Put together, the studies suggested that further research is warranted on perceived burdensomeness and thwarted belongingness. These studies provided treatment recommendations to increase feelings of belongingness and reduce feelings of burdensomeness through cognitive restructuring (Bhargav & Swords, 2022; Hsieh et al., 2022; Puzia et al., 2014).

In another study, rumination was found to have an indirect effect on the presence of suicidal ideation among students who had survived childhood sexual abuse (H. Liu et al., 2022). The same study found that higher levels of students' perceived social support helped buffer the effects of rumination on suicidal ideation (H. Liu et al., 2022). Another study examined the effects of personality and dysfunctional attitudes in playing a role in the association between ACEs and suicidality in college and university students. The authors of this study concluded that

psychoticism and neuroticism had a direct effect on suicidal ideation and an indirect effect on suicidal ideation via dysfunctional attitudes and depressive symptoms. Furthermore, this research suggested that extroversion had a direct effect on suicidal ideation and an indirect effect on suicidal ideation via depressive symptoms. In other words, this study found that the more extroverted a student was, the less they were at risk of being depressed or experiencing suicidal ideation. Finally, dysfunctional attitudes were shown to have an indirect effect on suicidal ideation via depressive symptoms (Zhou et al., 2022).

Another article examined whether a habituation effect occurred in students who had survived childhood physical abuse. The authors found that students who reported more instances and severity of physical abuse had less fear of death, which impacted their cognitions about being afraid and/or capable of taking their own life (Brausch & Holaday, 2015). Thus, habituation to pain over time may be another mechanism that can increase students' likelihood of dying by suicide, especially if they have a history of childhood physical abuse. Other researchers examined whether social maladjustment played a role in mediating the relationship between childhood physical and/or sexual abuse and suicidal behavior in college students (Restrepo et al., 2016). The findings of this study revealed that experiencing abuse in childhood can increase one's social maladjustment, which in turn may magnify suicidal behaviors during college (Restrepo et al., 2016).

A study examining the relationship between childhood physical and sexual abuse and suicidal ideation and/or attempts found that students with past suicide attempts reported more severe suicidal ideation (Bryan et al., 2013). Another article explored identification with all humanity (IWAH) as a mechanism underlying the association between ACEs and suicidality (Y. Wang et al., 2022). This construct was used to measure students' ability to identify with

humanity. The authors of this study found a negative correlation between IWAH and suicidal ideation, indicating that students with lower levels of IWAH endorsed more suicidal ideation (Y. Wang et al., 2022). Finally, aspects of emotional dysregulation, such as non-acceptance and negative reactions towards stress were studied as possible mechanisms that increase suicidal risk and ideation. Researchers found that facets of emotional dysregulation increased the likelihood of suicidal ideation in college students who had survived childhood sexual abuse (Roley et al., 2022).

In summary, the research concluded that students' university sense of community membership, resilience, and emotional competence decreased their risk of suicidality in college. On the contrary, studies showed that deficits in cognitive functioning (i.e., low self-esteem, external locus of control, feelings of hopelessness, and problem-solving deficits), perceived burdensomeness, thwarted belongingness, rumination, personality and dysfunctional attitudes (e.g., neuroticism), habituation to pain due to a history of childhood physical abuse, past suicide attempts, low or no identification with humanity, social maladjustment, and emotional dysregulation increased college students' risk of suicide.

### ***Gender***

Of the 64 studies included in this review, 27 studies reported findings by breakdown of gender. Of these 27 articles, the majority looked at female and male participants ( $n = 21$ ; Arata et al., 2005; Blasco et al., 2019b; Y. Chen et al., 2017; L.R. Chen et al., 2021; Eskin et al., 2005; Gibb et al., 2001; Grigsby et al., 2020; Hughes et al., 2019; Jiang et al., 2021; Lawrence et al., 2005; H. Liu et al., 2021; H Liu et al., 2022; Macalli et al., 2021; McLafferty et al., 2019; Miranda-Mendizabal et al., 2019; Peltzer et al., 2017; Raleva, 2018; Singh et al., 2012; Tran et al., 2015; Veleminsky et al., 2020; Zhang et al., 2020), a small portion looked at only female

participants ( $n = 5$ ; e.g., Gidycz et al., 2008; Nilsen & Conner, 2002; Rodriguez-Srednicki, 2001; Stepakoff, 1998; Thakkar et al., 2000), and one included transgender and gender nonconforming students in addition to male and female participants, though no specific findings on transgender and gender nonconforming students were included in this study ( $n = 1$ ; O'Neill et al., 2018).

In reviewing the studies, a majority of the articles relayed that females who had a history of ACEs were at greater risk for experiencing higher rates of suicidal ideation and suicide attempts in college (Grigsby et al., 2020; Jiang et al., 2021; Macalli et al., 2021; McLafferty et al., 2019; Miranda-Mendizabal et al., 2019; O'Neill et al., 2018). For instance, a study conducted in Spain found that college-aged females had a significantly higher likelihood of suicide ideation and plans (females; suicidal ideation: 10.5%; plans: 6.4%) than male college students (males; suicidal ideation: 9.2%; plans 4.8%; Miranda-Mendizabal et al., 2019). Similarly, a study that recruited students from universities in Myanmar discovered that a significantly higher proportion of female students (19.3%) reported having suicidal ideation compared to male students (12.4%; Peltzer et al., 2017). One study, conducted in China, found a stronger association between childhood sexual abuse and suicidal ideation in college among male students than female students. Moreover, this same study found that childhood sexual abuse was associated with suicidal ideation, plans, and preparations in male college students, but was significantly associated with only suicidal ideation among female college students (L.R. Chen et al., 2021).

A similar trend regarding gender differences in suicide attempts among students with a history of childhood adversity exists in the literature. For instance, majority of studies found that female college students are more susceptible to attempting suicide (Hughes et al., 2019; Jiang et al., 2021; Macalli et al., 2021; McLafferty et al., 2019; Raleva, 2018). Specifically, one study reported that female students with a history of ACEs are not only more likely to attempt suicide,

but they also are more likely to have a history of more than one suicide attempt and have the attempts result in injury. This finding signifies the severity of reported suicide attempts among female college students (Raleva, 2018). Two studies reported that suicide attempts were more frequent in male college students with a history of ACEs in comparison to their female counterparts, which starkly contrasts the aforementioned results (Miranda-Mendizabal et al., 2019; Peltzer et al., 2017).

Although the majority of included studies seem to conclude that female college and university students are at greater risk for suicidal ideation and attempts, the overall findings are mixed. For example, some studies note there are no gender differences in the association between suicide attempts and ACE exposure among female and male college students (Grigsby et al., 2020). Other studies indicate there are no significant differences regarding the prevalence of certain ACEs and subsequent impact of suicidality in college years or graduate school in male and female students (Arata et al., 2005; Blasco et al., 2019b; H. Liu et al., 2022; Tran et al., 2015; Veleminsky et al., 2020). Finally, a study conducted in Turkey reported that suicide ideation and attempts in students with a history of ACEs were equally common among male and female college students (Eskin et al., 2005).

Largely, research suggests there are gender differences regarding the type of ACEs experienced and their impact on suicidality during college or university years. For example, one study which focused on Chinese students who were emotionally abused during childhood found that male students were more likely to exhibit risk for suicidal behavior. It is worthwhile to note that this study did not define what encompasses suicidal behaviors. Moreover, the study found that emotional abuse was connected to both suicidal behaviors (undefined) and self-harm in female college students (Y. Chen et al., 2017). Other research suggests that male students at risk

for suicide were more likely than female students to have experienced the following ACEs: parental substance abuse (Zhang et al., 2020), physical abuse (Gibb et al., 2001; Singh et al., 2012; Zhang et al., 2020), sexual abuse (H. Liu et al., 2021; Singh et al., 2012), and exposure to intimate partner violence at home (Zhang et al., 2020). The research on gender differences for students who have experienced childhood emotional abuse is inconclusive. For example, one study found that experiences of childhood emotional abuse were more common among female rather than male students (Jiang et al., 2021). In contrast, another study reported childhood emotional abuse was more common in male than female college students (Singh et al., 2012). It is likely that participants' culture and context additionally play a role in these results, as the studies are conducted in different countries, specifically in China and India, respectfully. Another study, conducted in China, confirmed that male college students experienced childhood sexual abuse at higher rates than female students. This same study did not find any significant gender differences in suicidal ideation among this sample (H. Liu et al., 2022).

Exposure to some ACEs had varying outcomes among male and female students. For example, witnessing violence between parents was associated with a higher likelihood of experiencing suicidal ideation in female college students whereas an "unexpected protective effect" was noted for male students with the same ACE exposure (Miranda-Mendizabal et al., 2019). Lastly, a study focusing on parental loss that examined gender differences, in both the college-aged participants and also in the gender of the death of parent, found that when a college student lost their mother but not their father during childhood or adolescence, they experienced increased levels of grief and distress during the college years (Lawrence et al., 2005). Specifically, this study found that female students who had lost their mother in childhood or



adolescence experienced higher rates of suicidal ideation than their male college student counterparts (Lawrence et al., 2005).

Five of the 27 studies that included gender findings focused solely on female college participants. Across these studies, research showed that female students with a history of childhood sexual abuse were predicted to exhibit suicidal behaviors in college and reported a significantly greater number of suicide attempts during college (Rodriguez-Srednicki, 2001; Stepakoff, 1998). Furthermore, the research consistently suggests that childhood sexual or physical abuse was positively correlated with not only suicide attempts but also suicidal ideation during college in female students (Gidycz et al., 2008; Thakkar et al., 2000). Finally, one study emphasized that college female students with a history of childhood physical or emotional abuse are more likely to experience suicidal ideation in college than female students who do not have this history (Nilsen & Conner, 2002).

### ***LGBTQ+ Students***

It is notable that only a limited number of articles focused on exploring the relationship between ACEs and suicidality among LGBTQ+ college and university students ( $n = 3$ ). Additionally, articles that reported findings related to LGBTQ+ students did not report specific findings on the basis of one's sexuality and/or gender, but rather combined all results under "LGBTQ+ college students," which is essential to keep in mind when interpreting the findings, as this approach does not capture the full variability and nuance of experiences that exists within the LGBTQ+ population. Nonetheless, all three articles focusing on this area indicated that LGBTQ+ college students with a history of ACEs are more at risk of experiencing suicidal ideation or attempting suicide than their non-LGBTQ+ counterparts with a history of ACEs (McLafferty et al., 2019; Peter & Taylor, 2014; Y. Wang et al., 2021).

Specifically, one study indicated that LGBTQ+ students were 2.6 times more likely to have seriously contemplated suicide during college. Researchers additionally found that LGBTQ+ college students were 11 times more likely to report a previous suicide attempt with the intent to die during their college years than their non-LGBTQ+ peers. Moreover, at the time of this study, LGBTQ+ students were 5.8 times more likely to have had suicidal thoughts three or more times within the past year of the study. LGBTQ+ students that participated in this research study also indicated being 10.3 times more likely to report a likelihood of attempting suicide in the future (Peter & Taylor, 2014). A more recent study indicated that the prevalence of attempted suicide among LGBTQ+ college students was four times higher than non-LGBTQ+ students (Y. Wang et al., 2021). Overall, it is clear that LGBTQ+ college and university students report significantly higher rates of suicidality than their heterosexual and/or cisgender and gender-conforming peers (McLafferty et al., 2019; Peter & Taylor, 2014; Y. Wang et al., 2021).

Each of the three studies additionally concluded that ACEs were a significant risk factor for LGBTQ+ participants' experience of suicidality during college (McLafferty et al., 2019; Peter & Taylor, 2014; Y. Wang et al., 2021). Two of the three articles that emphasize this finding reported results on specific types of ACEs that serve as risk factors for LGBTQ+ students. While Peter and Taylor (2014) assessed various types of ACEs, including emotional abuse, emotional neglect, sexual abuse, physical abuse, physical neglect, and bullying victimization, all forms of ACEs other than bullying victimization were combined under "childhood trauma" in the reported findings. Nevertheless, the authors concluded that exposure to abuse and harassment from family and peers during childhood are risk factors for suicidality among LGBTQ+ college students (Peter & Taylor, 2014). The second study examined the relationship between six ACEs, including emotional abuse, physical abuse, sexual abuse, emotional neglect, physical neglect,

parental psychopathology, and suicide attempts among male and female Chinese college students (Y. Wang et al., 2021). In this study, the ACEs most linked to suicidality among LGBTQ+ Chinese college students were childhood emotional and sexual abuse (Y. Wang et al., 2021). In summary, specific types of ACEs such as bullying and childhood neglect and abuse, namely emotional and sexual abuse, along with stressors related to belonging to a sexual and/or gender minority group reportedly puts LGBTQ+ students at more risk for suicide during college than their non-LGBTQ+ peers (McLafferty et al., 2019; Peter & Taylor, 2014; Y. Wang et al., 2021).

### ***Race and Ethnicity***

Very few studies on ACEs and suicidality among college and university students report sample characteristics or specific results pertaining to students' identities, especially with regard to race and ethnicity. Within the U.S., only one study that met criteria for inclusion of this systematic review reported specific findings with respect to race/ethnicity. These findings were specific to Hispanic undergraduate students (Hsieh et al., 2022). This study was conducted at a university in south Texas. Participants were required to be within 18-29 years of age, a U.S. citizen or legal resident, and self-identifying as Hispanic. Students additionally identified their countries of origin. Out of a sample of 528 students, 412 students were from Mexico (77.9%), 39 students were from the U.S. (7.4%), 17 (3.2%) were from other countries (i.e., Argentina, Honduras, and Spain), and 73 participants did not specify their country of origin (Hsieh et al., 2022). The authors were specifically interested in childhood polyvictimization and explored the following ACEs: conventional crime (i.e., crime that involves physical force or the threat of physical force), child maltreatment, peer and sibling victimization, sexual abuse, and witnessing victimization. Results regarding exposure to ACEs were combined under "childhood polyvictimization." The authors found that 8.7% of Hispanic undergraduate participants reported

exposure to childhood polyvictimization. Moreover, they found that perceived burdensomeness and thwarted belongingness served as mechanisms that had a significant indirect effect on suicidal ideation among Hispanic college students (Hsieh et al., 2022).

### ***Year in College***

Some studies reported findings pertaining to college students' year in college ( $n = 15$ ). In particular, nine studies focused on first year undergraduate students only (Blasco et al., 2019a, 2019b; Y. Chen et al., 2017; He et al., 2021; McLafferty et al., 2019, 2020; Mortier et al., 2017, 2021; O'Neill et al., 2018), two studies reported findings on first and second year undergraduate students together (Raleva, 2018; Veleminsky et al., 2020), one research study reported findings on students in their final year of secondary or vocational school (Springe et al., 2016), and two others discussed findings on graduate students (Costa et al., 2019; Tran et al., 2015).

All studies focusing on incoming college freshmen students only ( $n = 9$ ) noted that more exposure to childhood adversity contributed to higher risk of suicide ideation, self-harm behaviors, and suicide attempts within this subgroup. In addition, these studies indicated that rates of suicidality among first year college students are high. Overall, the research consistently notes that students of younger age, especially those entering college for the first time, are at greater risk for suicide when having had experienced a history of ACEs. The research agrees that older students are less likely to engage in suicidal behaviors (Blasco et al., 2019a, 2019b; Y. Chen et al., 2017; He et al., 2021; McLafferty et al., 2019, 2020; Mortier et al., 2017, 2021; O'Neill et al., 2018).

Seven studies identified specific types of ACEs that most influence the relationship between ACEs and suicidality among first year college students. For instance, studies found that childhood emotional abuse was a highly prevalent and impactful ACE that was linked to suicidal

and self-harm behaviors across several studies (Blasco et al., 2019a, 2019b; Y. Chen et al. 2017; Mortier et al., 2021; Raleva, 2018; Springe et al., 2016; Veleminsky et al., 2020). The literature agreed that other highly prevalent ACEs that contributed to suicidality (i.e., suicidal ideation, self-harm, and suicide attempts) among first year students across various countries included bullying victimization (Blasco et al., 2019a; Mortier et al., 2021), parental psychopathology (Blasco et al., 2019b; Mortier et al., 2021), physical abuse (Mortier et al., 2017, 2021; Raleva, 2018; Springe et al., 2016; Veleminsky et al., 2020), emotional neglect (Blasco et al., 2019a; Raleva, 2018; Springe et al., 2016), witnessing domestic violence within the home (Veleminsky et al., 2020), parental separation (Veleminsky et al., 2020), and physical neglect (Springe et al., 2016). The research consistently depicted a strong dose-response relationship between number of ACEs and suicide risk among first-year college students (Blasco et al., 2019a, 2019b; Y. Chen et al., 2017; He et al., 2021; McLafferty et al., 2019, 2020; Mortier et al., 2017, 2021; O'Neill et al., 2018; Raleva, 2018; Springe et al., 2016; Veleminsky et al., 2020).

Literature focusing on first-year college students with a history of ACEs also examined the onset of suicidal thoughts and behaviors occurring during students' first year at a university (Blasco et al., 2019a; Mortier et al., 2017). One study indicated that the first onset of suicidal thoughts and behaviors among first-year students appears to be higher than that of the general population and that having a history of ACEs, especially childhood physical abuse, puts students at greater risk of developing suicidal thoughts and behaviors for the first time in college (Mortier et al., 2017). Another study that examined the onset of suicidal thoughts and behaviors among first-year students found a connection between the first onset of suicidal ideation in college and experiences of childhood emotional abuse and neglect, and bullying victimization (Blasco et al., 2019a). This study employed a 12-month follow up to assess the persistence of suicidal thoughts

and behaviors among this subgroup and found that one in five students with a history of suicidal ideation during their first year in college continued to experience such thoughts in their subsequent year of college (Blasco et al., 2019a).

Among both first- and second-year college students, the rates of suicidality and ACEs appear to be high, and findings consistently show that the more ACEs one has experienced, the greater their suicide risk during these college years (Raleva, 2018; Veleminsky et al., 2020). Specifically, one study in the Czech Republic found that there was nearly a 24-fold increase in the odds of a first- or second-year student attempting suicide if they had four or more ACEs compared to students who had zero ACEs (Veleminsky et al., 2020). This study also found that being exposed to specific types of ACEs, such as parental psychopathology (including having a parent who attempted suicide); parental substance abuse/misuse; parental separation; and childhood emotional, physical, or sexual abuse are significantly associated with increased odds of suicide attempts during the first and second years of college (Veleminsky et al., 2020). Among this group of students, it is notable that childhood emotional and physical abuse, witnessing domestic violence at home, and parental separation are the most common forms of ACEs.

A second study, conducted in the Republic of Macedonia, found that emotional and physical neglect, and physical abuse were the most frequent abusive experiences first- and second-year students had during childhood (Raleva, 2018). Furthermore, the results showed that physical abuse during childhood reportedly doubled the chances of first and second year students attempting suicide, witnessing substance abuse in the family appeared to increase the chances 2.3 times for attempting suicide, being emotionally abused during childhood made attempting suicide almost three times as likely during these years, witnessing violent treatment of the mother (i.e., domestic violence) nearly quadrupled the chances for attempted suicide, and lastly,

having a family member who had been in prison increased the odds of attempted suicide 3.5 times (Raleva, 2018). In this research study, a dose-response relationship between number of ACEs and attempted suicide was found. Specifically, the likelihood of a first- or second-year student attempting suicide was 1.5 times more likely as the number of ACEs students experienced reached three and 3.4 times more likely as the number of ACEs reached four or more (Raleva, 2018).

One study, conducted in Latvia, examined the relationship between ACEs and suicidality in students who were completing their last year in university or a vocational school (Springe et al., 2016). The findings of this study concur with prior research, in that emotional abuse was found to have the highest prevalence among students with a history of ACEs and that childhood physical abuse and emotional neglect were found to have the strongest association with suicide attempts among first- and second-year students (Springe et al., 2016).

### ***Graduate Students***

Although many studies included graduate students in their samples, only two included articles reported specific findings as it relates to graduate students. These two studies found a relationship between ACEs exposure and suicide ideation and attempts among graduate students (Costa et al., 2019; Tran et al., 2015). In a study exploring suicidal ideation and attempts alongside emotional physical and sexual abuse; violence against household members; living with household members who were substance abusers; living with household members who were imprisoned; growing up with one or no parents, parental separation or divorce; bullying; and community violence within medical students in Vietnam, researchers found a link between ACE exposure and suicidal ideation during medical school, with no significant differences between male and female medical students (Tran et al., 2015). They noted the most commonly reported

ACEs among this sample of medical students were emotional abuse (42.3%), physical abuse (39.9%), and witnessing a family member being treated violently (34.6%). In addition, 15% of both male and female medical students reported surviving childhood sexual abuse (Tran et al., 2015). The authors note that over half the sample (53.8%) had experienced at least two or more types of ACEs while growing up, which illustrates the prevalence of ACEs within this subgroup. Moreover, one in every five medical students had been exposed to four or more ACEs, while one in every 30 reported six or more ACEs (Tran et al., 2015). In conjunction with other research, a dose-response relationship was found between ACEs and past year suicidal ideation within this sample of medical students, meaning that the more ACEs one experienced during childhood, the more likely they were to experience suicidal ideation during the time of their graduate studies (Tran et al., 2015).

Another study, conducted on graduate and undergraduate students in Brazil, focused on identifying the similarities and differences between graduate and undergraduate students who had been exposed to ACEs and exhibited suicidal thoughts and behaviors during their time at university (Costa et al., 2019). It is notable that this study did not report results on specific types of ACEs but rather clumped the findings for ACEs exposure as “child and adolescent maltreatment.” Despite this, in agreement with prior literature, the authors denote findings that both graduate and undergraduate students are at risk for suicide when they have a history of ACEs (Costa et al., 2019). Interestingly, the authors found that students under the age of 25 had a 2.13 times greater chance of experiencing suicidal thoughts and behaviors while at university while master’s and PhD level graduate students were at lower risk for suicide than undergraduate students (Costa et al., 2019). Due to this finding, the researchers posit that having an educational degree and experiencing prior life transitions and adjustments (specifically to college) serve as



protective factors against suicidal ideation, self-harm, plans, or attempts while attending graduate school (Costa et al., 2019).

### ***Psychology Undergraduate Students***

A trend in the literature on ACEs and suicidality within college and university students showed that many of the students who participated in such studies were studying psychology themselves. This sample characteristic is important to keep in mind when interpreting the findings, as it is probable that students may have signed up for the studies due to a greater inclination to participate due to a personal history of childhood trauma and/or suicidality and a desire to learn more about themselves. Three studies reported findings specific to this subgroup and specifically examined childhood physical abuse and its association to suicidal ideation or self-harm during college (Aldridge Antal & Range, 2005; Brausch & Holaday, 2015; Thakkar et al., 2000). Two of the studies additionally looked at the association between childhood sexual abuse and ACEs (Aldridge Antal & Range, 2005; Thakkar et al., 2000). One study found a correlation between childhood sexual and physical abuse and suicidal ideation in female undergraduate students enrolled in a psychology introductory course at a mid-sized Midwestern university (Thakkar et al., 2000). A study focusing on childhood physical abuse and suicidality found that nearly half the sample (48%) had a history of childhood physical abuse. This same study found that a greater history of physical abuse was related to increased self-harm behavior but not fears about suicide due to a habituation effect to pain and fear of death due to enduring physical abuse during childhood among psychology major undergraduate students (Brausch & Holaday, 2015).

In a different study, researchers tested writing as an intervention among psychology undergraduate students (Aldridge Antal & Range, 2005). Participants were asked to write either

about traumatic experiences of childhood physical or sexual abuse or a positive experience of their choosing (Aldridge Antal & Range, 2005). The findings of this study indicate that the students who wrote about their childhood traumas found their writing experience more valuable than those who did not. In addition, four weeks after the initial experiment, participants showed a decrease in suicidal ideation over time; however, the authors note that the effect of what contributed to this improvement is unclear and cannot be confidently attributed to the writing task (Aldridge Antal & Range, 2005).

### ***International Research***

A majority of the research on the relationship between ACEs and suicidality among college and university students is conducted internationally ( $n = 39$ ; e.g., Leung et al., 2020), and across 39 countries, including the U.S, where most of this research is conducted ( $n = 24$ ; e.g., Bryan et al., 2013), or both internationally and in the U.S. ( $n = 1$ ; Kaminer et al., 2022).

**Asia.** The following results encompass research conducted in Asia.

**China.** The country in which this topic is second most researched is China ( $n = 15$ ; e.g., Y. Chen et al., 2017). Studies in China consistently show that compared to other ACEs, there is a high prevalence of childhood emotional abuse among Chinese college and university students (Y. Chen et al., 2017; Jiang et al., 2021; Leung et al., 2020; H. Liu et al., 2022; Mortier et al., 2021; Y. Wang et al., 2021, 2022; Zhou et al., 2022). In alignment with previous research across the globe, studies conducted in China also show that experiences of all childhood abuse (emotional, physical, and sexual abuse), are positively correlated with suicide ideation and attempts during college (L.R. Chen et al., 2021; He et al., 2021; H. Liu et al., 2021; Low et al., 2017; Y. Wang et al., 2021, 2022). Bullying victimization/peer isolation or rejection during childhood is another commonly studied ACE among Chinese college students (Lin et al., 2020;

Mortier et al., 2021; Y.R. Wang et al., 2019; G.F. Wang et al., 2020). A study conducted across nine countries, including China, found that bullying victimization was the most prevalent reported childhood adverse experience (Mortier et al., 2021). A different study found that Chinese college students who were bullied during childhood or adolescence were more likely to report suicidal ideation than their peers who were not bullied (G.F. Wang et al., 2020). Another article reported peer isolation and rejection was one of the strongest predictors of suicidal ideation among Chinese college students. This study found that having experienced peer isolation and rejection in childhood increased one's likelihood of experiencing suicidal ideation in college by 4.8 (Y.R. Wang et al., 2019). Furthermore, research shows that Chinese male students who have a history of ACEs are at greater risk for suicide than their female counterparts (Y. Chen et al., 2017; L.R. Chen et al., 2021; H. Liu et al., 2021, 2022). Overall, the current literature consistently delineated a strong dose-response relationship between exposure to childhood adversities and suicidality during college among Chinese university students (Y. Chen et al., 2021; He et al., 2021; Y.R. Wang et al., 2019).

In addition, research focusing on Chinese college and university students highlight a number of cultural and contextual factors to consider when working with this population. For example, one study compared the experiences of childhood maltreatment among Chinese students to that of Dutch students in the Netherlands. This study found that Chinese students reported more experiences of physical and emotional abuse, and higher rates of suicidal ideation than Dutch students (Leung et al., 2020). A different study that focused on childhood bullying victimization in Chinese and German university students noted no significant differences in mental health outcomes, including suicidality (Lin et al., 2020). Adding to cultural considerations, another study that explored the association among ACEs and suicidality in

Chinese college students found that students of Hui nationality were 1.59 times more likely to experience suicidal ideation in college than students of Han nationality (Y.R. Wang et al., 2019). In addition to individual cultural differences, the literature also highlights the importance of considering contextual factors, such as students' socioeconomic status, physical health, type of environment they were brought up in (i.e., urban, rural, suburban), and family relations. Research suggests that coming from a low socioeconomic background, experiencing poor physical health (e.g., chronic disease, disability, language or learning disabilities), living in a rural area, and having parents who migrated from the countryside to city for work and left their children behind, can increase the risk for high incidence of adverse childhood experiences and subsequent suicidality in college years among Chinese college students (He et al., 2021).

***Southeast Asia.*** The Association of Southeast Asian Nations (ASEAN) is a union of ten member states within Southeast Asia (Peltzer et al., 2017). Six countries within this region, including Vietnam, Indonesia, Cambodia, Malaysia, Myanmar, and Thailand have published literature on ACEs and suicide in college and university students ( $n = 3$ ; Peltzer et al., 2017; Tran et al., 2015; Tresno et al., 2012). One study focused on medical students in Vietnam and found that childhood emotional and physical abuse and witnessing domestic violence were the most common ACEs reported and linked to suicidal ideation in medical school (Tran et al., 2015). Childhood sexual abuse was another prevalent, though less common ACE experienced by Vietnamese medical students (Tran et al., 2015). Furthermore, as with other studies across the globe, a strong dose-response relationship was found between ACEs and suicidal ideation among Vietnamese medical students (Tran et al., 2015).

Another study focused solely on undergraduate students in all six countries and reported differences in prevalence rates of ACEs and suicidal ideation and attempts (Peltzer et al., 2017).

For example, the researchers found that the prevalence of suicidal ideation was below ten percent in Indonesia, Malaysia, and Thailand, and higher, above 15%, in Myanmar and Vietnam. In contrast, it appeared that the suicide attempt rate within these samples was higher in Indonesia and Thailand at 3% and below 2% in Myanmar and Vietnam. Gender differences were also found among university students in Myanmar and Thailand. Specifically, the study found that female students with ACE histories in Myanmar reported suicidal ideation at higher rates than their male counterparts. The study also showed that male students with ACE histories were more likely to attempt suicide in college than their female counterparts (Peltzer et al., 2017). Regarding the significance of types of ACEs, childhood sexual abuse appeared to be significantly associated with suicidal ideation among undergraduate students in ASEAN countries and in medical students in Vietnam (Peltzer et al., 2017; Tran et al., 2015), while childhood emotional neglect was significantly associated with suicidal ideation and attempts among college students in Indonesia (Tresno et al., 2012).

**South Asia.** Only one study examining childhood adversity and suicidality in undergraduate college students was conducted in South Asia, specifically in India ( $n = 1$ ; Singh et al., 2012). This study looked at all forms of childhood abuse and suicidal ideation. Within the sample, suicidal ideation seemed prevalent, with 39% of students endorsing having thoughts of suicide and 15% having thoughts about preparing for suicide (Singh et al., 2012). Physical abuse was reported to be the most commonly experienced ACE among male and female undergraduates in India. In addition, this study found a positive correlation between suicidal risk and all forms of abuse (i.e., emotional, physical, and sexual abuse; Singh et al., 2012).

**West Asia.** Two countries within this region are included in this systematic review, Turkey and Iran ( $n = 3$ ; Eskin et al., 2005; Kiani et al., 2019; Ozakar Akca et al., 2021). Research

suggests that ACEs are common among college students in Turkey (Eskin et al., 2005; Ozakar Akca et al., 2021). Studies that focused on this subpopulation emphasized the prevalence and impact of childhood sexual abuse among Turkish college students. For instance, one study found that in sample of 1262 students, 28% had experienced childhood sexual abuse (Eskin et al., 2005). Further, research suggests that experiencing childhood sexual abuse increases the risk for suicidal ideation and behaviors among Turkish college students (Eskin et al., 2005; Ozakar Akca et al., 2021).

Concurring with previous literature, research among university students in Iran has shown that there is significant correlation between ACEs and suicidal ideation among college students (Kiani et al., 2019). It is important to note that the researchers examined all original ten ACEs and their impact on suicidal ideation, though ultimately combined the ACEs under “childhood traumatic experiences” when reporting the results. Kiani and Atadokht (2019) note further considerations regarding culture and context. For instance, they report that students who participated in their study may have had exposure to other childhood traumas that are not included in the original ACEs questionnaire (e.g., exposure to war during childhood). They argue that such ACEs also warrant consideration and may be correlated with suicidality in college (Kiani et al., 2019).

**Europe.** The following results encompass research conducted in Europe.

***Eastern Europe.*** Countries included in this subsection are the Czech Republic, Lithuania, Republic of Moldova, Montenegro, Poland, Romania, the Russian Federation, Serbia, Ukraine, the former Yugoslav Republic of Macedonia, and Latvia. Research on ACEs and suicidality in college and university students in the aforementioned countries is conducted across four studies ( $n = 4$ ; Hughes et al., 2019; Raleva, 2018; Springe et al., 2016; Veleminsky et al., 2020). As in

other regions in the world, research across all 11 countries in Eastern Europe found that college students with a history of adverse childhood experiences compared to students with no such history were at greater risk for suicidal ideation and attempts during college (Hughes et al., 2019; Springe et al., 2016). Moreover, researchers found that as the number of ACEs experienced increased, so did the risk of attempting suicide among this group of students (Hughes et al., 2019; Raleva, 2018; Springe et al., 2016; Veleminsky et al., 2020). One study, focusing on students in the Czech Republic only, specified that students' risk of attempting suicide in college increased 24-fold for participants with four or more ACEs (Veleminsky et al., 2020). Additionally, a different study found that students with four ACEs or more were 17 times more likely to attempt suicide in college (Hughes et al., 2019). Each of these articles the strong dose-response relationship between ACEs and suicidality in college among students attending university in Eastern Europe.

As well, there are differences in experiences of ACEs and suicidality among college students within Eastern Europe and other areas of the world. For example, a study examining the relationship between ACEs and suicide attempts in ten Eastern European countries, (not including Latvia) additionally examined the role of supportive relationships in childhood. This study found that the presence of supportive relationships reduced the risk of attempted suicide in college by nearly 50% in students with a history of four or more ACEs. This finding illuminates the extent to which supportive relationships in childhood may serve as a buffer against suicide risk among college students in Eastern Europe (Hughes et al., 2019).

In addition, notable gender differences were recognized in the literature among students in Eastern Europe. For instance, multiple studies found female students with ACE histories attempted suicide at higher rates than their male counterparts in the Czech Republic, Republic of

Macedonia, and Latvia (Hughes et al., 2019; Raleva, 2018; Springe et al., 2016). This finding is consistent with research on students in Northern Ireland, and opposed the findings among students in Vietnam. Beyond attempted suicide, researchers also found that female college students not only attempted suicide at higher rates than males, but also reported having more than one attempt that more often resulted in injuries in comparison to male college students among universities in the Republic of Macedonia (Raleva, 2018).

Regarding similarities and differences in the impact of types of ACE exposure, emotional abuse was found to be one of the most common ACEs that contributed to suicidality among students in the Czech Republic (Veleminsky et al., 2020). Household dysfunction in the Czech Republic was also very common among university students, especially parental separation and witnessing domestic violence, which 23% and 22.1% of the sample had experienced, respectively (Veleminsky et al., 2020). In the Czech Republic, certain ACEs increased the risk of attempting suicide more than others. These ACEs included being exposed to a family member with mental illness, parental substance abuse, parental loss due to suicide, parental separation, and emotional, physical, and sexual abuse. Furthermore, parental substance abuse three times increased the odds of a suicide attempt among college students in the Czech Republic (Veleminsky et al., 2020). In contrast, the impact of ACEs in the Republic of Macedonia differed. In the Republic of Macedonia, research showed that emotional neglect, physical abuse, and physical neglect were the most common ACEs that increased suicide risk (Raleva, 2018). Similarly, in Latvia, childhood emotional neglect and physical abuse exhibited the highest odds for attempting suicide in college within this sample of students (Springe et al., 2016).

***Western Europe.*** Research on ACEs and suicide in college and university students in the Western Europe is conducted across nine countries, including Germany, Belgium, France,



Netherlands, Spain, Northern Ireland, Ireland, England, and the United Kingdom ( $n = 15$ ; Bhargav & Swords, 2022; Blasco et al., 2019a, 2019b; Kaminer et al., 2022; Leung et al., 2020; Lin et al., 2020; Macalli et al., 2021; McLafferty et al., 2019, 2020; Miranda-Mendizabal et al., 2019; Mortier et al., 2017, 2021; O'Neill et al., 2018; Orri et al., 2022).

Five studies included students from Spanish universities ( $n = 5$ ; e.g., Kaminer et al., 2022). Three of these five studies included specific results on Spanish university students (Blasco et al., 2019a, 2019b; Miranda-Mendizabal et al., 2019). According to four different studies, research showed that childhood emotional abuse and bullying victimization were associated with the onset and persistence of suicidal ideation among college students in Spain (Blasco et al., 2019a, 2019b; Miranda-Mendizabal et al., 2019; Mortier et al., 2021). These findings are consistent with studies conducted among Chinese university students. In addition, parental psychopathology and emotional neglect were highly prevalent ACEs that were also found to contribute to suicidal ideation and attempts among Spanish university students (Blasco et al., 2019a, 2019b; Mortier et al., 2021). Consistent with research in other countries, bullying victimization, emotional and physical abuse, and parental psychopathology, were shown to be the most prevalent ACEs linked to suicidal ideation and attempts among college students in Germany and Belgium (Lin et al., 2020; Mortier et al., 2017, 2021). Research that focused on first-year university students in Belgium found that the first onset of suicidal thoughts and behaviors in college is higher than that of the general population. They also found that having an ACE history puts first-year students at greater risk for developing suicidal thoughts and behaviors for the first time in college (Mortier et al., 2017). These findings are consistent with research conducted among first-year Spanish university students.

In France, studies showed that bullying victimization and “parental maltreatment” (i.e., physical and emotional abuse) were connected to suicidal ideation and attempts among students in French-speaking universities. Studies in France also showed that losing a parent and exposure to parental psychopathology during childhood and adolescence are associated with suicidal ideation as a college student. The authors found that this finding was especially true when students had seen their parents struggle with depression, anxiety, and/or alcohol abuse (Macalli et al., 2021; Orri et al., 2022).

Lastly, solely one study was conducted in the Netherlands. The researchers of this study compared the experience of Dutch students to that of Chinese students in Hong Kong. The authors found associations between emotional and physical abuse and suicidal ideation in both Chinese and Dutch students. However, they also found that Dutch students experienced suicidal ideation at lower rates than Chinese students. The researcher attributed this finding to differences in buffers across college students of various racial/ethnic backgrounds (Leung et al., 2020).

Included studies that reported findings in the United Kingdom include the following: Northern Ireland, Ireland, England, and United Kingdom regions ( $n = 6$ ; Bhargav & Swords, 2022; Kaminer et al., 2022; McLafferty et al., 2019, 2020; Mortier et al., 2021; O’Neill et al., 2018).

Commonalities and differences were noted in three studies conducted in Northern Ireland (McLafferty et al., 2019; Mortier et al., 2021; O’Neill et al., 2018). Mortier et al. (2021) examined the relationships between ACEs and suicidality in nine countries, including seven high-income countries: Australia, Belgium, Germany, China, Northern Ireland, Spain, and the United States, and two upper middle-income countries: Mexico and South Africa. This study did not identify any similarities or differences in students across the countries; therefore, the findings

of this study are the same across the countries it included, including Northern Ireland. More specifically, this study found that bullying victimization, parental psychopathology, and emotional abuse were the three most common ACEs linked to suicidal thoughts and behaviors among first-year university students in Northern Ireland (Mortier et al., 2021). In accordance with other research, literature on college students in Northern Ireland found high prevalence rates of ACEs and suicidal thoughts and behaviors among first-year students (McLafferty et al., 2019; O'Neill et al., 2018). Moreover, one study found that students in Northern Ireland who were 21 years of age or older were less likely than younger students to engage in suicidal behaviors (McLafferty et al., 2019). A couple of studies found that female students in Northern Ireland were more likely to have higher rates of ACEs and suicidal thoughts and behaviors in college than their male counterparts (McLafferty et al., 2019; O'Neill et al., 2018). In addition, students in Northern Ireland with ACE histories displayed more suicidal thoughts and behaviors than those with no ACE history. Finally, a strong-dose response relationship between ACEs and suicidal ideation and behaviors was found. This meant that as the number of ACEs experienced increased, the chances of experiencing suicidal ideation and exhibiting suicidal behaviors in college increased as well among students in Northern Ireland (McLafferty et al., 2019; O'Neill et al., 2018). Overall, these findings are consistent with the research on ACEs and suicidality in college students as a whole.

As was the case in studies focusing on students in Northern Ireland, research on students in Ireland and the UK also found that ACEs were common in this subpopulation. One study from Ireland reported that students endorsed an average of 2.94 ACEs with 35.2% of the sample reporting 1-3 ACEs, and 39.6% reporting 4-12 ACEs, out of a list of 12 (Bhargav & Swords, 2022). The authors also found a strong dose-response relationship between ACEs and suicidal

ideation (Bhargav & Swords, 2022). Beyond examining the relationship between ACEs and suicidal ideation, the researchers also studied mechanisms that had an effect on the development of suicidal ideation in students with ACE histories. They found that perceived burdensomeness and thwarted belongingness had significant indirect effects on the development of suicidal ideation among students who had experienced ACEs (Bhargav & Swords, 2022). Lastly, a study that compared students studying in England to students in the U.S., Canada, South Africa, Spain, Argentina, and Uruguay, found that university students in England had lower ACE and suicidality scores than students in South Africa, Argentina, and Uruguay (Kaminer et al., 2022).

**South America.** Brazil, Argentina, and Uruguay are countries in South America that are covered by this systematic review ( $n = 2$ ; Costa et al., 2019; Kaminer et al., 2022). One study focused on exploring the relationships between ACEs and suicidality in graduate and undergraduate students in Brazil. This study did not report findings on specific ACEs, though like much of the current literature, the authors found that ACEs were linked to suicide attempts among university students in Brazil (Costa et al., 2019). Moreover, the researchers found that masters and doctoral students reported lower rates of suicidal ideation and behaviors than undergraduate students in Brazil. Regarding specific ages, they found that students under the age of 25 had 2.13 times a greater chance of developing suicidal thoughts and behaviors while studying at university in Brazil (Costa et al., 2019).

A different study was interested in the cross-cultural examination of ACEs and mental health among university students in the U.S., Canada, England, South Africa, Spain, Argentina, and Uruguay. This study found that students of South African, Argentinian, and Uruguayan descent did not differ from each other regarding the relationships between ACEs and suicidality,

though together reported a significantly higher number of ACEs and exhibited greater risk for suicide than university students in the U.S., England, and Canada (Kaminer et al., 2022).

**North America.** The research findings among the United States are found in a different section below (see USA Research). Outside of the U.S., three studies were conducted in North America, including Mexico and Canada ( $n = 3$ ; Kaminer et al., 2022; Mortier et al., 2021; Peter & Taylor, 2014). One study was conducted in Mexico and eight additional countries (Mortier et al., 2021). This study found that bullying victimization, parental psychopathology, emotional abuse, and physical abuse were most linked to suicidality among college students in Mexico (Mortier et al., 2021)

A different study compared students studying in Canada to students in the U.S., England, South Africa, Spain, Argentina, and Uruguay (Kaminer et al., 2022). This study found that students at university in Canada had lower ACE and suicidality scores than university students in South Africa, Argentina, and Uruguay (Kaminer et al., 2022). In addition, Peter and Taylor (2014) studied differences in suicidal ideation and/or attempts among students with ACE histories in Canada. The authors described the characteristics of the sample, which indicated that the majority of students who participated in this study self-identified as White (66.8%), followed by 27.4% “visible minority,” which included international students in Canada, and 5.7% as Aboriginal, First Nations, Metis, or Inuit. They reported that 14% of students were born outside of Canada, though did not assess the number of years in Canada or citizenship status of the students (Peter & Taylor, 2014). This study was interested in examining differences between LGBTQ+ and non-LGBTQ+ students regarding risk factors and prediction of suicidality. Consistent with other literature in this region, the authors found that LGBTQ+ students with

ACEs pertaining to bullying victimization and/or abuse from family were at greater risk for suicide ideation and attempts during university in Canada (Peter & Taylor, 2014).

**South Africa.** In the South African region, South Africa and Zambia were two countries that were included in this systematic review ( $n = 3$ ; Kaminer et al., 2022; Mortier et al., 2021; Zhang et al., 2020). As previously stated, Kaminer et al. (2022) studied the relationship between ACEs and suicidality in the U.S., Canada, England, South Africa, Argentina, and Uruguay. This study found that students in South Africa, along with Argentinian and Uruguayan students reported more ACEs and suicide risk than their peers in the U.S., Canada, and England. In addition, as stated above, Mortier et al. (2021) found that bullying victimization, parental psychopathology, emotional abuse, and physical abuse were the most prevalent ACEs linked to suicidality among college students, in South Africa. On the contrary, researchers in Zambia found that parental substance abuse or misuse, emotional abuse, and sexual abuse were ACEs that had the greatest impact on developing “suicide behaviors” among Zambian university students (Zhang et al., 2020). Gender differences in Zambia were also found. More specifically, the authors found that male students were more likely than female students to report having experienced parental substance abuse, physical abuse, and exposure to intimate partner violence in childhood (Zhang et al., 2020). Consistent with prior literature, Zhang et al. (2019) found a dose-response relationship with ACEs and suicidal ideation and attempts, noting that Zambian students with three or more ACEs were at highest risk for engaging in suicidal behaviors.

**Australia.** Mortier et al. (2021) conducted one of the largest studies on ACEs and suicidality in college and university students. This study spanned nine countries, including Australia; however, the researchers did not report specific findings based on country. Rather, the results are aggregated to include reports from all the countries included. As with Belgium,

Germany, China, Northern Ireland, Spain, U.S., Mexico, and South Africa, bullying victimization, emotional and physical abuse, and parental psychopathology, were shown to be the most prevalent ACEs connected to suicidal ideation and attempts among students in Australia (Mortier et al., 2021).

### ***USA Research***

Several studies on ACEs and suicidality among college and university students are conducted statewide within the U.S. ( $n = 25$ ; e.g., Karatekin, 2018). Of the studies conducted in the U.S., the most research was done in the Midwestern region of the U.S., ( $n = 9$ ; e.g., Gidycz et al., 2008), with three of the nine reporting specific states the research was conducted in, which included one study in Minnesota (Grigsby et al., 2020), one study in Wisconsin (Gibb et al., 2001), and another in Michigan (Bridgeland et al., 2001). Four studies were conducted in the southwestern region of the U.S. ( $n = 4$ ; e.g., Watts et al., 2022), with three studies specifying the states the research was conducted in, including New Mexico, California, Colorado, and Texas ( $n = 3$ ; Grigsby et al., 2020; Hsieh et al., 2022; Kaminer et al. 2022). Further, two studies stated they researched ACEs and suicidality in college students in the southeastern region of the U.S. ( $n = 2$ ; e.g., Arata et al., 2005), and one study specifically noted it recruited students from a university in Virginia ( $n = 1$ ; Kaminer et al., 2022). One study noted it was focused on students attending a university in the south central region of the U.S., without identifying the state ( $n = 1$ ; Brausch & Holaday, 2015), two others were said to be carried out in southern states, without specification of the states nor regions ( $n = 2$ ; Bryan et al., 2013; Burlaka et al., 2020). New York ( $n = 3$ ; Kaminer et al., 2022; Lawrence et al., 2005; Rodriguez-Srednicki, 2001) and Boston, Massachusetts, ( $n = 1$ ; Shapero et al., 2019), were two other states that were included within the U.S. studies. The remaining studies conducted in the U.S. did not further specify the location of

their studies ( $n = 6$ ; Aldridge Antal & Range, 2005; Burke et al., 2018; Puzia et al., 2014; Restrepo et al., 2016; Stepakoff, 1998; Yang & Clum, 2000).

**Midwest Region.** Several themes were found across nine studies in the midwestern region of the U.S. The first theme identified was a strong dose-response relationship between number of ACEs and suicidal ideation (Grigsby et al., 2020; Karatekin, 2018, Nilsen & Conner, 2002). Second, researchers found significant correlations between childhood sexual and/or physical abuse and suicidal ideation and behaviors, especially in female college students (Bridgeland et al., 2001; Gidycz et al., 2008; Langhinrichsen-Rohling et al., 1998; Roley et al., 2022; Thakkar et al., 2000). One study indicated that a history of childhood physical or emotional abuse, though not childhood sexual abuse was associated with suicidal ideation among female college students (Nilsen & Conner, 2002). Gibb et al., (2001) reported contradictory findings, specifically that childhood physical or sexual abuse was not associated with suicidal ideation, and only emotional abuse was. Lastly, one recent study also found that witnessing community violence in childhood was associated with suicidal ideation in college (Roley et al., 2022). Overall, it appears that findings among studies conducted in the Midwest vary regarding the impact of ACEs on suicidality in university students.

**Southwest Region.** Research conducted in the southwest region showed that students with ACE histories reported current suicidal ideation and suicide attempts in college (Grigsby et al., 2020; Kaminer et al., 2022; Watts et al., 2022). A different study in the southwest found that the relationship between ACEs and suicidality in college is amplified through students' feelings of perceived burdensomeness and thwarted belongingness (Hsieh et al., 2022).

**Southeast Region.** Two studies covered the southeast region of the U.S. ( $n = 2$ ; Arata et al., 2005; Kaminer et al., 2022). Both studies found a dose-response relationship between ACEs



and suicidal ideation, noting that the more ACEs a student had in childhood, the higher their likelihood of experiencing suicidal ideation in college was (Arata et al., 2005; Kaminer et al., 2022). Furthermore, a study in this region showed that many students who have experienced ACEs have experienced more than one ACE. This study also found that the most common types of ACEs students experienced were both childhood sexual and physical abuse (44%), childhood sexual abuse only (41%), and physical abuse only (35%; Arata et al., 2005).

**South Central Region.** One study was conducted in the south central region of the U.S. ( $n = 1$ ; Brausch & Holaday, 2015). Similar to the midwestern and southeastern regions of the U.S., this study found that childhood physical abuse was linked to suicidal behaviors in college. The study also found that college students with a childhood physical abuse history may have less fear of pain or death associated with suicide than students who did not experience childhood physical abuse. The authors posit that students with this ACE history may develop less fear of pain or death associated with suicide due to a possible habituation effect from childhood physical abuse (Brausch & Holaday, 2015).

**Additional Research in the South.** Two other studies were conducted in the southern region of the U.S. The specific cities or states of these two studies were not reported ( $n = 2$ ; Bryan et al., 2013; Burlaka et al., 2020). These studies further found concurring results, in that emotional, physical, and sexual abuse were linked to suicidal ideation, plans, and attempts among college students (Bryan et al., 2013; Burlaka et al., 2020).

**New York.** Some researchers focused on recruiting college students from universities in New York ( $n = 3$ ; Kaminer et al., 2022; Lawrence et al., 2005; Rodriguez-Srednicki, 2001). Consistent with other parts of the U.S., studies looking at students in New York found that as one's history of ACEs increased, suicidal ideation in college increased as well (Kaminer et al.,

2022). Another study found that female students with childhood sexual abuse histories reported more suicide attempts in college than students with no childhood sexual abuse history (Rodriguez-Srednicki, 2001). This finding is in alignment with research findings across the Midwest. A different study found that parental loss experienced in childhood was linked to experiencing suicidal ideation in college, especially when students had experienced the loss of their mother in childhood. This finding was significant among female college students (Lawrence et al., 2005).

**Boston, Massachusetts.** One study focused on college students studying in Boston, Massachusetts ( $n = 1$ ; Shapero et al., 2019). This study found that childhood emotional abuse and neglect were associated with suicidal thoughts and behaviors in college. In contrast, the study found that experiences of childhood physical abuse or neglect and sexual abuse were not associated with suicidal thoughts and behaviors in college (Shapero et al., 2019).

**Comparison to International Findings.** Consistent with the international literature, studies in the U.S. found the same effect between number of ACEs experienced and suicidality in college or university students. Specifically, findings showed that as the number of ACEs students in the U.S. had experienced increased, students' risk for suicide, suicidal ideation, and suicide attempts also increased (Arata et al., 2005; Grigsby et al., 2020; Kaminer et al., 2022; Karatekin, 2018; Langhinrichsen-Rohling et al., 1998; Nilsen & Conner, 2002; Watts et al., 2022).

Additionally consistent with international literature, studies in the U.S. showed that university students who reported more childhood emotional abuse experienced suicidal ideation at higher rates than students who did not have this adverse childhood experience (Burke et al., 2018; Burlaka et al., 2020; Gibb et al., 2001; Nilsen & Conner, 2002; Puzia et al., 2014; Shapero

et al., 2019). Moreover, one study indicated that individuals who reported a suicide attempt with the intent to die reported higher levels of childhood emotional abuse than students only reporting suicidal ideation. This finding highlights how the severity and frequency of one's childhood adversities, especially emotional abuse, can significantly increase one's risk of dying by suicide in college (Burke et al., 2018). On the other hand, alongside some international research, some U.S. studies found that experiences of childhood physical and sexual abuse were not significantly correlated to suicidal ideation or attempts in college (Gibb et al., 2001; Nilsen & Conner, 2002; Puzia et al., 2014; Shapero et al., 2019; Yang & Clum, 2000). However, there are a number of U.S. studies that do support a connection between childhood physical and/or sexual abuse and suicidal ideation or attempts later in college ( $n = 10$ ; Arata et al., 2005; Brausch & Holiday, 2015; Bridgeland et al., 2001; Bryan et al., 2013; Gidycz et al., 2008; Restrepo et al., 2016; Rodriguez-Srednicki, 2001; Roley et al., 2022; Stepakoff, 1998; Thakkar et al., 2000).

With regard to other ACEs, such as parental loss, one study conducted in upstate New York concluded similar findings to a study conducted in France. Both studies found a significant association between parental loss in childhood and suicidal ideation in college (Lawrence et al., 2005; Orri et al., 2022). Moreover, U.S. researchers found that when students had lost their mothers during childhood, they were more likely to exhibit higher rates of suicidal ideation in college than if they had lost their fathers. This finding was particularly true for female college students (Lawrence et al., 2005).

Differences between research conducted in the U.S. and internationally were also found. For example, one study found that in addition to all forms of childhood abuse and parental loss, witnessing community violence was also found to be significantly correlated with suicidal ideation in undergraduate students at a midwestern university ( $n = 1$ ; Roley et al., 2022). Another

difference that was found in one study indicated that childhood emotional neglect was associated with suicidal thoughts and “behaviors” in an undergraduate sample of students attending university in Boston, Massachusetts (Shapero et al., 2019).

## **Research Question 2**

How does the relationship between ACEs and suicide risk and/or attempts inform assessment and referral strategies in existing suicide prevention and/or intervention programs on college and university campuses?

### ***Lack of ACE-Informed Approach to Suicide Prevention and Intervention***

From the 64 included studies, no articles identified any existing ACE- or childhood trauma-informed suicide prevention or intervention programs. However, the majority of included studies incorporated discussion points regarding recommendations for college and university counseling centers to utilize ACEs and trauma-informed practices ( $n = 50$ ; e.g., Watts et al., 2022). Two other studies solely focused on providing recommendations for ACEs-informed suicide prevention and intervention for children and adolescents, and their families ( $n = 2$ ; Yang & Clum, 2000; Zhang et al., 2020). One study explored whether writing about one’s childhood experiences of physical or sexual abuse would help reduce anxious and depressive symptoms, and suicidal ideation (Aldridge Antal & Range, 2005). Of note, this was not an intervention that was utilized for students seeking treatment nor was it stated to be a regular practice for students in therapy at the university. Rather, the authors clarified that the students who participated in this experiment were solely research participants. The researchers found that while students’ symptoms of anxiety, depression, and suicidal ideation decreased, writing about one’s childhood abusive experiences did not contribute to these effects, and it is unclear what other factors may

have contributed to improvement among the students in this sample (Aldridge Antal & Range, 2005).

### ***Recommendations***

Despite the lack of any discussion of existing ACE and/or childhood trauma-informed assessment and referral strategies in suicide prevention and/or intervention programs on college and university campuses within the literature, many studies provide clear recommendations for how to incorporate ACE-informed suicide prevention and intervention practices within this setting.

The most common suggestion across studies was to screen for ACEs to identify students who are at high risk for suicide ( $n = 35$ ; e.g., Karatekin, 2017). These articles emphasized the importance of not only screening for history of types of ACEs students are exposed to, but also for their frequency, number, and length of exposures. Some studies identified specific ACEs to assess for, such as parental death or loss ( $n = 2$ ; Lawrence et al., 2005; Orri et al., 2022) and bullying/peer victimization ( $n = 3$ ; Lin et al., 2020; Macalli et al., 2021; G.F. Wang et al., 2020). One study advised that screening for ACEs among college students should be done “sensitively,” as some students may not want or need interventions (Bhargav & Swords, 2022).

Some articles urge university counseling centers and clinicians to take into account cultural considerations in suicide prevention and intervention on college and university campuses ( $n = 9$ ; e.g., Leung et al., 2020). Two studies focused on providing recommendations with regard to gender, and advised practitioners to pay attention to how different experiences of ACEs and varying risk and protective factors among males and females can impact what they turn to in order to cope with adverse childhood experiences ( $n = 2$ ; Grigsby et al., 2020; Miranda-Mendizabal et al., 2019). Two other studies highlighted factors that can be taken into

consideration when working with LGBTQ+ college and university students ( $n = 2$ ; Peter & Taylor, 2014; Y. Wang et al., 2021). These studies encouraged centers and clinicians to remain aware that LGBTQ+ students are at an increased risk for suicidality and have unique risk and protective factors than their heterosexual and gender conforming peers. Thus, the authors encouraged centers to adopt suicide prevention and intervention programs that are tailored for LGBTQ+ college and university students with an awareness of unique sexual and gender minority stressors and resilience in mind (Peter & Taylor, 2014; Y. Wang et al., 2021). Other authors generally discuss the importance of exploring clients' culture and context in crisis intervention or suicide prevention ( $n = 5$ ; Burlaka et al., 2020; Y. Chen et al., 2017; Hsieh et al., 2022; Leung et al., 2020; Singh et al., 2012). One study reported that students from certain backgrounds, for example, Chinese students, may engage in underreporting of symptoms and history due to cultural factors such as stigma and shame (Y. Chen et al., 2017). Another article recommends clinicians should understand how cultural differences and practices can contribute to suicide risk and be attuned to cultural differences to adequately obtain information and intervene (Singh et al., 2012). This may include being aware of religious and spiritual preferences as well (Burlaka et al., 2020). Specifically for students of Hispanic descent, one study indicated that it can be beneficial for clinicians to assess for feelings of burdensomeness within the cultural value of familismo and help students of Hispanic descent presenting with suicidal risk develop a strong ethnic identity (Hsieh et al., 2022).

Several articles emphasize the importance of creating a clinical atmosphere that is aware of and attuned to the impact of ACEs on one's mental health during college as well as suicide prevention practices. One example that is discussed in the literature is the recommendation for more education and training on ACEs in student populations and the long-term impact of ACEs

on student mental health and functioning ( $n = 3$ ; Bhargav & Swords, 2022; Kaminer et al., 2022; Watts et al., 2022). Several authors recommend clinicians receive specialized training on ACEs and trauma-informed care (TIC). Further, they recommend administrators hire providers who have specialized training in TIC. Another way creating a collegiate atmosphere that is aware of suicide prevention and the impact of trauma on suicide risk is encouraged is by informing campus partners, staff, faculty, and the general student body about suicide prevention and intervention programs in order for students in need to be referred more frequently and efficiently through various channels. Further, it is recommended that education and awareness about trauma and its impact on mental health and suicide risk is disseminated across such groups ( $n = 9$ ; Bhargav & Swords, 2022; Bridgeland et al., 2001; Lawrence et al., 2005; Low et al., 2017; McLafferty et al., 2020; O'Neill et al., 2018; Shapero et al., 2019; Springe et al., 2016; Zhou et al., 2022). One study indicated that expanding the college or university counseling centers' referral base to community providers who specialize in addressing issues related to the impact of ACEs in adults can also be helpful ( $n = 1$ ; Watts et al., 2022). A final consideration regarding administrative practices and clinician-focused considerations in trauma-informed care is remaining mindful of the impact of high trauma caseloads on mental health providers ( $n = 1$ ; Watts et al., 2022).

Other recommended interventions included strengthening students' positive coping skills and social supports ( $n = 12$ ; e.g., Ozakar Akca et al., 2021), increasing students' insight and awareness on how their experiences of ACEs can contribute to suicidal ideation in order to reduce feelings of self-blame and self-hatred ( $n = 1$ ; Puzia et al., 2014), utilizing feminist therapy to allow clients to express anger regarding the injustices they have suffered, especially with regard to childhood sexual abuse, and encourage participation in social and political action ( $n =$

1; Stepakoff, 1998), instilling hope ( $n = 1$ ; Stepakoff, 1998), providing more frequent counseling appointments ( $n = 1$ ; Watts et al., 2022), and referring students to group counseling where they can relate to others with shared experiences, support one another, and continue to learn coping skills ( $n = 6$ ; Lawrence et al., 2005; H. Liu et al., 2022; Restrepo et al., 2016; Stepakoff, 1998; Watts et al., 2022; Zhou et al., 2022). Across articles, traditional and third-wave cognitive behavioral therapies (i.e., CBT, ACT, and DBT interventions) have been suggested for use with college and university students with ACE histories ( $n = 7$ ; Bhargav & Swords, 2022; Bridgeland et al., 2001; Hsieh et al., 2022; Kiani et al., 2019; H. Liu et al., 2021; Restrepo et al., 2016; Y. Wang et al., 2022). More specifically, interventions such as cognitive structuring and behavioral activation and treatment goals such as decreasing avoidance, increasing acceptance and identification with all humanity, and increasing coping skills have been recommended in students presenting with suicidal risk and ACE histories.

Regarding further assessment beyond screening for ACEs, some authors have suggested that it can be helpful to assess students' fear of death or lack thereof ( $n = 1$ ; Brausch & Holaday, 2015), to screen for PTSD and complex PTSD among students with a history of ACEs and/or suicidal ideation and risk ( $n = 1$ ; Watts et al., 2022), and to comprehensively assess for suicidal ideation ( $n = 3$ ; Blasco et al., 2019b; Hsieh et al., 2022; Veleminsky et al., 2020).



## **Chapter 4: Discussion**

Despite the extant literature on ACEs and suicidality among college and university students, to this author's knowledge, no prior systematic reviews have comprehensively examined the relationship between childhood adversity and suicide risk or attempts among the college student population or examined ACE-or trauma informed suicide prevention or intervention practices on college and university campuses. Therefore, this study was designed to review the current literature, spanning from 1998 (when the original ACEs study was published) to 2022 to gather information about this relationship. This review further examined connections between the type, number, and timing of ACEs and suicide risk, and examined current suicide prevention and intervention programs and the extent to which they are ACEs- or trauma-informed. The study included U.S. and international-based research to elucidate similarities and differences in the relationship between childhood adversity and suicidality among college and university students across the globe. Further discussion of the current results, implications, and ideas for future research follows.

### **Prevalence Findings**

The primary goal of this systematic review was to shed light on the relationship between adverse childhood experiences and suicidality in college and university students. The results of the present study explicate this relationship by highlighting the prevalence of students' ACE histories and suicidality, as well as the impact of the number, type, and timing of ACE exposure(s) among college and university students across the globe. Across the included studies (spanning a range of 24 years), it is clear that college and university students experience alarmingly high rates of ACEs and suicidality, with a growing increase in both reported ACEs and suicidality over time. International and U.S. studies consistently reported that the majority of

student participants experienced at least one ACE and many experienced four or more ACEs throughout their childhood. The most commonly reported ACEs linked to college suicide risk and attempts were childhood sexual, physical, and emotional abuse. Rates of suicidality varied across countries and time; however, many studies found high prevalence rates for students with ACE histories experiencing suicidal ideation, having a plan for suicide, and/or attempting suicide. Studies that focused on the LGBTQ+ population found that students in this community reported higher rates of suicidal ideation and attempts, especially when a history of ACEs were present, compared to their non-LGBTQ+ peers with or without ACE histories. It is important for clinicians working with undergraduate and graduate students to be aware of the prevalence of such experiences and routinely screen for ACEs and assess suicide risk.

### **Impact of ACEs Findings**

Another goal of this systematic review was to expound on specifically how ACEs have an impact on the likelihood of suicide risk or attempts in college and university students. Results consistently showed that the more ACEs students experienced during childhood, the higher their likelihood of experiencing suicidal ideation or attempting suicide during college. In other words, studies found that there was a positive, linear, and strong dose-response relationship between the number of ACEs students experienced and suicidal ideation and/or suicide attempts as a college or university student. One study that spanned nine countries found that the frequency of ACE(s) exposure, especially with certain types of ACEs such as childhood physical, sexual, or emotional abuse, and bullying victimization, can additionally escalate students' suicidal ideation into a suicide plan or attempt in college (Mortier et al., 2021). It is beneficial for providers working with undergraduate and graduate students to be aware of the number and frequency of ACEs their clients have experienced, as well as their level of suicide risk (e.g., type of suicidal ideation

and/or behaviors), to be able to more appropriately and effectively intervene during treatment. It is also recommended that clinicians consider how specific ACEs experienced can contribute to students' suicide risk.

A thorough review of the literature revealed that childhood abuse (sexual, physical, and emotional) is most highly correlated with suicidality during college. It is important to note that these types of ACEs have also been studied more frequently compared to other ACEs, which may skew the results. Other ACEs, such as bullying victimization, parental psychopathology, emotional neglect, physical neglect, parental substance abuse, witnessing domestic violence, living with a low socioeconomic status, and witnessing community violence were also found to have strong associations with suicidal ideation and/or attempts as a college or university student. College and university counseling centers, and any clinicians working with this population, are encouraged to pay attention to the impact all potential ACEs may have on a student. Another area of consideration is the timing of ACE exposure(s). One study conducted in China found that experiencing sexual abuse early in life and multiple times throughout childhood put male and female students at greater risk for experiencing suicidal ideation, plans, preparations, and attempts as a college student. Further attention on the timing and frequency of ACE(s) exposure can add to a greater understanding of students overall, as well as their risk levels.

This systematic review found mixed results regarding gender differences. Most studies concluded that females with ACE histories were at greater risk of suicidal ideation and attempts than their male counterparts, while other studies found no gender differences. It is important to note that the majority of the research focused on female college and university student participants, which may have impacted the overall findings. Research that focused on LGBTQ+

college students found that LGBTQ+ students with ACE histories are at higher risk for experiencing suicidal ideation or attempting suicide in college than their non-LGBTQ+ counterparts. With regard to year in college, and comparisons between undergraduate and graduate students, the included studies showed that students of younger age, especially those entering college for the first time, are at greater risk for suicide when there is a history of ACEs. This finding appears consistent across U.S. and international studies. Moreover, results suggest that while graduate students have high prevalence rates of ACEs and suicidal ideation, they are less at risk of acting on suicidal thoughts and are overall at lower risk for suicide attempts than their undergraduate student counterparts (Costa et al., 2019). Research suggests that graduate students are at lower risk for completing suicide likely due to having a prior educational degree and experience with overcoming life transitions or adjustments. In summary, having gone through prior challenges, graduate students are likely to have developed stronger coping skills over time to more effectively manage future stressors without the emergence of suicidal thoughts, or effectively manage suicidal thoughts without acting on them (Costa et al., 2019). Undergraduate students majoring in psychology were shown to have high rates of childhood physical and sexual abuse and suicidal ideation.

### **International Findings**

A wealth of the literature on ACEs and suicidality in college and university students was conducted internationally. Notably, research in countries outside of the U.S. confirms the strong dose-response relationship between exposure to ACEs and suicidality during college, as well as high prevalence rates of ACEs associated with suicidality during college years. Much of the international research was conducted in China, where researchers found a high prevalence of childhood emotional abuse associated with suicidality during the college years. Other forms of

ACEs, such as childhood physical or sexual abuse and bullying victimization were also common and strongly associated with suicide ideation and attempts in college. Furthermore, results suggested that Chinese male students are at greater risk for suicide than female students.

Similar to research in China, studies that included Spanish university students found that childhood emotional abuse and bullying were associated with the onset and persistence of suicidal ideation in college. Childhood emotional neglect and living with a parent with mental illness were additional ACEs associated with suicidality among this population. Research focusing on students in Northern Ireland also noted similar findings. One difference was that female students in Northern Ireland were more likely to experience higher rates of ACEs and suicidal thoughts and behaviors than their male counterparts.

High prevalence rates of ACEs and suicidality were also found in Southeast Asian countries. Notably, among medical students in Vietnam, students reported experiencing high rates of childhood emotional and physical abuse, and witnessing domestic violence, which were associated with suicidal ideation during medical school. Childhood sexual abuse was another common ACE among Vietnamese medical students and undergraduate students in Southeast Asia. Another notable finding was that childhood emotional neglect was significantly associated with suicidal ideation and attempts during college in Indonesia.

Within Eastern Europe, consistent with research across the globe, researchers found that students with a history of ACEs were at greater risk for experiencing suicidal thoughts and attempting suicide in college compared to students without any ACE history. Research in Eastern Europe showed that more female than male students with ACE histories reported suicide attempts in the Czech Republic, Republic of Macedonia, and Latvia, which is consistent with findings from Northern Ireland, but in contrast to findings from Vietnam. Similar to other

countries, experiences of childhood emotional abuse were most commonly associated with suicidality among students in the Czech Republic. In addition, within the Czech Republic, having experiences of childhood emotional, physical, or sexual abuse, or being exposed to parental psychopathology or substance abuse, losing a parent to suicide, and parental separation all increased the risk of attempting suicide more than other ACEs. However, in the Republic of Macedonia, childhood emotional or physical neglect and physical abuse were most associated with suicide attempts, which was similar to Latvia, where emotional neglect and physical abuse were the ACEs associated with the highest odds of attempting suicide during college.

Among studies conducted in Western European countries, researchers found that childhood emotional and physical abuse and bullying victimization were the most prevalent ACEs associated with suicidal ideation and attempts in college students in Belgium and Germany. In France, in addition to these ACEs, losing a parent and exposure to parental psychopathology were also associated with suicidal ideation. Results from one study compared experiences of Dutch students in Netherlands to Chinese students in China and found that Dutch college students experienced suicidal ideation at lower rates than Chinese students, likely due to differences in contextual factors that buffered the experiences of ACEs such as childhood emotional and physical abuse.

It appears that the most common ACEs experienced by students outside of the U.S. are childhood emotional or physical abuse, bullying victimization, and parental psychopathology. As with other nations, these ACEs were most strongly associated with suicidality in college students in Mexico, South Africa, Australia and India. Parental substance abuse and childhood sexual abuse also had a strong impact on the development of suicidal behaviors in college students in Zambia. In Turkey, experiences of childhood sexual abuse among university students were found

to be most associated with suicidal thoughts and behaviors. In Iran, researchers studied multiple ACEs though combined all experiences as “childhood traumatic experiences” when reporting results. Despite this, results show that, in Iran, experiences of ACEs and suicidal ideation are strongly associated among university students. One study that examined ACEs and suicidality across multiple countries found that students in Canada, England, and the U.S. had lower ACE and suicidality scores than students in South Africa, Argentina, and Uruguay (Kaminer et al., 2022).

Altogether, it is important to be mindful of the similarities and differences of the experiences of ACEs and suicidality across cultural contexts. This systematic review is not all-encompassing of cultures, and it is equally important to consider the nations that are not researched. While examining the literature and working with students of diverse cultural backgrounds, it can be additionally essential to consider other childhood experiences that have the potential to be traumatic that are not researched or included in this systematic review, such as exposure to war, terrorism, revolutions, and additional exposure to community violence and stressors. Such experiences and the meaning one makes of them can contribute to toxic stress and influence one’s worldview and general belief systems about others and themselves. Such experiences may also be associated with suicidality later in life during undergraduate or graduate school years. Therefore, it is important to remain open to learning about clients’ unique experiences, assess all types of ACEs, and the potential impact of exposure to such experiences.

Contextual factors can increase the risk for ACE exposure and subsequent suicidality as a college or university student. Thus, in working with culturally diverse students, it is vital for clinicians to consider contextual factors such as socioeconomic status, personal and familial health status, type of environment the student was brought up in (i.e., urban, rural, or suburban),

and the nature of family relationships, to name a few. It can also be beneficial for providers to explore the meaning college students make of their experiences, as the impact and meaning of such experiences is likely to vary across cultural contexts. Engaging in this exploration alongside clients can empower clients and provide clinicians with a better understanding of the culturally diverse individuals they work with. Such exploration may also reduce any potential harmful biases or assumptions clinicians may have held, and increase the likelihood of preventing suicide or intervening effectively throughout crises situations.

### **Findings Comparing International and U.S. Research**

Literature focusing on exploring the relationship between ACEs and suicidality among college and university students in the U.S. spans several states, including the Midwest, Southwest, Southeast, South Central regions and other states in the east coast such as New York and Massachusetts. Overall, findings in the U.S. are consistent with aforementioned international findings. For instance, studies conducted throughout the U.S. have also found a strong dose-response relationship between the number of ACEs and likelihood of suicidal ideation and attempts in college. Like other countries, research conducted in the U.S. showed that students with experiences of childhood emotional abuse reported higher rates of suicidal ideation than those who did not endure such abuse. Another similarity to international research were mixed findings regarding the impact of experiences of childhood physical and sexual abuse. Some studies in the U.S. found significant associations between childhood physical and sexual abuse and suicidal ideation or attempts, while others did not. Other ACEs, such as parental loss, witnessing community violence, and experiences of childhood emotional neglect were also associated with suicidal thoughts and behaviors among students in the U.S.



## **Mechanism Findings**

Interestingly, some studies explored the mechanisms that either increased or decreased the likelihood of suicidality among students with a history of ACEs. Results suggested that students' sense of university community membership, emotional competence, and resilience served as protective factors against suicide. In contrast, feelings of hopelessness, deficits in cognitive functioning and problem-solving, perceived burdensomeness, thwarted belongingness, rumination, dysfunctional attitudes, habituation to pain due to history of childhood physical abuse, past suicide attempts, low or no identification with humanity and emotional dysregulation served as risk factors that promoted the likelihood of suicidality in college and university students. It is recommended that clinicians implement interventions to bolster students' sense of university membership, emotional competence, and resilience while utilizing cognitive restructuring techniques to reduce feelings of burdensomeness and teaching coping skills such as mindfulness and self-compassion to increase identification with all humanity and emotional regulation.

## **Recommendations for ACE-Informed Suicide Prevention and Intervention**

There is no gold-standard or systematic ACEs- or trauma-informed practice of preventing or intervening with students experiencing suicidal ideation/behavior on college and university campuses worldwide. However, the information gleaned from this systematic review may be beneficial for college and university counseling centers and practitioners working with college and university students outside of the campus setting.

Based on the research findings, a primary recommendation for college and university counseling centers and clinicians working with undergraduate or graduate students is to screen for all ACEs, whether it be through campus-wide screeners students can elect to participate in

with informed consent and follow-up by the counseling center (e.g., individual therapy, outreach and workshops) to mitigate against any distress that may arise for students who complete the screening, or during the intake or triage assessment process when students seek services at a counseling center. When conducting such screenings, it is recommended that the assessment not only examine students' history of types of ACEs, but also their onset, frequency, and length of exposure(s). It is critical to consider cross-cultural factors in suicide prevention and intervention. This may be done through assessment and awareness of specific ACEs that may impact some populations more than others, whether with regard to race, ethnicity, SES, gender, sexuality, religion or spirituality, age, immigration status, and/or student status (e.g., first-generation, international student) and exploration of the meaning students make of their experiences. For example, students from differing backgrounds and intersecting identities may turn to different methods to cope with the impact of their adverse childhood experiences. Being mindful of what students use to cope (e.g., self-harm, rumination, substance abuse, etc.) may inform intervention and treatment planning. Providers are encouraged to keep in mind potential cultural differences in talking about ACEs and suicide among college students. It is also essential for providers to remember that students from various communities, for example, LGBTQ+ students, have unique risk and protective factors in comparison to their heterosexual and gender-conforming peers, therefore when intervening before, during, and after crisis and in overall suicide prevention efforts, it is helpful to remain aware of minority stressors and resiliency factors that pertain to the community. Another way clinicians can consider cultural and contextual factors is through fostering a strong understanding of how cultural differences and practices can contribute to suicide risk. Another factor clinicians must be aware of is potential underreporting of symptoms

and history due to cultural factors such as stigma, shame, or saving face, especially for students who identify with collectivistic backgrounds.

It is also recommended for clinicians to comprehensively assess for suicide risk, which includes a thorough evaluation of the presence of students' past or current suicidal ideation, methods, means, plans, preparations, attempts, and self-harm behaviors. It is recommended that university counseling centers adopt and implement suicide prevention and crisis intervention trainings that are ACE-informed and require clinicians at all levels (licensed and pre-licensed) to engage in ACE-informed suicide prevention and crisis intervention trainings.

Another recommendation is for clinicians to learn more about the mechanisms that may increase or decrease one's likelihood of experiencing suicidal ideation or attempting suicide. Themes of perceived burdensomeness and thwarted belongingness serve as risk factors that increase the likelihood of suicide. In preventing suicide or crisis intervention, it is recommended that clinicians listen and attune to the presence of such themes within students' belief systems and work to reduce thoughts and feelings of burdensomeness while increasing feelings of belongingness, either through utilization of cognitive restructuring techniques or by helping students build supportive social networks.

In addition to being attuned to cultural factors and mechanisms that serve as pathways to reduce or increase suicide risk, it is just as vital for clinicians to be trauma-informed through education and training in TIC and their own self-care practices. College and university counseling centers can work to provide further trainings on TIC and hire staff that specialize in treating the impact of childhood trauma on young adults and suicidality. Moreover, college and university counseling centers may inform campus partners, general staff and faculty, and the student body about suicide prevention and interventions programs to assist with more frequent

and necessary referrals to care and to spread awareness and education about trauma and its impact on mental health and suicide. To mitigate potential experiences of high stress and/or vicarious trauma among counseling center clinicians, counseling centers may consider expanding their referral bases to community providers who can provide specialized care pertaining to the impact of ACEs in adults.

Within the context of treatment, it is recommended that clinicians work to strengthen students' positive coping skills and social supports, support students in increasing their insight and awareness into how experiences of ACEs can contribute to suicidal ideation, instill hope for a better future, increase one's identification with humanity, and offer referrals to group therapy so that students can be part of a group where they can relate to others with shared experiences, provide and receive support, and continue learning coping skills. Traditional and third-wave cognitive behavioral therapies like CBT, ACT, and DBT may be useful treatment modalities in therapy that can go hand-in-hand with the aforementioned recommendations. These approaches may be beneficial in reducing suicide risk in college students with ACE histories through use of specific interventions, such as cognitive restructuring, behavioral activation, increasing awareness of the connection between thoughts, feelings, and behaviors, behavior modification, values exploration to increase personal meaning and purpose, and distress tolerance skills. Interventions from these modalities may target mechanisms that reduce suicidality among college students, including resilience, emotional competence, and fostering a sense of community membership.

## Limitations

This systematic review is not without limitations, which can be viewed through two distinct lenses; the first concerns the limitations of the individual articles included within this review and the second regards the current systematic review as a whole.

Beginning with the assessment of individual articles included within this review, a quality appraisal process was utilized to assess the overall quality of the included studies. The quality appraisals were ranked as strong, good/adequate, weak, missing, and N/A was used when a certain domain was not applicable to an individual study. A strength of the included articles was that the majority (62.5%) were identified as strong ( $n = 40$ ; e.g., O'Neill et al., 2018). Additionally, most of the included articles were large-scale studies with samples of hundreds to thousands of participants, thereby increasing the strength, representativeness, and generalizability of the results. However, of the included articles, a significant portion (35.9%) were also rated as good/adequate ( $n = 23$ ; e.g., Gidycz et al., 2008). Of these articles, the main areas of concern were related to generalizability, recruitment, sample selection methods, a lack of discussion regarding salient study limitations, or lack of consideration of culture or diversity.

Another notable limitation was that many researchers combined several ACEs that were examined into one category and did not report findings specific to certain types of ACEs. In these studies, findings were reported as “child maltreatment” or “child abuse,” for example, when multiple types of ACEs were studied within the research article. This practice limits readers from knowing further about certain types of ACEs and limits one’s understanding of the nuances that exist in the relationship between certain types of ACEs and suicidality in college and university students. Despite this limitation, this systematic review contains information regarding the impact of certain ACEs on suicidality in college and university students. Much of

the literature on ACEs in this population emphasized exploration of different types of childhood abuse (i.e., emotional, physical, and sexual abuse), therefore, the results of this systematic review contain the most information on these types of ACEs. This is a strength of the systematic review, as it allows readers to have a more in-depth, nuanced understanding of the impact of such ACEs. However, other ACEs, especially more recent and contextual ACEs, such as felt discrimination or witnessing community violence, are understudied, which limits one's understanding of the long-term mental health impacts in students who have endured these adverse experiences in childhood. A final limitation within the individual articles was that many of the studies recruited participants from psychology courses for the purposes of obtaining course credit. In doing so, some of these samples likely represent a subgroup of individuals whose experiences of childhood adversity and suicidality may not generalize to all college and university students.

Regarding study design across the systematic review as a whole, majority of the included articles were cross-sectional in nature, as longitudinal research among college and university students who have ACE histories and experienced suicidal thoughts and behaviors are limited or short-term. For example, some studies included a follow up assessment to compare and contrast students' symptoms and wellbeing to that of their baseline at the initial point of study. Due to these limitations, one cannot assume causality between students' experiences of ACEs and suicidality later in life during college or graduate school years. Another limitation among the studies included was that much of the results stemmed from self-reported data across research articles, which may be subject to recall bias and response bias. To ameliorate this limitation, future studies may involve additional forms of assessment such as interviews to reduce the likelihood of such biases during data collection. Moreover, this systematic review was quantitative in nature. By focusing on quantitative research, the review lacked unique details and

multi-layered differences in experiences that may have been present in qualitative studies. Therefore, the current review may lack detailed information that may have been derived from structured interviews or open-ended questions in qualitative research. By not including qualitative research on adverse childhood experiences and suicidality among university and college students, the data collected may miss detailed information, experiences, and the impact adverse childhood experiences can have on students. Furthermore, this systematic review included research studies published in the English language only, which potentially excluded valuable data published in other languages regarding the relationship between ACEs and suicidality in college and university students. Regarding participant characteristics, this study focused only on samples that included students who were enrolled in institutions of higher education; therefore, the findings may not be generalizable to the broader population.

Most studies included in this systematic review reported sample characteristics with regard to gender, race, and ethnicity and some reported the breakdown of participants with regard to sexuality. However, most studies do not report specific results as they pertain to participants' other identity factors (e.g., sexual identity, religious identity, SES, citizenship status, or student status), which is another limitation. Furthermore, the majority of the literature in this area has focused on students within dominant groups (e.g., White students). In addition, a large portion of the included studies looked at female participants only and articles that included both male and female participants had higher numbers of female participants, which may limit generalizability of the studies. Future studies on ACEs and suicidality in college and university students should work to include diverse samples and findings as they pertain to students' unique intersectionality. Specifically, it can be beneficial for research to examine and include findings on transgender or gender non-conforming students, individuals who belong to sexual minority

groups, students of various racial, ethnic, religious, and socioeconomic backgrounds, students with disabilities, non-traditional students, transfer students, undocumented students, and immigrant and/or international students.

A final limitation of this systematic review as a whole is that there were no studies that reported on existing ACEs or trauma-informed suicide prevention or intervention, assessment, referral strategies, or programs. Studies that provided recommendations for college and university counseling centers working with students with a history of ACEs and current suicidality did so within their respective discussion sections. Thus, there are no current existing systematic ACE- or trauma-informed methods on preventing suicide or intervening with suicidal college students. Moreover, some studies provided information solely on ACEs prevention and intervention in childhood and adolescence, such as systematic training in elementary, middle, and high schools and parenting skills (e.g., Hughes et al., 2019; Zhang et al., 2020; Yang & Clum, 2000; Gidycz et al., 2008). While this is beneficial knowledge for students, teachers, administrative staff, and families prior to college and/or graduate school attendance, it is not the focus of the current systematic review.

Despite these limitations, steps were taken to increase the quality and strength of the systematic review. To minimize bias in the implementation of the methodology, master's-level students in psychology were recruited as research assistants to participate in the screening, data extraction, and quality appraisal process. Additionally, inter-rater reliability of at least 80% was established between the research assistants and primary researcher to enhance the consistency of rating procedures. The systematic review additionally included a quality appraisal process, which allowed for the overall quality of the literature to be assessed. This quality appraisal process was completed following the data extraction process in an effort to minimize bias in the overall



selection of articles. However, to enhance the quality of the literature used within this review, a cutoff score could have been developed for the Quality Appraisal Form and implemented into the eligibility criteria to exclude articles that were not strong in quality.

### **Recommendations for Future Research**

Despite the numerous studies included in this systematic review, more research on ACEs and suicidality among college and university students is needed to better understand this relationship across a variety of ACE types. The majority of the research in this area is focused on the original ten ACEs, which focuses on childhood abuse, neglect, and household dysfunction. More specifically, the research emphasizes childhood abuse (i.e., childhood emotional, physical, and sexual abuse). Other forms of ACEs, especially ACEs pertaining to contextual and systemic factors (e.g., experiencing collective violence, felt discrimination, growing up in foster care, etc.), have not received the same attention in the current literature; therefore, it would be beneficial for future research to emphasize additional ACEs to examine the relationships between these experiences and later suicidality during college years. Moreover, further research on the duration, onset, frequency, and intensity of adverse childhood experiences can provide deeper insight into whether these variables additionally heighten college and university students' risk for suicide.

Furthermore, more longitudinal research with multiple follow up assessments may aid in better understanding the impact of early adversity on suicide risk in college students and formulating interventions to ameliorate this impact as students' academic careers progress. Regarding data collection methods, future research may benefit from including multiple forms of assessment beyond self-reported data, such as semi-structured interviews that can add greater

depth to the understanding of the relationship between suicidality and ACEs in college and university students.

Moreover, further examination of mechanisms that potentially mediate the relationship between adverse childhood experiences and suicidality in college years is indicated. Research on mechanisms that drive or perpetuate suicidal risk in students with a history of ACEs may support further development of tailored interventions. Specifically, it would be beneficial for future studies to focus on the role of students' deficits in cognitive functioning which includes one's self-esteem, feelings of hopelessness, and problem-solving deficits, perceived burdensomeness, thwarted belongingness, rumination patterns, personality and dysfunctional attitudes, habituation to pain, past suicide attempts, low or no identification with humanity, social maladjustment, and emotional dysregulation. Research on these mechanisms can extend the literature beyond identifying ACEs that increase suicide risk towards a greater understanding of the processes through which they confer heightened risk. Taking the research a step further can include examining whether interventions targeted towards reducing the deleterious effects of these mechanisms (e.g., helping students develop adaptive emotional regulation skills, reducing feelings of burdensomeness, increasing feelings of belonging within the campus, etc.) are useful and effective interventions in reducing student suicidality.

Future studies should also work to recruit and report specific findings among students belonging to various diverse cultural groups. Further attention should be given to students belonging to ethnic and racial minority groups, LGBTQIA+ students, and undocumented, transfer, first-generation, and international students, as many individuals who belong to one or more of these cultural groups may face minority-related stressors that can interact with one's experiences of childhood adversity. Involving diverse samples can more accurately reflect

current student populations and support generalizability of future findings. Beyond involving diverse and inclusive samples and reporting specific findings pertaining to individuals who come from various cultural backgrounds, future research may also investigate more nuanced cultural elements, such as acculturation, cultural traditions and values, and within group differences that may exist across cultures to add more depth to cross-cultural findings.

Regarding suicide prevention and intervention practices on college and university campuses, research on ACE and/or trauma informed practices are indicated. In addition, research that addresses the effectiveness of such interventions to reduce the frequency and intensity of suicidal thoughts and behaviors among students, or to change overall help-seeking behavior and linkage to treatment, as well as secondary and tertiary suicide prevention is warranted.

### **Research Implications**

College and university students who have endured adverse childhood experiences may experience long-lasting negative mental health outcomes, such as suicidality, and may need additional clinical attention and support during their time in college. This systematic review has direct relevance to leaders of colleges and universities not only to gain a greater understanding of the complex relationship between ACEs and suicidality within the student population, but also to develop and plan for how to better support students with ACE histories throughout their academic careers.

To begin, the literature has demonstrated a strong recommendation for counseling centers to consider screening for ACEs to detect students who are at risk for suicide. It is recommended that college and university counseling centers utilize consistent and standardized measures that encapsulate all forms of ACEs, including additional contextual and systemic ACEs to determine the extent, frequency, and duration of adverse childhood experiences students have endured, and

the likeliness of future negative impact on their mental health and suicide risk. Beyond detection, research points to the importance of securing effective supports (e.g., outreach from counseling center, offering trauma-informed individual and group therapy services, providing referrals) for students with ACE histories, and tailoring approaches to meet the needs of all students, including those who have marginalized identities and may benefit from different interventions and/or outreach to prevent suicide and intervene before, during, and after crises situations. Ultimately, the literature suggests it may be beneficial for policies to become trauma-informed in order for students who are at heightened risk for suicide to be identified at earlier stages, such as before entering college or university. Identifying students who are at risk for suicide before they begin college or university may aid administrators in increasing protective factors and supports, and preventing suicide in a more timely and effective manner based on students' unique adverse experiences, identities, and needs. All efforts to intervene or prevent suicide may benefit from recognizing and addressing sociocultural factors that are inevitably present within each students' unique circumstances.

In addition to the suggestion to conduct screenings for ACEs, the literature highlighted several mechanisms through which one's experiences of ACEs may heighten their risk for suicide. It may be beneficial for college and university counseling centers to conduct research on such mechanisms (e.g., perceived burdensomeness, thwarted belongingness, feelings of helplessness, deficits in emotional regulation or problem solving skills, social support) to determine which students are at greater risk for suicide and whether addressing these mechanisms directly reduces overall risk for suicide. It may also be helpful for research to focus on testing interventions that have been shown to reduce suicidality (e.g., increasing emotional regulation skills).

Furthermore, the literature highlighted the imperative need for systems to be trauma-informed. In addition to the assessment and treatment of students with ACE histories, steps can be taken to make campus spaces and staff more attuned and responsive to students with a history of adverse childhood experiences. For instance, this may include explicitly defining what trauma-informed care is to all staff that interacts with students. Namely, trauma-informed care can be defined as a lens that recognizes the widespread impact of trauma, recognizes the signs and symptoms of trauma, understands multiple potential paths to recovery, and integrates knowledge about trauma into policies, procedures, and practices. Providing regular trainings on trauma-informed care may also assist in creating an environment that is more responsive to students with ACE histories. The review also demonstrates that infusing trauma-informed care practices into suicide prevention and intervention includes prioritizing clinician self-care and remaining mindful of the impact of working with caseloads with high trauma and risk. The systematic review has provided information about referral strategies for counseling centers to have an expanded referral base to providers who work with adults with ACE histories and suicidality. Counseling centers may also practice providing referrals and resources that holistically address students' risk for suicide and improve overall mental wellbeing. These resources and referrals may include tailored outreaches to student groups, group counseling and workshops, and other resources to help students feel connected and supported within various communities and live a life worth living.

## **Conclusions**

The present study disseminates knowledge on the relationship between college and university students' experiences of ACEs and suicidality, and addresses gaps within the literature and current suicide prevention and intervention practices on college and university campuses.

This systematic review intended to raise awareness around the unique challenges that college and university students face and the impact their developmental years have throughout young adulthood. The review connects the impact of various types, numbers, and timing of exposure to ACEs across cultural contexts and their connection to suicidality among college and university students, while noting similarities and differences in experiences depending on students' location, as well as on the basis of gender, race or ethnicity, sexuality, year in college, whether a student is an undergraduate or in graduate school, and/or studying psychology. It is understood that students' exposure to multiple types of ACEs and exposure to particular ACEs heightens one's risk for suicide as a college or university student. With a greater understanding of the prevalence of ACEs within this population and of the relationship between adverse childhood experiences and suicidality across all groups considered in this study, this systematic review provides instrumental insight into utilizing a trauma-informed approach to suicide prevention and intervention among the college and university student population.

In addition to raising awareness, this study identified ways in which college and university counseling centers can increase support for students who have experienced one or more ACEs. Several studies in this systematic review highlight mechanisms that further contribute to heightened risk of suicide in students with a history of ACEs. This information provides recognition of practices counseling centers may implement to further research the effectiveness of utilizing interventions that directly influence such mechanisms to reduce overall risk for suicide and instill their use in daily suicide prevention and intervention programming. Ultimately, this systematic review provides not only an understanding of the relationship between adverse childhood experiences and suicide risk and attempts among college and university students, but also informs potential assessment and referral strategies college and

university campuses may utilize to prevent suicide and intervene before, during, and after crises situations. Moreover, the information gleaned from this systematic review is not limited to supporting colleges and universities and may also be beneficial to private practitioners and clinicians working in other settings with college-aged students.

This study on ACEs and suicidality within the college student population has yielded important data about how affected students can be supported. The hope is that leaders of colleges and universities will use the results of this review to support all students who have endured childhood adversity, to inform the appropriate treatment of individuals directly impacted by ACEs, and to aid in developing suicide prevention and intervention programming with a childhood trauma-informed perspective in mind. This can be achieved through a multi-faceted and sustained approach in which both students' histories and current wellbeing and risk for suicide, as well as college and university counseling centers and clinicians' preparedness to respond and prevent suicide are taken into consideration.

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**Table 1***Included Studies*

Document ID#	Abbreviated Reference: Author and Year	Study Design	Location	Sample Size	Age	Gender	Race & Ethnicity
36	Aldridge Antal & Range, 2005	cross-sectional	USA	85	not specified	not specified	not specified
44	Arata et al., 2005	cross-sectional	USA	384	range: 17- 61 years old mean: 20.4	male and female	71.4% White, 18% African Americans, 2.9% Asian-American, 1.8% Hispanic, 0.8% Native-Americans, and 4.7% classified themselves as Other.
38	Bhargav & Swords, 2022	cross-sectional	Ireland	321	range: 18-25 years old	male and female	not specified
26	Blasco et al., 2019a	longitudinal	Spain	1248	range: 18-24 years old	male and female	Spanish university students; no other specifics noted
52	Blasco et al., 2019b	cross-sectional	Spain	2118	range: 18–24 years old	male and female	Spanish university students; no other specifics noted
54	Brausch & Holaday, 2015	cross-sectional	USA	212	mean:18.83	male and female	71% White, 19% African American, 5% Hispanic, 2% Asian, 2% “multi-ethnic”
65	Bridgeland et al., 2001	longitudinal	USA	The number of the respondents in 1998 was 1520 while there were 958 respondents in 1992.	not specified	male and female	not specified
57	Bryan et al., 2013	cross-sectional	USA	309	range: 18-49 years old mean: 19.83 years	male and female	51.5% White, 10.7% African American, 10.4% Asian, 0.6% Native Hawaiian/Pacific Islander, 0.6% Native American, and 26.2% “other.” Approximately half (43.7%) additionally endorsed Hispanic/Latino ethnicity.
30	Burke et al., 2018	cross-sectional	USA	520	not specified	male and female	White, African American, Asian, Biracial, other
47	Burlaka et al., 2020	cross-sectional	USA	185	range: 19-56 years old mean: 26.21	male and female	51% White, 44% Black, 5% other racial groups.

Document ID#	Abbreviated Reference: Author and Year	Study Design	Location	Sample Size	Age	Gender	Race & Ethnicity
7	Y. Chen et al., 2017	cross-sectional	Wuhan, China	507	range: 18-24 years old	male and female	not specified
8	LR. Chen et al., 2021	cross-sectional	China	4034	range: 18-25 years old mean: 20	male and female	not specified
37	Costa et al., 2019	cross-sectional	Brazil	158	not specified	male and female	not specified
39	Eskin et al., 2005	cross-sectional	Turkey	1262	range: 17-43 years old mean: 21	male and female	Turkish
14	Gibb et al., 2001	2.5 year prospective follow up study	USA	297	not specified	not specified	not specified
43	Gidycz et al., 2008	prospective design, baseline assessment and a 3-month follow-up assessment	USA	431	"Majority were either 18 or 19" years old	female	93.7% White, 1.5% African American, 2.2% Asian American, 1.5% Latino, and 1.1% Other.
4	Grigsby et al., 2020	cross-sectional	USA	Total N = 12039; California = 3880, Texas = 451, Minnesota = 7708	range: 18-29 years old	male and female	"non-Hispanic White, Black/African American, Hispanic, and other"
23	He et al., 2021	cross-sectional	China	2755	mean: 18	male and female	Chinese
32	Hsieh et al., 2022	cross-sectional	USA	528	range: 18-29 years old	male and female	Hispanic
6	Hughes et al., 2019	cross-sectional	Czech Republic, Lithuania, Republic of Moldova, Montenegro, Poland, Romania, the Russian Federation, Serbia, Ukraine and the former Yugoslav Republic of Macedonia.	14,661	range: 18-25 years old	male and female	from various countries; no other specifics noted
45	Jiang et al., 2021	cross-sectional	China	7434	range: 18 years old and older	male and female	Chinese

Document ID#	Abbreviated Reference: Author and Year	Study Design	Location	Sample Size	Age	Gender	Race & Ethnicity
3	Kaminer et al., 2022	cross-sectional	USA, Canada, England, South Africa, Spain, Argentina, Uruguay	5945	not specified	male and female	from various countries; no other specifics noted
2	Karatekin, 2018	short-term longitudinal study	USA	239	mean: 20	male and female; predominantly female	Predominantly White (76%) and Asian (16%)
33	Kiani et al., 2019	cross-sectional	Iran	500	range: 18-24 years old	male and female; predominantly female (n = 382)	Iranian
56	Langhinrichsen-Rohling et al., 1998	cross-sectional	USA	351	range: 18-28 years old mean: 19.9	male and female	The majority of participants were White (95.1%), 1.8% Hispanic, 0.6% Native American, 0.6% African American, and the remaining 1.8% classified themselves as "other."
28	Lawrence et al., 2005	cross-sectional	USA	65	mean: 19	male and female; predominantly female (72%)	Primarily White (57% White, 15% Asian, 12% Black, 12% Latino, 5% other)
1	Leung et al., 2020	cross-sectional	Netherlands and Hong Kong	Total N = 563; Hong Kong = 257 Netherlands = 306	range: 17-22 years old	male and female	Dutch and Chinese
11	Lin et al., 2020	cross-sectional	Bochum, Germany and China	6947	range: 18-25 years old mean: 21	male and female	Chinese and German
58	H. Liu et al., 2021	cross-sectional	China	1404	range: 16 to 34 years old mean: 20.57	male and female	Chinese
49	H. Liu et al., 2022	cross-sectional	China	6744	range: 15-33 years old mean: 23.09	male and female	Chinese
60	Low et al., 2017	cross-sectional	China	268	mean: 25.9	male and female	Chinese
18	Macalli et al., 2021	cross-sectional	France	2271	mean: 21	male and female	not specified
19	McLafferty et al., 2019	cross-sectional	Northern Ireland	716	range: 18 years old and above mean: 21	male and female	not specified



Document ID#	Abbreviated Reference: Author and Year	Study Design	Location	Sample Size	Age	Gender	Race & Ethnicity
59	McLafferty et al., 2020	cross-sectional	UK	739	range: 18-49 years old mean: 21	male and female	UK and Ireland; no other specifics noted
27	Miranda-Mendizabal et al., 2019	cross-sectional	Spain	2105	range: 18-24 years old	male and female	Spanish university students; no other specifics noted
25	Mortier et al., 2017	utilized research from a longitudinal study	Belgium	2337	range: 18 years old older	male and female	not specified
13	Mortier et al., 2021	cross-sectional	seven high-income countries (Australia, Belgium, Germany, Hong Kong, Northern Ireland, Spain, and the United States), and two upper middle-income countries (Mexico and South Africa)	20,842	mean: 19	male and female	from various countries; no other specifics noted
55	Nilsen & Conner, 2002	cross-sectional	USA	492	range: 18-55 years old mean: 19.64	female	85.5% White, 3.1% African American, 4.1% Asian-American, 2.3% Hispanic-American, 0.2% Native-American, and 4.9% "other."
46	O'Neill et al., 2018	cross-sectional	Northern Ireland	739	range: 18-49 years old mean: 21	female, male, transgender female, transgender male, non-binary	Participants were residents of the United Kingdom (UK) or the Republic of Ireland (ROI), with 98.2% of participants identifying as White.
10	Orri et al., 2022	cross-sectional	France	16,702	range: 18-24 years old	male and female	not specified
17	Ozakar Akca et al., 2021	cross-sectional	Turkey	3602	not specified	not specified	not specified
48	Peltzer et al., 2017	cross-sectional	Cambodia, Indonesia, Malaysia, Myanmar, Thailand and Vietnam	4675	range: 18-30 years old mean: 20.6	male and female	Cambodian, Indonesian, Malaysian, Myanma, Thai, and Vietnamese

Document ID#	Abbreviated Reference: Author and Year	Study Design	Location	Sample Size	Age	Gender	Race & Ethnicity
12	Peter & Taylor, 2014	cross-sectional	Canada	1205	mean: 20.17	male, female, transgender	Two-thirds (66.8%) identified as White, followed by 27.4% visible minority (including many international students), and 5.7% as Aboriginal, First Nations, Metis, or Inuit
21	Puzia et al., 2014	cross-sectional with a 7 week follow up	USA	189	mean: 22.02	male and female; predominantly female (84.2%)	54.0% of the sample was White, 19.3% Asian, 11.9% African American, with the rest self-identifying with another race.
20	Raleva, 2018	cross-sectional	Republic of Macedonia	1277	range: 18-21 years old	male and female	not specified
62	Restrepo et al., 2016	cross-sectional	USA	659	range: 18-46 years old mean: 20.49	male and female	46% ( $n = 303$ ) self-identified as Latino/a, 24.6% ( $n = 162$ ) White, 17.1% ( $n = 113$ ) African American, 10.8% ( $n = 71$ ), Asian/Asian American, and (0.8% ( $n = 5$ ) Native American.
15	Rodriguez-Srednicki, 2008	cross-sectional	USA	441	range: 18-23 years old mean: 20.6	female	Hispanic (40.4%), Black (28.1%), White (15.0%), Asian (1.8%), and respondents of other backgrounds, including interracial respondents (14.8%)
63	Roley et al., 2022	cross-sectional	USA	120	range: 18–22 years old mean: 18.69	male and female	not specified
64	Shapero et al., 2019	cross-sectional	USA	1703	mean: 19.56	male and female	41% White, 31% Asian, 12% Hispanic, 4% African American, 5% other/biracial, and 7% no data.
51	Singh et al., 2012	cross-sectional	India	436	range: 18-25 years old mean: 19.63	male and female	Indian; no other specifics noted
41	Springe et al., 2016	cross-sectional	Latvia	1223	range: 17-25 years old mean: 18.6 years 89.9% of respondents were between 18–20 years of age	male and female	not specified

Document ID#	Abbreviated Reference: Author and Year	Study Design	Location	Sample Size	Age	Gender	Race & Ethnicity
22	Stepakoff, 1998	cross-sectional	USA	393	range: 17-62 years old; "most were between ages 18-25" mean: 20	female	67.3% were White ( $n = 261$ ), 12.1% were African American ( $n = 47$ ), 3.6% were Latina ( $n = 14$ ), and 17% ( $n = 66$ ) were Native American, Asian American, or "Other."
29	Thakkar et al., 2000	cross-sectional	USA	707	not specified	female	not specified
5	Tran et al., 2015	cross-sectional	Vietnam	2099	range: 18-30 years old	male and female	Primarily Kinh ethnic group
40	Tresno et al., 2012	cross-sectional	Indonesia	314	range: 16-27 years old mean: 19	male and female, predominantly women (76%)	Indonesian
35	Veleminsky et al., 2020	cross-sectional	Czech Republic	1681	mean: 20	male and female; predominantly female (71.4%)	not specified
53	Y.R. Wang et al., 2019	cross-sectional	China	989	range: 17-25 years old	male and female	Chinese, Han, Hui, and "others;" no other specifics noted
42	G.F. Wang et al., 2020	cross-sectional	China	4034	range: 18 to 23 years old mean: 20.38	male and female; 2342 males (58.1%) and 1692 females (41.9%).	Chinese
31	Y. Wang et al., 2021	cross-sectional	China	8313	range: 16-24 years old mean: 20	male and female	Chinese
61	Y. Wang et al., 2022	cross-sectional	China	8452	mean: 21	female, male, transgender, non-binary, gender queer	Majority was Han; no other specifics noted
24	Watts et al., 2022	cross-sectional	USA	2604	range: 17-25 years old mean: 21	male, female, transgender, non-binary	Approximately one-half (48.4%) of the sample was White, while 21.5% was Hispanic/Latino(a), 15.6% were African American/Black, 8.0% were multiracial, and 6.5% were Asian American/Asian.
16	Yang & Clum, 2000	cross-sectional	USA	181	not specified	male and female	White, Asian, Black, Hispanic, Mixed
9	Zhang et al., 2020	cross-sectional	Zambia	480	range: 20-24 years old mean: 22.9	male and female	not specified

Document ID#	Abbreviated Reference: Author and Year	Study Design	Location	Sample Size	Age	Gender	Race & Ethnicity
50	Zhou et al., 2022	cross-sectional	China	662	mean: 22.29	male and female	Chinese

**Table 2***Key Findings by Region*

Country/Region	ACES studied	Suicide variables	Findings
Asia			
China			
1) Low et al., 2017	Childhood physical abuse	SI	1) Childhood physical abuse was significantly and positively correlated with suicidal ideation in college students. 2) College students with higher levels of emotional competence and resilience experienced less suicidal ideation.
2) Y.R. Wang et al., 2019	Childhood emotional abuse, physical abuse, sexual assault, emotional neglect, physical neglect, parental separation or divorce, mother treated violently, substance abuse within the household, mental illness within the household, incarcerated household member, victimization by peers, isolation/rejection by peers, exposure to community violence, and low socioeconomic status	SI, P, SA	1) Approximately 45% of those who had been exposed to peer victimization and isolation/rejection experienced suicidal ideation. 2) Each kind of ACE was associated with suicidal ideation in college in univariate logistic regression, but only emotional neglect, peer isolation/rejection, and low socioeconomic status remained significant in multiple logistic regression analyses. 3) The strongest predictor of suicidal ideation was peer isolation/rejection, followed by emotional neglect and low socioeconomic status. 4) As compared to no ACE, increased odds of suicidal ideation were associated with one ACE, two ACEs, and three or more ACEs. 5) There was a linear relationship between the number of ACEs and the likelihood of students' suicidal ideation.
3) G.F. Wang et al., 2020	Bullying victimization	SI, P, SA	1) The odds of suicidal behaviors increased with the number of periods involving bullying victimization experiences and relevant dose-response relationships were found. 2) Bullying victimization experiences in elementary school and secondary school were positively correlated with SI and suicidal plans. 3) The timing and chronicity of bullying victimization play a significant role in linking exposure to bullying victimization to suicidal behaviors in university students.
4) Y. Wang et al., 2021	Childhood emotional abuse, physical abuse, sexual abuse, emotional neglect, physical neglect, parental psychopathology	SA, M	1) LGBTQ+ college students are more at risk of attempting suicide than their non-LGBTQ+ counterparts. 2) Childhood emotional and sexual abuse increase risk for LGBTQ+ students to attempt suicide 3) The cumulative effects of childhood abuse, along with stressors related to belonging to a sexual/gender minority identity might contribute to difficulties in healthy coping among LGBTQ+ college students.
5) Y. Wang et al., 2022	Childhood emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect	SI	1) Emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect were all significantly, positively related to suicide ideation. 2) As identification with all humanity (IWAH) increased, loneliness and suicidal ideation decreased.

Country/Region	ACES studied	Suicide variables	Findings
Asia			
China			
6) Zhou et al., 2022	Childhood abuse (emotional, physical, and sexual); Childhood neglect (emotional and physical)	SI	1) Suicidal ideation is prevalent among college students due to multiple factors including personality type, ACE's, and additional stressors being a college student brings. 2) Childhood trauma increases the risk of suicidal ideation among college students.
7) H. Liu et al., 2021	Childhood sexual abuse	SI	1) The rate of childhood sexual abuse in males was higher than that in females. 2) Compared to students without a history of childhood sexual abuse, those who had experienced childhood sexual abuse reported higher rates of SI. 3) The direct effect of childhood sexual abuse on SI was significant.
8) H. Liu et al., 2022	Childhood sexual abuse	SI	1) Childhood trauma had an indirect effect on SI via personality, dysfunctional attitudes and depressive symptoms. 2) Psychoticism and neuroticism had a direct effect on SI and an indirect effect on SI via dysfunctional attitudes and depressive symptoms. 3) Extroversion had a direct effect on SI and an indirect effect on SI via depressive symptoms. 4) Dysfunctional attitudes had an indirect effect on SI via depressive symptoms.
9) Jiang et al., 2021	Childhood emotional abuse	SB, including SI and SA	1) In the current sample, 8.7% of college students reported experiences of childhood emotional abuse. 2) Females were more likely than males to report childhood emotional abuse and were at higher risk of suicidal behaviors than males. 3) The overall estimate of suicidal behaviors among college students was 5.9%. 4) There was a significant positive association between childhood emotional abuse and suicidal behaviors.
10) He et al., 2021	Death of a loved one; unemployment of parents; flood, fire, or house damage; witnessing a car accident or murder; earthquake; family financial difficulties; major surgery; abuse by family members; abuse by other adults or children; serious injury	SA	1) Witnessing a car accident or murder, abuse by family members, and abuse by adults or children were positively related to suicide attempts in college. 2) College students who had experienced three or more types of adversity or 1-2 types of adversity were at significantly higher risk for attempting suicide, relative to those who did not experience any adversity.
11) Y. Chen et al., 2017	Childhood abuse (emotional and physical)	SHB; SB, including SI and SA	1) Male participants were more likely to report child abuse than females. 2) Male students who were abused emotionally in childhood had significantly increased risks for suicidal behavior in college. 3) In female students, emotional abuse was linked with increased risks for self-harm behavior and suicidal behavior.
12) L.R. Chen et al., 2021	Childhood sexual abuse	SI, SA, P, Prep	1) For male college students, sexual abuse in the elementary school or earlier period was associated with suicidal ideation, plans, and preparations. 2) Sexual abuse in secondary school period was only associated with suicidal ideation. 3) Dose-response relationship and cumulative effect were found between duration, types of sexual abuse victimization and suicidal behaviors. 4) For female college students, all periods in which sexual abuse was experienced were significantly associated with suicidal ideation in college.

Country/Region	ACES studied	Suicide variables	Findings
Asia			
Vietnam 1) Tran et al., 2015	Childhood abuse (emotional, physical, sexual); violence against household members; living with household members who were substance abusers; living with household members who were imprisoned; growing up with one or no parents, parental separation, or divorce; bullying; community violence	SI, SA	1) Of the 11 types, the most commonly reported ACEs were emotional abuse, physical abuse, and witnessing a household member being treated violently (42.3%, 39.9%, and 34.6%, respectively). 2) Approximately 15% of students reported some experiences of sexual abuse during childhood, and the proportions were not significantly different for males and females. 3) Regarding co-occurrence of ACEs, it was found that the majority of the respondents (53.8%) had 2 or more types of ACEs. 4) One in every 5 medical students had been exposed to 4 or more types of ACEs, while about 1 in every 30 medical students reported 6 or more of the 11 forms of adversity. 5) A strong dose-response relationship was found between ACEs and past year suicidal ideation.
Indonesia 1) Tresno et al., 2012	Childhood emotional neglect	SI, SA	1) Students who endorsed suicidal ideation and attempts had higher likelihood of having a history of experiencing childhood emotional neglect.
Turkey 1) Ozakar Akca et al., 2021 2) Eskin et al., 2005	Childhood abuse (emotional, physical, sexual); Childhood neglect (emotional and physical) Childhood sexual abuse	SI SI, SA	1) Emotional neglect was found to have the strongest correlation to SI among Turkish college students. 2) A positive correlation between childhood trauma and SI in college students was found. 1) Childhood sexual abuse was found to be an independent predictor of both suicidal ideation and suicide attempts. 2) Suicidal ideation and attempts during the past 12 months were equally common in men and women. 3) Low perceived paternal closeness, self-identified same-sex sexual orientation, and instances of childhood sexual abuse were independent predictors of suicidal ideation in college.
Iran 1) Kiani et al., 2019	Childhood abuse (emotional, physical, sexual); Childhood neglect (emotional and physical); parental separation/divorce; violence against mother; household substance abuse; household mental illness; incarceration of household member	SI	1) ACEs had a significant correlation with suicidal ideation in Iranian college students.
India 1) Singh et al., 2012	Childhood abuse (emotional, physical, sexual); Childhood trauma	SI	1) Childhood physical abuse is the most reported form of abuse, and all the forms of abuse were reported more by males than females. 2) A positive correlation between suicidal risk and adverse childhood experiences were found among Indian college students.

Country/Region	ACES studied	Suicide variables	Findings
Europe			
Czech Republic			
1) Veleminsky et al., 2020	Childhood abuse (emotional, physical, sexual); parental separation or divorce; witnessing domestic violence; living with a household member who was depressed or suicidal; living with a problem drinker/alcoholic or a drug user; familial incarceration	SA	1) More female college students with a history of ACEs reported suicide attempts than their male counterparts. 2) Compared with those with no ACEs, college students with 4 ACEs were 17 times more likely to have attempted suicide. 3) Low supportive childhood relationships were independently associated with suicide attempts among college students.
Republic of Macedonia			
1) Raleva, 2018	Childhood abuse (emotional, physical and sexual); neglect (emotional and physical); witnessing domestic violence; parental separation or divorce; living with substance abusive, mentally ill, or criminal household members	SA	1) Emotional neglect, physical abuse and physical neglect were the most frequent ACEs students had. 2) Suicide attempts were reported by 3.1% of respondents (4.7% by females and 0.8% by males). 3) Those respondents who had been emotionally abused were almost three times as likely to attempt suicide. 4) Physical abuse was shown to double the chance of attempting suicide. 5) Substance abuse in the family increased the chance of attempting suicide by 2.3. 6) Witnessing violent treatment of a mother almost quadrupled the chance for attempted suicide. 7) Having a family member who had been in prison increased the odds of a college student attempting suicide by 3.5. 8) Attempted suicide was found to be 1.5 times more likely as the number of ACEs reached three, and 3.4 times more likely as the number of adverse childhood experiences reached four or more.
Latvia			
1) Springe et al., 2016	Childhood abuse (emotional, physical, sexual); neglect (emotional and physical); parental divorce or separation; substance abuse in family; family history of suicide	SA, SR	1) The highest odds for suicide attempts were for respondents who had experienced emotional neglect and physical violence 2) Childhood emotional neglect showed a stronger association with attempted suicide than emotional violence among college students. 3) Physical violence experienced in childhood was found to pose a higher risk for attempted suicide than physical neglect among college students.
Belgium			
1) Mortier et al., 2017	Childhood abuse (emotional, physical, sexual abuse); physical neglect; parental psychopathology; bully victimization	SI, P, SA	1) Childhood physical abuse was associated with the first onset of suicidal thoughts and behaviors in college.



Country/Region	ACES studied	Suicide variables	Findings
Europe			
France			
1) Macalli et al., 2021	Parental maltreatment (physical and emotional abuse); peer victimization	SI, SA	1) College students who experienced peer victimization alone had increased odds of suicidal ideation without a suicide attempt, and suicidal ideation with a suicide attempt. 2) Participants that experienced both parental maltreatment and peer victimization were also more likely to present suicidal thoughts with a suicide attempt in college, compared to participants that did not experience either maltreatment or peer victimization. 3) Compared to peer victimization alone, the combination of maltreatment and peer victimization showed significantly stronger associations with suicidal thoughts, with or without suicide attempts.
2) Orri et al., 2022	Parental loss; parental illness (including mental illness)	SI	1) Students who have experienced parental death, compared to those who have not, were at increased risk of reporting occasional and frequent suicidal ideation. 2) College students who experienced parental illness during childhood were at increased risk of reporting suicidal ideation in college, with main associations for parental depression/anxiety, alcohol use, and cardiovascular diseases. 3) Overall, students who experienced parental death and common parental illnesses in childhood were at risk of reporting suicidal ideation in college, especially if their family were perceived as an important source of support.
Spain			
1) Blasco et al., 2019a	Childhood abuse (emotional, physical; sexual); emotional neglect; bully victimization; parental death, separation, or divorce; parental psychopathology, parent attempted or died by suicide; household criminal activities or violence	SI, P, SA	1) Experiences of childhood emotional abuse or neglect or being bullied were associated with first onset of suicidal ideation among first-year Spanish university students. 2) Around 1 in 5 students with a history of suicidal ideation at university entrance persisted with suicidal ideation in the subsequent year. 3) University sense of membership was significantly associated with a lower likelihood of both first onset suicidal ideation and persistence in college.
2) Blasco et al., 2019b	Childhood abuse (emotional, physical, sexual); neglect; bullying victimization; dating violence; parental death; parental divorce; parental psychopathology, parent attempted or died by suicide; criminal activities or violence	SI, P, SA	1) A high prevalence of suicidal thoughts and behaviors were found among Spanish university students. 2) The main risk factors associated with SI were parental psychopathology, childhood sexual abuse, and emotional abuse. 3) Positive relationships during childhood and adolescence were shown to have a protective effect on developing suicidal thoughts and behaviors in college.
3) Miranda-Mendizabal et al., 2019	Childhood abuse (emotional, physical, sexual); neglect; physical, verbal, and cyberbullying victimization; dating violence; deceased parents; parental separation or divorce; parental psychopathology; parental criminal activities; any parent attempted or died by suicide; violence between parents	SI, P, SA	1) SI and suicide plans showed a higher likelihood among female college students than male college students, while suicide attempts were more frequent among males. 2) Common risk factors of SI for both genders included childhood maltreatment and verbal bullying victimization. 3) Females exposed to violence between their parents had higher odds of SI whereas a protective effect was seen for males 4) For female college students, exposure to violence between parents, and for males, physical childhood maltreatment and deceased parents, increased SI risk in college.

Country/Region	ACES studied	Suicide variables	Findings
<b>Europe</b>			
<b>Northern Ireland</b>			
1) McLafferty et al., 2019	Childhood abuse (emotional, physical, sexual); physical neglect; parental psychopathology or suicidality; parental substance use; parental criminality; family violence	SI, P, SA	1) Female college students were more likely to engage in suicidal behavior and self-harm. 2) Participants aged 21 years or more were less likely to engage in self-harm in comparison to younger students. 3) Students who identified as non-heterosexual were more likely to have a range of mental health problems and engage in self-harm and suicidal behavior. 4) Students with ACEs were more likely to experience suicidal behavior in college in comparison to those who experienced no or lower levels of childhood adversity.
2) O'Neill et al., 2018	Childhood abuse (emotional, physical, sexual); neglect; parental psychopathology; parental alcohol or drug problems; parental suicidal behavior; parental involvement in criminal activity; domestic violence	SI, P, SA	1) Rates of suicidal behavior in first year college students with a history of ACEs in Northern Ireland are high, with almost a third of participants having thought about suicide at some stage in college, and nearly 1 in 5 students reported having made a plan for suicide. 2) Sexual minority status considerably increased the likelihood of suicidal behavior in students with ACE histories.
<b>Ireland</b>			
1) Bhargav & Swords, 2022	Childhood abuse (emotional, physical, sexual); neglect (emotional, physical); substance misuse; domestic violence; parental divorce	SI, SA	1) A significant direct effect of ACEs on suicidal ideation was found; specifically, the more accumulated ACEs were associated with higher suicidal ideation among college students. 2) A significant indirect effect of ACEs on suicidal ideation through perceived burdensomeness and psychological distress, and thwarted belongingness and psychological distress was found. 3) Childhood adversities were common, with students endorsing a mean of 2.94 ACEs and median of 2 ACEs, with 25.2% endorsing no ACE, 35.2% endorsing 1–3 ACEs and 39.6% endorsing 4–12 ACEs, out of a list of 12.
<b>United Kingdom</b>			
1) McLafferty et al., 2020	Childhood abuse (emotional, physical, sexual); neglect; parental psychopathology; parental alcohol or drug problems; parental suicidal behavior; parental involvement in criminal activity; domestic violence	SI, P, SA	1) College students who endorsed higher levels of childhood adversities were more likely to have a mental health problem or suicidal behavior in college than those who experienced lower levels of childhood adversity.
<b>South America</b>			
<b>Brazil</b>			
1) Costa et al., 2019	"Childhood and adolescence maltreatment"; "family history of psychiatric disorders"	SI, P, SA	1) University students under the age of 25 had a 2.13 times greater chance of exhibiting suicidal ideation and behaviors. 2) Ph.D. students had a lower likelihood of exhibiting suicidal thoughts and behaviors when compared with undergraduate students, indicating that the education degree is a protective factor. 3) ACEs were associated with suicide attempts among students in Brazil. 4) Master's and Ph.D. students had lower rates of suicidality than their undergraduate counterparts.

Country/Region	ACES studied	Suicide variables	Findings
North America			
USA			
1) Aldridge Antal & Range, 2005	Childhood abuse (physical and sexual)	SI	1) Depression, anxiety, and suicidality decreased over time among college students who wrote about their childhood abusive experiences; however, it is unclear what the exact effect of writing was.
2) Arata et al., 2005	Childhood abuse (emotional, physical, sexual); Neglect (emotional, physical)	SI, SA	1) Many students who report having experienced child abuse have experienced multiple forms of child abuse. 2) Individuals who experience multiple forms of childhood abuse are at a greater risk later on in life for more life-threatening behaviors, depression, lower self-esteem, and suicidal thoughts and attempts.
3) Brausch & Holaday, 2015	Childhood physical abuse	SI, SA	1) Childhood physical abuse showed a link to increased self-harm behaviors in college. 2) Enduring childhood physical abuse is likely to contribute to habituation that decreases someone's fear of death in college.
4) Bridgeland et al., 2001	Childhood physical and sexual abuse	SI, SA	1) Childhood physical and sexual abuse are associated with suicide attempts in college. 2) Childhood physical abuse shows the most consistent relationship with suicide attempts in college.
5) Bryan et al., 2013	Childhood physical and sexual abuse	SI, SA	1) In undergraduate students, physical and sexual abuse as a child and unwanted sexual experiences increased suicide attempts and ideation in college. 2) A strong dose-response relationship was found between childhood physical and sexual abuse and suicide attempts in college.
6) Burke et al., 2019	Childhood abuse (emotional, physical, and sexual); neglect (emotional and physical)	SI, P, I, SA	1) College students who reported a suicide attempt with the intent to die reported higher levels of childhood emotional and physical abuse than those reporting only suicidal ideation and those reporting a suicide plan. 2) Students who reported having a suicidal plan reported higher levels of childhood abuse than students who only reported experiencing suicidal ideation. 3) College students who reported a suicide attempt with the intent to die reported higher levels of physical neglect in childhood than those reporting only suicidal ideation in college.
7) Burlaka et al., 2020	Childhood abuse (emotional and physical); witnessing maternal abuse	SI, P, SA	1) Childhood emotional abuse was the most common ACE experienced. 2) Nearly one third of participants with ACE histories reported experiencing suicidal ideation in college, 8.6% reported having a plan to kill themselves, and 7.6% attempted suicide.
8) Gibb et al., 2001	Childhood abuse (emotional, physical, sexual)	SI	1) Students who reported more emotional abuse in childhood also endorsed higher average levels of suicidal ideation.
9) Gidycz et al., 2008	Childhood sexual abuse	SI	1) Experiences of childhood sexual abuse were associated with suicidal ideation in college.

Country/Region	ACES studied	Suicide variables	Findings
North America			
USA			
10) Grigsby et al., 2020	Childhood abuse (emotional, physical, sexual); violence between parents; living with household members who were substance misusers, mentally ill, or ever imprisoned	SI, SA	1) Females experienced a more robust graded relationship between cumulative ACEs and suicidal ideation. 2) No gender differences were found in the relationship between ACE exposure and suicide attempts in college. 3) Students with a history of ACEs had 2-3 times the odds of attempting suicide or experiencing suicidal ideation compared with their peers with no ACE history.
11) Hsieh et al., 2022	conventional crime, child maltreatment, peer and sibling victimization, sexual victimization, and witnessing and indirect victimization	SI	1) Childhood polyvictimization had significant indirect effects on suicide ideation among Hispanic college students, specifically through perceived burdensomeness and thwarted belongingness. 2) Perceived burdensomeness had a greater magnitude than thwarted belongingness in the association between childhood polyvictimization and suicide ideation.
12) Karatekin, 2018	Childhood abuse (emotional, physical, sexual); substance abuse and mental illness of household members; domestic violence perpetrated against the mother or stepmother; incarceration of a household member; parental separation/divorce	SI	1) A strong dose-response relationship was found between ACEs and suicidal ideation in college students.
13) Langhinrichsen-Rohling et al., 1998	Childhood physical abuse	SLTB	1) Childhood physical abuse perpetrated by any parent was linked to an increase of suicidal behavior in college. 2) Mothers' violence towards their children was shown to affect children more in their adulthood.
14) Lawrence et al., 2005	Parental loss or death	SI, I	1) The number of years since the death of the parent was a statistically significant covariate with fewer years since the loss resulting in higher levels of psychological distress among college students. 2) The death of a mother but not a father was related to increased levels of grief and psychological distress in both males and females. 3) Students whose mother died experienced more symptoms of depression, grief, and suicidal ideation than students whose father died, particularly among female college students.
15) Nilsen & Conner, 2002	Childhood abuse (emotional, physical, sexual)	SI	1) SI is more likely among college women with a history of child maltreatment. 2) College women with a history of childhood physical or emotional abuse were more likely to report SI than those without these experiences. 3) Results did not show an association of child sexual abuse and SI. 4) One or more exposures to child victimization was associated with greater rates of SI than women who had experienced neither type of victimization in childhood.

Country/Region	ACES studied	Suicide variables	Findings
North America			
USA			
16) Puzia et al., 2014	Childhood abuse (emotional, physical, sexual)	SI	1) Childhood emotional abuse, but not childhood physical or sexual abuse was associated with suicidal ideation among college students.
17) Restrepo et al., 2016	Childhood abuse (physical and sexual)	SI, SB	1) Childhood sexual and physical abuse were significantly correlated with suicidal behavior. 2) Among this sample of college students, having a history of childhood abuse was significantly related to social maladjustment, which in turn, was associated with suicidal behavior.
18) Rodriguez-Srednicki, 2008	Childhood sexual abuse	P, SA	1) Female college students with a history of childhood sexual abuse reported a greater number of suicide attempts than college women who did not have a history of childhood sexual abuse.
19) Roley et al., 2022	Childhood sexual abuse	SI	1) Childhood sexual abuse was shown to increase facets of emotion dysregulation (non-acceptance and negative reactions toward stress stemming from childhood sexual abuse), which in turn, was found to increase the risk for SI among college students.
20) Shapero et al., 2019	Childhood abuse (emotional, physical, sexual); neglect (emotional and physical)	SI, SB	1) Suicidal thoughts and behaviors were positively associated with emotional reactivity and childhood trauma and negatively associated with resilience. 2) Childhood emotional abuse and neglect were associated with suicidal thoughts and behaviors among college students.
21) Stepakoff, 1998	Childhood sexual abuse	SI, I, SA	1) Female undergraduate students with a history of childhood sexual abuse reported significantly more suicidal acts than participants with no childhood sexual abuse history.
22) Thakkar et al., 2000	Childhood abuse (physical and sexual)	SI	1) A significant correlation between childhood sexual and/or physical abuse and suicidal ideation was found.
23) Watts et al., 2022	Childhood abuse (emotional, physical, sexual)	SI, SA	1) Students with a history of childhood abuse were more likely to have suicidal ideation and suicide attempts in college.
24) Yang & Clum, 2000	Childhood abuse (physical and sexual); neglect (emotional and physical); parental separation/divorce; parental death	SI, Prep, SA	1) Experiences of childhood physical abuse, neglect, parental separation, were associated with suicidality among college students. 2) The direct impact of early negative life events was stronger for suicidal behaviors than for suicidal ideation in college students. 3) Early adversity was shown to have a strong negative impact on cognitive functioning, including self-esteem, locus of control, hopelessness, and problem-solving, which in turn had a strong impact on suicidal behaviors among college students.
Canada			
1) Peter & Taylor, 2014	Childhood abuse (emotional, physical, sexual); neglect (emotional and physical)	SI, SA	1) Compared to their heterosexual peers, LGBTQ+ college students were 7.5 times more likely to have attempted suicide, and 2.6 times more likely to have seriously contemplated suicide. 2) Among LGBTQ+ college students, exposure to abuse and harassment from family and peers in childhood was associated with subsequent suicidality in college.

Country/Region	ACES studied	Suicide variables	Findings
<b>South Africa</b>			
Zambia			
1) Zhang et al., 2020	Childhood abuse (emotional, physical, sexual); household substance abuse/misuse; exposure to parental intimate partner violence	SI, SA	1) In comparison with female students, male students more commonly experienced three types of ACEs (parental substance use, physical abuse, and exposure to parental intimate partner violence). 2) Parent substance use, emotional abuse, and sexual abuse were associated with increased risks suicide behaviors in Zambian college students. 3) Students with three or more ACEs were at greatest risk for health risk behaviors, including attempting suicide. 4) A strong dose-response relationship was found between ACEs and suicide behaviors.
<b>Multiple Countries</b>			
China and Germany			
1) Lin et al., 2020	Bullying victimization	SI, P, SA	1) Being bullied in childhood was associated with negative mental health outcomes in adult college students, including suicidality. 2) The mental health outcomes of bullying in individualistic and collectivistic cultures did not significantly differ among Chinese and German students.
Netherlands and Hong Kong, China			
1) Leung et al., 2020	Childhood abuse (emotional and physical)	SI	1) Chinese students reported more childhood maltreatment (physical and emotional abuse), and suicidal ideation and depression than Dutch students.
Cambodia, Indonesia, Malaysia, Myanmar, Thailand, Vietnam			
1) Peltzer et al., 2017	Childhood abuse (emotional, physical, sexual)	SI, SA	1) There was country variation in the prevalence of suicidal ideation among college students with ACE histories, ranging from below 10% in Indonesia, Malaysia and Thailand to above 15% in Myanmar and Vietnam. 2) The suicide attempt prevalence ranged from below 2% in Myanmar and Vietnam to 3% or more in Indonesia and Thailand. 3) In Myanmar, a significantly higher proportion of female students reported having suicidal ideation compared to male students. In Thailand, suicide attempts were significantly more common among male students than females. 4) Childhood sexual abuse and suicidal ideation in college were significantly correlated.

Country/Region	ACES studied	Suicide variables	Findings
<b>Multiple Countries</b>			
USA, Canada, England, South Africa, Spain, Argentina, Uruguay  1) Kaminer et al., 2022	Childhood abuse (emotional, physical, sexual); neglect (emotional and physical); parental mental illness; parental substance abuse; parental incarceration; parental divorce/separation/death, family violence; peer bullying; witnessing community violence; exposure to collective violence (war, terrorism, militia violence)	SI	1) The more ACEs a student had, the higher their likelihood of experiencing suicidal ideation during college, across all seven countries. 2) South African, Argentinian, and Uruguayan students (these students did not differ from each other) reported significantly higher total scores of ACEs and suicidal ideation compared to college students in the United States, England, and Canada (these students did not differ from each other).
Czech Republic, Lithuania, Republic of Moldova, Montenegro, Poland, Romania, the Russian Federation, Serbia, Ukraine and the former Yugoslav Republic of Macedonia  1) Hughes et al., 2019	Childhood abuse (emotional, physical, sexual); parental separation or divorce; witnessing domestic violence and living with a household member who was depressed or suicidal; living with a problem drinker/alcoholic or a drug user; living with someone incarcerated	SA	1) Suicide risk increased with ACE count. 2) Supportive childhood relationships were independently associated with moderating risks of suicide attempt. 3) Among college students with a history of four ACEs, suicide attempts reduced from 23% with low supportive childhood relationships to 13% with higher support in childhood. 4) Compared with students with no ACE history, students with four ACEs were 17 times more likely to attempt suicide. 5) Female college students were at greater risk of attempting suicide than males.
Australia, Belgium, Germany, China, Northern Ireland, Spain, U.S., Mexico, South Africa  1) Mortier et al., 2021	Childhood abuse (emotional, physical, sexual); neglect; parental psychopathology; bullying victimization; dating violence	SI, P, SA	1) Across the sample, the most prevalent ACE was bullying victimization (60.7%), followed by parental psychopathology (38.5%), emotional abuse (26.3%), and physical abuse (15.4%). 2) Dating violence, (9.9%), neglect (9.6%), and sexual abuse (2.5%) were least prevalent. 3) Three quarters (75.9%) of students experienced at least one ACE; 44.6% experienced at least two and 11.9% experienced four or more. 4) Planned attempts among ideators were associated with the frequency of all seven ACEs. 5) Associations between SI, P, and SA remained significant with the frequency of childhood physical abuse, sexual abuse, bully victimization, and dating violence. 6) Unplanned attempts among ideators had specific associations with the frequency of childhood emotional abuse and bully victimization only. 7) The more frequently a college student had experienced ACEs, the more likely it was for their suicidal ideation to turn into a suicidal plan during college, especially with specific types of childhood adversities, specifically physical abuse, sexual abuse, bully victimization, and dating violence. 8) Early-life suicidal ideation and transitions from SI to P were best explained by the exact number of ACEs, while the frequency of ACEs best explained the transition from ideation or plans to attempts.

Note. SI = suicidal ideation; SA = suicide attempt; P = suicidal plans; M = methods; SB = suicidal behaviors; SHB = self-harm behavior; Prep = preparations; SR = suicide risk; I = suicidal intent; SLTB = suicidal and life-threatening behavior

## APPENDIX A

### List of Search Terms



**LIST OF SEARCH TERMS**

\*Each Primary Search Term should have synonyms or alternate forms to use with the "OR" operator in your searches

Search Term ID#	Primary Term	Synonyms/ Alternate Forms	Notes
01	adverse childhood experiences	"ACEs", "childhood adversity", "adverse childhood", "trauma", "early trauma", "childhood trauma", "child maltreatment", "physical abuse", "emotional abuse", "sexual abuse", "physical neglect", "emotional neglect", "parental incarceration", "parental substance abuse", "parental substance misuse", "household dysfunction", "domestic violence", "family member with mental illness", "parental psychopathology", "parental loss", "parental divorce or separation", "discrimination", "bullying", "oppression", "parental suicidality", "foster care", "maladaptive parenting", "peer victimization", "peer isolation", "peer rejection", "community violence", "low socioeconomic status"	
02	suicide	"suicidality", "suicide risk", "suicide attempt(s)",	
03	college student	"university student", "college campus"	
04	intervention	"college interventions", "assessment", "referral", "prevention", "postvention", "awareness"	

## APPENDIX B

### Search Plan

A	B	C	D	E	F	G
<b>COMPREHENSIVE SEARCH PLAN</b>						
*Includes Electronic databases, registries, journal TOCs, Reference lists from articles/books, resource lists from organizations, etc. etc. etc.						
Search Type	Databases or Sources	Search Term IDs	Search Syntax or Instructions	Fields to Search	Specifiers	Plan Notes
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02	suicid* AND "adverse childhood" or "childhood adversity"	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles only	194 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02	suicid* AND aas or "adverse childhood" or "childhood adversity"	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles only	334 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03	suicid* AND aas or "adverse childhood" or "childhood adversity" AND college student	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles only	16 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03	suicid* AND aas or "adverse childhood" or "childhood adversity" AND "student" AND "college" or "undergraduate" or "university"	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles only	41 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	02, 03, 04	"intervention" AND "college students" and "suicide"	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles, Books, Dissertations	308 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	02, 03, 04	"postvention" AND "college" and "suicide"	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	21 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03, 04	"assessment tools" or "assessment method" or "assessing" AND "college" or "undergraduate" or "university" AND "suicide" AND "trauma"	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	105 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 03, 04	"trauma informed care" or "trauma informed practice" or "trauma" or "trauma informed approach" AND "college student" or "undergraduate" or "university" AND "adverse childhood experiences" or "aas" or "child abuse" or "child neglect", or "childhood trauma" AND suicid*	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	9105 results

Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03, 04	"trauma informed care" or "trauma informed practice" or "trauma" or "trauma informed approach" AND "college student" or "undergraduate" or "university" AND "adverse childhood experiences" or "aas" or "child abuse" or "child neglect", or "childhood trauma" AND suicid*	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	736 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03, 04	"prevention" AND "college students" or "undergraduate" or "university" AND "adverse childhood experiences" or "aas" or "child abuse" or "child neglect", or "childhood trauma" AND suicid*	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	280 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03, 04	"awareness" or "knowledge" or "understanding" or "education" AND "college students" or "undergraduate" or "university" AND "adverse childhood experiences" or "aas" or "child abuse" or "child neglect", or "childhood trauma" AND suicid*	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	288 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03	suicid* AND "childhood trauma" AND "student" AND "college" or "undergraduate" or "university" or "higher education"	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	97 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03	suicid* AND "childhood trauma" or "childhood abuse" or "early life trauma" or "adverse childhood experiences" AND "student" AND "college" or "undergraduate" or "university" or "higher education"	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	115 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03	suicid* AND "childhood trauma" or "childhood abuse" or "early life trauma" or "adverse childhood experiences" or "child trauma" or "early life adversity" AND "student" AND "college" or "undergraduate" or "university" or "higher education"	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	123 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03	suicid* AND "child maltreatment" AND "student" AND "college" or "undergraduate" or "university" or "higher education"	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	55 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03	suicid* AND "physical abuse" or "emotional abuse" or "psychological abuse" or "neglect" or "sexual abuse" AND "student" AND "college" or "undergraduate" or "university" or "higher education"	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	174 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03	suicid* AND "parental incarceration" or "parental imprisonment" AND "student" AND "college" or "undergraduate" or "university" or "higher education"	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	0 results

Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03	suicid* AND "parental psychopathology" AND "student" AND "college" OR "undergraduate" OR "university" OR "higher education"	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	5 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03	suicid* AND "parental substance abuse" OR "parental drug abuse" OR "substance use or misuse" AND "student" AND "college" OR "undergraduate" OR "university of higher education"	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	276 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03	suicid* AND "domestic violence" OR "domestic abuse" AND "student" AND "college" OR "undergraduate" OR "university" OR "higher education"	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	19 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03	suicid* AND parental loss or death of parent AND student AND college or undergraduate or university or higher education	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	9 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03	suicid* AND parental divorce or parental separation AND student AND college or undergraduate or university or higher education	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	6 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03	suicid* AND "discrimination" AND "student" AND "college" OR "undergraduate" OR "university" OR "higher education"	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	45 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03	suicid* AND "bullying" OR "cyberbullying" OR "harassment" OR "teasing" AND "student" AND "college" OR "undergraduate" OR "university" OR "higher education"	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	270 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03	suicid* AND "peer victimization" OR "bullying" AND "student" AND "college" OR "undergraduate" OR "university" OR "higher education"	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	269 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03	suicid* AND "oppression" OR "discrimination" OR "social exclusion" OR "marginality" OR "marginalized" OR "oppressed" AND "student" AND "college" OR "undergraduate" OR "university" OR "higher education"	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	65 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03	suicid* AND "parental suicide" AND "student" AND "college" OR "undergraduate" OR "university" OR "higher education"	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	19 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03	suicid* AND "foster care" OR "foster children" OR "foster care system" AND "student" AND "college" OR "undergraduate" OR "university" OR "higher education"	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	3 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03	suicid* AND "maladaptive parenting" AND "student" AND "college" OR "undergraduate" OR "university" OR "higher education"	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	1 result
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03	suicid* AND "community violence" OR "neighborhood violence" AND "student" AND "college" OR "undergraduate" OR "university" OR "higher education"	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	9 results
Electronic Database	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03	suicid* AND "low socioeconomic status" OR "low income" OR "poor" OR "poverty" AND "student" AND "college" OR "undergraduate" OR "university" OR "higher education"	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	237 results
All peer-reviewed articles, books, and book chapters by Vincent Felitti	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03	Vincent Felitti	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	40 results
All peer-reviewed articles, books, and book chapters by Robert Anda	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03	Robert Anda	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	40 results
All peer-reviewed articles, books, and book chapters by Katie Ports	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03, 04	Katie Ports	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles	29 results
All peer-reviewed articles, books, and book chapters by Shanta Dube	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03, 04	Shanta Dube	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles, books, book chapters	76 results
All peer-reviewed articles, books, and book chapters by Tracey Afifi	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03, 04	Tracey Afifi	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles, books, book chapters	109 results
All peer-reviewed articles, books, and book chapters by Julia Sheffer	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03, 04	Julia Sheffer	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles, books, book chapters	23 results
All peer-reviewed articles, books, and book chapters by Ian Stanley	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03, 04	Ian Stanley	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles, books, book chapters	109 results
All peer-reviewed articles, books, and book chapters by John McManan	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03, 04	John McManan	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles, books, book chapters	61 results
All peer-reviewed articles, books, and book chapters by Jill McTavish	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03, 04	Jill McTavish	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles, books, book chapters	11 results
All peer-reviewed articles, books, and book chapters by Harriet MacMillan	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03, 04	Harriet MacMillan	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles, books, book chapters	156 results
All peer-reviewed articles, books, and book chapters by Caroline Piotrowski	PsycINFO, Academic Search Complete, ERIC, Scopus, PTSDpubs	01, 02, 03, 04	Caroline Piotrowski	Title, Keywords, Abstract	*Years: 1998-2021 *Type: Peer-reviewed articles, books, book chapters	27 results
Reference list of peer-reviewed journal articles and dissertations						

## APPENDIX C

## Search Documentation Record Sample

## SEARCH DOCUMENTATION RECORD

Search Date	FULL SEARCH ID#	TYPE OF SEARCH	DATABASE/SOURCE	SEARCH TERM ID#	SEARCH SYNTAX OR OTHER GUIDELINES FOR THE SEARCH	FIELDS SEARCHED	SEARCH SPECIFIER- Years	SEARCH SPECIFIER- Publication Type	# of Records	NOTES
8/23/2022	001	Database	Psycinfo	01,02	suicid* AND "adverse childhood" or "childhood adversity"	Phase 1	1998-2022	Peer Reviewed Journal Articles	457	
8/30/2022	001	Database	Psycinfo	01,02	suicid* AND "adverse childhood" or "childhood adversity"	Phase 1	1998-2022	Peer Reviewed Journal Articles	457	
9/13/2022	001	Database	Psycinfo	01,02	suicid* AND "adverse childhood" or "childhood adversity"	Phase 1	1998-2022	Peer Reviewed Journal Articles	457	
9/14/2022	001	Database	Psycinfo	01,02	suicid* AND "adverse childhood" or "childhood adversity"	Phase 1	1998-2022	Peer Reviewed Journal Articles	457	
9/14/2022	001	Database	Psycinfo	01,02	suicid* AND "adverse childhood" or "childhood adversity"	Phase 1	1998-2022	Peer Reviewed Journal Articles	457	
9/21/2022	001	Database	Psycinfo	01,02	suicid* AND "adverse childhood" or "childhood adversity"	Phase 1	1998-2022	Peer Reviewed Journal Articles	457	
9/27/2022	001	Database	Psycinfo	01,02	suicid* AND "adverse childhood" or "childhood adversity"	Phase 1	1998-2022	Peer Reviewed Journal Articles	457	
10/03/2022	001	Database	Psycinfo	01,02	suicid* AND "adverse childhood" or "childhood adversity"	Phase 1	1998-2022	Peer Reviewed Journal Articles	457	
12/3/2022	002	Database	Psycinfo	01,02	suicid* AND axes or "adverse childhood" or "childhood adversity"	Phase 1	1998-2022	Peer Reviewed Journal Articles	397	
12/3/2022	003	Database	Psycinfo	01,02,03	suicid* AND axes or "adverse childhood" or "childhood adversity" AND college student	Phase 1	1998-2022	Peer Reviewed Journal Articles	30	
12/3/2022	004	Database	Psycinfo	01, 02, 03	suicid* AND axes or "adverse childhood" or "childhood adversity" AND "student" AND "college" or "undergraduate" or "university"	Phase 1	1998-2022	Peer Reviewed Journal Articles	39	
12/3/2022	005	Database	Psycinfo	02, 03, 04	"intervention" AND "college students" and "suicide"	Phase 1	1998-2022	Peer Reviewed Journal Articles	274	
12/3/2022	006	Database	Psycinfo	02, 03, 04	"postvention" AND "college" and "suicide"	Phase 1	1998-2022	Peer Reviewed Journal Articles	22	
12/3/2022	007	Database	Psycinfo	01, 02, 03, 04	"assessment tools" or "assessment method" or "assessing" AND "college" or "undergraduate" or "university" AND "suicide" AND "trauma"	Phase 1	1998-2022	Peer Reviewed Journal Articles	117	
12/3/2022	008	Database	Psycinfo	01, 02, 03, 04	"trauma informed care" or "trauma informed practice" or "trauma" or "trauma informed approach" AND "college student" or "undergraduate" or "university" AND "adverse childhood experiences" or "axes" or "child abuse" or "child neglect", or "childhood trauma" AND suicide"	Phase 1	1998-2022	Peer Reviewed Journal Articles	818	

## APPENDIX D

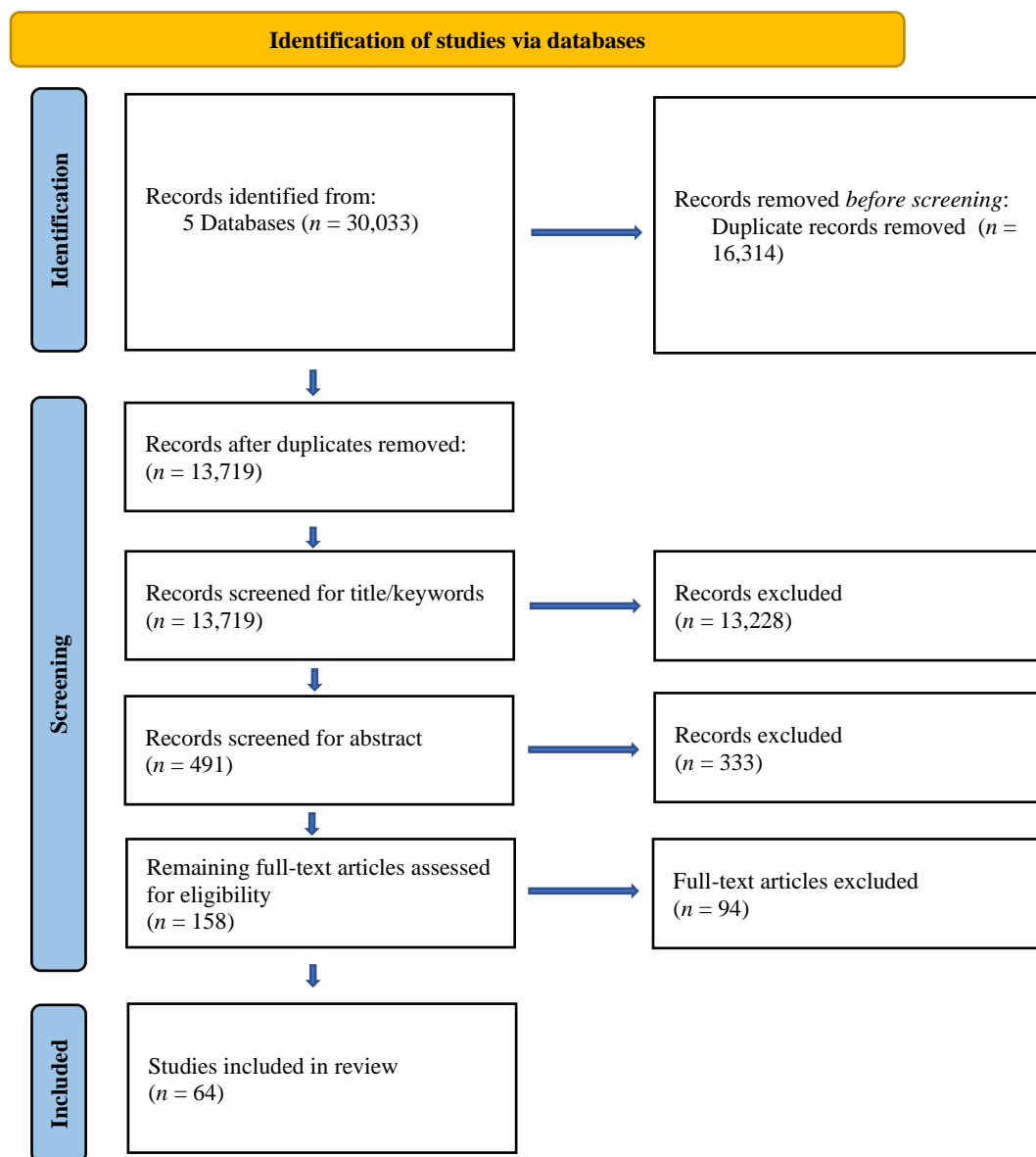
## Sample Screening and Selection Record

	SCREENING AND SELECTION RECORD												
	PHASE 1: Title/Keywords/Abstract (Screening) — PHASE 2: Full-Text Review (Eligibility) — PHASE 3: Final Decision (Selection)												
	DECISION CODES: INCLUDE/CONTINUE TO ABSTRACT/CONTINUE TO FULL TEXT/UNDECIDED/EXCLUDE (IN/CAB/CFT/UN/EX)												
	CRITERIA CODES: (IS THE CRITERIA MET?) YES/UNCLEAR/NO (Y/U/C/N)												
	AUTHORS	YEAR	ABBREVIATED TITLE	REPEAT?	DATABASES/SOURCES	TITLE AND/OR KEYWORD SCREENING DECISION - DATE	ABSTRACT SCREENING DECISION - DATE	FULL-TEXT SCREEN?	INCL (SO): Published Study	INCL (SO): Book or book chapter	INCL (SO): Government report	INCL (SO): White paper	INCL (SO): Conference paper
Search Line 10	Lee, Fang, Chen, Liu, Huang, McKein	2021	Exploring the mediating role of methamphetamine use in the relationship between adverse childhood experiences and attempted suicide.		Psycinfo	08/30/2022, Include/Continue to Abstract	8/30/2022, Exclude						
Search Line 10	Lia, Abdin Vaingankar, Verma, Tang, Subramaniam	2022	Profiles of adverse childhood experiences and protective resources on high-risk behaviors and physical and mental disorders: Findings from a national survey.		Psycinfo	08/30/2022, Include/Continue to Abstract	08/30/2022, Include/Continue to Full-text	Y	Y	N/A	N/A	N/A	N/A
Search Line 10	Blosnich, Maguen, Vogt, Dichter, Hoffmire, Bernhard, Schneiderman	2021	Differences in childhood adversity, suicidal ideation, and suicide attempt among veterans and nonveterans.		Psycinfo	08/30/2022, Include/Continue to Abstract	8/30/2022, Exclude						




APPENDIX E

PRISMA Flow Diagram



## APPENDIX F

## Data Extraction Form

<b>Document ID#</b>

<b>Authors and Year</b> ( <i>last names of authors and year of publication</i> )

<b>Full Document Title</b>

<b>Research Variables</b>

<b>Notes</b>

### 1. General Information

<b>1. Date form completed</b> ( <i>dd/mm/yyyy</i> )	
<b>2. Name/ID of person extracting data</b>	
<b>3. Source/Publication Type</b>	
<b>4. Source name</b>	
<b>5. Publication Status</b>	
<b>6. Document Language</b>	
<b>7. Country in which the study conducted</b>	
<b>9. Other</b>	
<b>11. Notes:</b>	

### 2. Design Characteristics and Methodological Features

<b>12. Aim of the Study</b>	
-----------------------------	--

<b>13. General Method</b> (Quantitative, Qualitative, Mixed)	
<b>14. Design or Specific Research Approach</b>	
<b>15. Research variables studied</b> ( <i>adverse childhood experiences, suicidality, college students, intervention</i> )	
<b>16. Longitudinal or Follow up Study</b>	
<b>17. Sample Size</b>	
<b>18. Other</b>	
<b>19. Notes:</b>	

### 3. Assessment of Research Variables

RESEARCH VARIABLES	How Assessed/Defined (Measure, Observation, Assessments, Interview Question, Archival, etc.)	Reliability/Validity/Utility	Location in text (page number and figure/table)
<b>20. Adverse Childhood Experience</b>			
Type: physical abuse			
Type: emotional abuse			
Type: sexual abuse			
Type: physical neglect			
Type: emotional neglect			
Type: parental incarceration			
Type: parental substance abuse or misuse			
Type: household dysfunction or domestic violence			

<b>RESEARCH VARIABLES</b>	<b>How Assessed/Defined</b> ( <i>Measure, Observation, Assessments, Interview Question, Archival, etc.</i> )	<b>Reliability/Validity/Utility</b>	<b>Location in text</b> ( <i>page number and figure/table</i> )
Type: parental psychopathology or family member with mental illness			
Type: parental loss			
Type: parental divorce or separation			
Type: discrimination			
Type: bullying or peer victimization or peer rejection or isolation			
Type: oppression			
Type: parental suicidality			
Type: foster care			
Type: community violence			
Type: low socioeconomic status			
<b>21. Suicidality</b>			
Type: suicide risk			
Type: suicide attempt(s)			
Type: suicidal ideation			
Type: nonsuicidal self-injury			
<b>22. College Students</b>			
Type: undergraduate student			
Type: graduate student			
Type: international student			

<b>RESEARCH VARIABLES</b>	<b>How Assessed/Defined</b> ( <i>Measure, Observation, Assessments, Interview Question, Archival, etc.</i> )	<b>Reliability/Validity/Utility</b>	<b>Location in text</b> ( <i>page number and figure/table</i> )
Type: traditional college student			
Type: non-traditional college student			
<b>23. Intervention</b>			
Type: assessment			
Type: referral			
Type: prevention			
Type: postvention			
Type: awareness			
<b>24. Other</b>			
<b>25: Notes:</b>			

#### 4. Study Participant Characteristics and Recruitment

	<b>Description as stated in report/paper</b>	<b>Location in text</b> ( <i>page number &amp; ¶/fig/table</i> )
<b>26. Type of setting</b> ( <i>specify higher education institution type, e.g., community college, university, etc.</i> )		
<b>27. Population of interest</b> ( <i>i.e. college students</i> )		
<b>28. Recruitment Methods</b>		
<b>29. Sample Size</b>		
<b>30. Age(s)</b>		
<b>31. Gender</b>		

	Description as stated in report/paper	Location in text (page number & ¶/fig/table)
<b>26. Type of setting</b> (specify higher education institution type, e.g., community college, university, etc.)		
<b>27. Population of interest</b> (i.e. college students)		
<b>32. Race/Ethnicity</b>		
<b>33. Other common identity marker(s) of participants</b> (i.e. student of color, LGBTQ+, homeless, immigrant, international, differently abled, etc.)		
<b>34. Other</b>		
<b>35. Notes:</b>		

## 5. Setting Characteristics

	Descriptions as stated in report/paper	Location in text (page number & ¶/fig/table)
<b>36. Study Location</b> (type of school setting)		
<b>37. Size of Location</b> (small or large school)		
<b>38. Data Collection Setting(s)</b>		
<b>39. Type of City/Town</b> (rural, urban, suburban)		
<b>40. Year of Intervention</b> (if applicable)		



<b>41. Other:</b>		
<b>42. Notes:</b>		

## 6. Analyses Conducted

	<b>Descriptions as stated in report/paper</b>	<b>Location in text</b> (page number & ¶/fig/table)
<b>43. Descriptive statistics used, if any</b>		
<b>44. Inferential statistics used, if any</b>		
<b>45. Quantitative analyses conducted, if any</b>		
<b>46. Other:</b>		
<b>47. Notes:</b>		

## 7. Results

	<b>Descriptions as stated in report/paper</b>	<b>Location in text</b> (page number & ¶/fig/table)
<b>48. Key Result #1</b>		
<b>49. Key Result #2</b>		
<b>50. Key Result #3</b>		
<b>51. Key Result #4</b>		
<b>51. Key Result #5</b>		
<b>52. Key Result #6</b>		
<b>53. Key Result #7</b>		
<b>54. Key Result #8</b>		
<b>55. Notes:</b>		

## 8. Conclusions and Follow up

	<b>Descriptions as stated in report/paper</b>	<b>Location in text</b>
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		(page number & ¶/fig/table)
<b>56. Key conclusions of study authors</b>		
<b>57. Study Author's recommendations for future research</b>		
<b>58. Does the study directly address your review question?</b> <i>(any issues of partial or indirect applicability)</i>		
<b>59. Your General Takeaways</b>		
<b>60. Takeaways for Implications for Practice</b>		
<b>61. Salient Study Limitations (to inform quality appraisal)</b>		
<b>62. References to other relevant studies</b>		
<b>63. Other publications from this dataset</b>		
<b>64. Further study information needed?</b> <i>(from whom, what and when, contact information)</i>		
<b>65. Correspondence received</b> <i>(from who, what, and when)</i>		
<b>66. Notes:</b>		

## APPENDIX G

## Sample Quality Appraisal Form

## INDIVIDUAL STUDY QUALITY APPRAISAL FORM

**Author(s) and Year: Kaminer et al., 2022**

**Study ID#: 3**

**Methodology: quantitative**

**Specific Design/Inquiry Approach: cross-sectional**

**RATING SCALE:   Strong=3      Good/Adequate=2      Weak=1      Missing=0      N/A**

**1. Strength of Literature Foundation and Rationale for Study: 3**

CONSIDER

- Current and relevant references
- Background literature sufficiently comprehensive
- Need/rationale for study clearly stated, etc.

**2. Clarity and specificity of Research Aims/Objectives/Questions/Hypotheses: 3**

**3. Quality of research design or methodological approach: 3**

CONSIDER

- sufficient rationale for research design
- appropriate research questions
- clear description of design and methodological approach
- sufficient strength of design characteristics utilized
- potential confounds identified and addressed
- consideration of internal and external validity in design
- specific design-based “risk of bias” criteria

**4. Sample Selection and Characteristics: 3**

CONSIDER:

- detailed description of sample characteristics
- adequacy of sample characteristics in the context of research aims
- detailed description of recruitment and selection of participants
- rationale provided for sample size
- inclusion and exclusion criteria indicated as relevant
- representativeness of sample
- adequacy of sample size in context of design
- extent of selection or sample bias

**5. Data Collection Tools (Scales, Observation, Interviews, Focus groups, Debriefs, etc.): 3**

CONSIDER:

- rationale for selection
- appropriateness for assessing variables
- development of study-specific tool or process clearly described
- piloting
- pretesting
- psychometric properties reported
- adequacy of psychometric properties
- normative or standardization data described

**6. Data Collection Processes: 3****CONSIDER:**

- data collection procedures clearly described in sufficient detail
- intervention strategies and implementation described in detail
- quality of data collected
- design-specific considerations

**7. Analysis and Presentation of Data: 3****CONSIDER:**

- appropriateness of analysis for research questions and type of data
- results presented clearly and comprehensively
- usefulness and clarity of any tables, graphs, and charts
- power and effect size reported
- relevant statistics reported clearly
- effective use of tables

**8. Discussion of Study Limitations: 3****CONSIDER:**

- identifies and discusses limitations in the context of design/strategy utilized
- addresses various forms of bias, internal validity, external validity (generalizability), ecological validity

**9. Consideration of culture and diversity: 3****CONSIDER:**

- attention to diversity within sample
- includes culturally appropriate methods and tools
- avoids biased language, uses appropriate terminology

**10. OVERALL RATING:**

**EXEMPLARY STRONG**  
 (e.g., all “3”s) (e.g., mostly “3”s)  
 (e.g., mostly “1”s)

**GOOD/ADEQUATE**  
 (e.g., mostly “2”s)

**WEAK**

## APPENDIX H

## Database Table

[illegible][illegible][illegible]

## APPENDIX I

## Evidence Table of Included Studies



[illegible]

## APPENDIX J

## Excluded Studies and Reasons for Exclusion

Main Themes and Principal Reasons for Articles Excluded in Title and Abstract Screening Process
Not on college students
Not quantitative research
Does not discuss role of ACEs in suicidality among college students (RQ1)
Doesn't meet criteria at all (no ACEs, college students, or intervention focus)
Doesn't meet source eligibility
Not available in English
Does not discuss suicidality at all (e.g., just depression, general mental health outcomes, or other clinical disorders)
Not quantitative research and does not meet source eligibility
Total Number of Excluded Articles: 13,561

Reasons for Studies Excluded Following Application of Eligibility Criteria
Not on college students
Not quantitative research
Does not discuss role of ACEs in suicidality among college students (RQ1)
Doesn't meet criteria at all (no ACEs, college students, or intervention focus)
Doesn't meet source eligibility (e.g., it's a book review)
Not available in English
Does not discuss suicidality at all (e.g., just depression, or general mental health outcomes)
Does not include information on an ACEs or trauma-informed suicide prevention or intervention program
Data on college students is combined with another population (adolescents)
Not quantitative research and does not meet source eligibility
Total Number of Excluded Articles: 94

## APPENDIX K

## Included Studies

Abbreviated Reference	APA Citation
Aldridge Antal & Range, 2005	Aldridge Antal, H. M., & Range, L. M. (2005). Psychological impact of writing about abuse or positive experiences. <i>Violence and Victims</i> , 20(6), 717–728. <a href="https://doi-org.lib.pepperdine.edu/10.1891/vivi.20.6.717">https://doi-org.lib.pepperdine.edu/10.1891/vivi.20.6.717</a>
Arata et al., 2005	Arata, C. M., Langhinrichsen-Rohling, J., Bowers, D., & O’Farrill-Swails, L. (2005). Single versus multi-type maltreatment: An examination of the long-term effects of child abuse. <i>Journal of Aggression, Maltreatment &amp; Trauma</i> , 11(4), 29–52. <a href="https://doi-org.lib.pepperdine.edu/10.1300/J146v11n04_02">https://doi-org.lib.pepperdine.edu/10.1300/J146v11n04_02</a>
Bhargav & Swords, 2022	Bhargav, M., & Swords, L. (2022). Role of thwarted belongingness, perceived burdensomeness and psychological distress in the association between adverse childhood experiences and suicidal ideation in college students. <i>BJPsych Open</i> , 8. <a href="https://doi-org.lib.pepperdine.edu/10.1192/bjo.2021.1087">https://doi-org.lib.pepperdine.edu/10.1192/bjo.2021.1087</a>
Blasco et al., 2019a	Blasco, M. J., Vilagut, G., Alayo, I., Almenara, J., Cebrià, A. I., Echeburúa, E., Gabilondo, A., Gili, M., Lagares, C., Piqueras, J. A., Roca, M., Soto-Sanz, V., Ballester, L., Urdangarin, A., Bruffaerts, R., Mortier, P., Auerbach, R. P., Nock, M. K., Kessler, R. C., & Alonso, J. (2019). First-onset and persistence of suicidal ideation in university students: A one-year follow-up study. <i>Journal of Affective Disorders</i> , 256, 192–204. <a href="https://doi-org.lib.pepperdine.edu/10.1016/j.jad.2019.05.035">https://doi-org.lib.pepperdine.edu/10.1016/j.jad.2019.05.035</a>
Blasco et al., 2019b	Blasco, M. J., Vilagut, G., Almenara, J., Roca, M., Piqueras, J. A., Gabilondo, A., Lagares, C., Soto, S. V., Alayo, I., Forero, C. G., Echeburúa, E., Gili, M., Cebrià, A. I., Bruffaerts, R., Auerbach, R. P., Nock, M. K., Kessler, R. C., & Alonso, J. (2019). Suicidal thoughts and behaviors: Prevalence and association with distal and proximal factors in Spanish university students. <i>Suicide and Life-Threatening Behavior</i> , 49(3), 881–898. <a href="https://doi-org.lib.pepperdine.edu/10.1111/sltb.12491">https://doi-org.lib.pepperdine.edu/10.1111/sltb.12491</a>
Brausch & Holaday, 2015	Brausch, A. M., & Holaday, T. C. (2015). Suicide-related concerns as a mediator between physical abuse and self-harm behaviors in college students. <i>Crisis: The Journal of Crisis Intervention and Suicide Prevention</i> , 36(6), 440–446. <a href="https://doi-org.lib.pepperdine.edu/10.1027/0227-5910/a000349">https://doi-org.lib.pepperdine.edu/10.1027/0227-5910/a000349</a>
Bridgeland et al., 2001	Bridgeland, W. M., Duane, E. A., & Stewart, C. S. (2001). Victimization and attempted suicide among college students. <i>College Student Journal</i> , 35(1), 63–76.
Bryan et al., 2013	Bryan, C. J., McNaughton, C. M., Osman, A., & Hernandez, A. M. (2013). The associations of physical and sexual assault with suicide risk in nonclinical military and undergraduate samples. <i>Suicide and Life-Threatening Behavior</i> , 43(2), 223–234. <a href="https://doi-org.lib.pepperdine.edu/10.1111/sltb.12011">https://doi-org.lib.pepperdine.edu/10.1111/sltb.12011</a>
Burke et al., 2018	Burke, T. A., Ammerman, B. A., Knorr, A. C., Alloy, L. B., & McCloskey, M. S. (2018). Measuring acquired capability for suicide within an ideation-to-action framework. <i>Psychology of Violence</i> , 8(2), 277–286. <a href="https://doi-org.lib.pepperdine.edu/10.1037/vio0000090">https://doi-org.lib.pepperdine.edu/10.1037/vio0000090</a>
Burlaka et al., 2020	Burlaka, V., Kim, Y. J., Lee, N. Y., Kral, M., & Hong, J. S. (2020). Suicidal behaviors among college students at a Bible Belt University: The role of childhood trauma, spirituality, anxiety, and depression. <i>Best Practices in Mental Health: An International Journal</i> , 16(2), 1–20.
Y. Chen et al., 2017	Chen, Y., Liu, X., Huang, Y., Yu, H., Yuan, S., Ye, Y., Li, Q., & He, Q. (2017). Association between child abuse and health risk behaviors among Chinese college students. <i>Journal of Child and Family Studies</i> , 26(5), 1380–1387. <a href="https://doi-org.lib.pepperdine.edu/10.1007/s10826-017-0659-y">https://doi-org.lib.pepperdine.edu/10.1007/s10826-017-0659-y</a>
L.R. Chen et al., 2021	Chen, L.-R., Wang, G.-F., Xie, G.-D., He, Y., Chen, S.-S., Yuan, M.-Y., Chang, J.-J., Li, Y.-H., & Su, P.-Y. (2021). Association between sexual abuse victimization during the life course and suicidal behaviors in male and female college students in China: Timing, duration, types and patterns. <i>Journal of Affective Disorders</i> , 280(Part B), 30–38. <a href="https://doi-org.lib.pepperdine.edu/10.1016/j.jad.2020.11.048">https://doi-org.lib.pepperdine.edu/10.1016/j.jad.2020.11.048</a>
Costa et al., 2019	Costa, A. C. B., Mariusso, L. M., Canassa, T. C., Previdelli, I. T. S., & Porcu, M. (2019). Risk factors for suicidal behavior in a university population in Brazil: A retrospective study. <i>Psychiatry Research</i> , 278, 129–134. <a href="https://doi-org.lib.pepperdine.edu/10.1016/j.psychres.2019.05.039">https://doi-org.lib.pepperdine.edu/10.1016/j.psychres.2019.05.039</a>
Eskin et al., 2005	Eskin, M., Kaynak-Demir, H., & Demir, S. (2005). Same-Sex Sexual Orientation, Childhood Sexual Abuse, and Suicidal Behavior in University Students in Turkey. <i>Archives of Sexual Behavior</i> , 34(2), 185–195. <a href="https://doi-org.lib.pepperdine.edu/10.1007/s10508-005-1796-8">https://doi-org.lib.pepperdine.edu/10.1007/s10508-005-1796-8</a>
Gibb et al., 2001	Gibb, B. E., Alloy, L. B., Abramson, L. Y., Rose, D. T., Whitehouse, W. G., & Hogan, M. E. (2001). Childhood maltreatment and college students’ current suicidal ideation: A test of the hopelessness theory. <i>Suicide and Life-Threatening Behavior</i> , 31(4), 405–415. <a href="https://doi-org.lib.pepperdine.edu/10.1521/suli.31.4.405.22042">https://doi-org.lib.pepperdine.edu/10.1521/suli.31.4.405.22042</a>

Gidycz et al., 2008	Gidycz, C. A., Orchowski, L. M., King, C. R., & Rich, C. L. (2008). Sexual victimization and health-risk behaviors: A prospective analysis of college women. <i>Journal of Interpersonal Violence</i> , 23(6), 744–763. <a href="https://doi-org.lib.pepperdine.edu/10.1177/0886260507313944">https://doi-org.lib.pepperdine.edu/10.1177/0886260507313944</a>
Grigsby et al., 2020	Grigsby, T. J., Rogers, C. J., Albers, L. D., Benjamin, S. M., Lust, K., Eisenberg, M. E., & Forster, M. (2020). Adverse childhood experiences and health indicators in a young adult, college student sample: Differences by gender. <i>International Journal of Behavioral Medicine</i> , 27(6), 660–667. <a href="https://doi-org.lib.pepperdine.edu/10.1007/s12529-020-09913-5">https://doi-org.lib.pepperdine.edu/10.1007/s12529-020-09913-5</a>
He et al., 2021	He, Y., Zhang, Y., Cui, X., Zhong, Y., He, W., Liu, J., Luo, X., & Gong, J. (2021). Epidemiology of major childhood adversities and its effect on depression and suicide attempts in Chinese college students. <i>Journal of Affective Disorders</i> , 281, 331–337. <a href="https://doi-org.lib.pepperdine.edu/10.1016/j.jad.2020.12.031">https://doi-org.lib.pepperdine.edu/10.1016/j.jad.2020.12.031</a>
Hsieh et al., 2022	Hsieh, C., Charak, R., Cano-Gonzalez, I., Gonzalez, L., Roley-Roberts, M. E., & Hovey, J. D. (2022). Perceived burdensomeness and thwarted belongingness influence the childhood polyvictimization and suicide ideation association among Hispanic undergraduates. <i>Death Studies</i> , 46(8), 1792–1800. <a href="https://doi-org.lib.pepperdine.edu/10.1080/07481187.2020.1846227">https://doi-org.lib.pepperdine.edu/10.1080/07481187.2020.1846227</a>
Hughes et al., 2019	Hughes, K., Bellis, M. A., Sethi, D., Andrew, R., Yon, Y., Wood, S., Ford, K., Baban, A., Boderseova, L., Kachaeva, M., Makaruk, K., Markovic, M., Povilaitis, R., Raleva, M., Terzic, N., Veleminsky, M., Włodarczyk, J., & Zakhozha, V. (2019). Adverse childhood experiences, childhood relationships and associated substance use and mental health in young Europeans. <i>European Journal of Public Health</i> , 29(4), 741–747. <a href="https://doi-org.lib.pepperdine.edu/10.1093/eurpub/ckz037">https://doi-org.lib.pepperdine.edu/10.1093/eurpub/ckz037</a>
Jiang et al., 2021	Jiang, L., Shi, X., Wang, Z., Wang, S., Li, Z., & Wang, A. (2021). Sleep problems and emotional dysregulation mediate the relationship between childhood emotional abuse and suicidal behaviors: A three-wave longitudinal study. <i>Journal of Affective Disorders</i> , 295, 981–988. <a href="https://doi-org.lib.pepperdine.edu/10.1016/j.jad.2021.09.003">https://doi-org.lib.pepperdine.edu/10.1016/j.jad.2021.09.003</a>
Kaminer et al., 2022	Kaminer, D., Bravo, A. J., Mezquita, L., Pilatti, A., Bravo, A. J., Conway, C. C., Henson, J. M., Hogarth, L., Ibáñez, M. I., Kaminer, D., Keough, M., Mezquita, L., Ortet, G., Pearson, M. R., Pilatti, A., Prince, M. A., Read, J. P., Roozen, H. G., & Ruiz, P. (2022). Adverse childhood experiences and adulthood mental health: A cross-cultural examination among university students in seven countries. <i>Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues</i> . <a href="https://doi-org.lib.pepperdine.edu/10.1007/s12144-022-02978-3">https://doi-org.lib.pepperdine.edu/10.1007/s12144-022-02978-3</a>
Karatekin, 2018	Karatekin, C. (2018). Adverse childhood experiences (ACEs), stress and mental health in college students. <i>Stress and Health: Journal of the International Society for the Investigation of Stress</i> , 34(1), 36–45. <a href="https://doi-org.lib.pepperdine.edu/10.1002/smi.2761">https://doi-org.lib.pepperdine.edu/10.1002/smi.2761</a>
Kiani et al., 2019	Kiani, A., Ramezani, S., & Atadokht, A. (2019). Predicting suicidality and addictions among university students based on adverse childhood experiences and exposure to family members' and friends' suicide. <i>Journal of Practice in Clinical Psychology</i> , 7(2), 125–135. <a href="https://doi-org.lib.pepperdine.edu/10.32598/jpcp.7.2.125">https://doi-org.lib.pepperdine.edu/10.32598/jpcp.7.2.125</a>
Langhinrichsen-Rohling et al., 1998	Langhinrichsen-Rohling, J., Monson, C. M., Meyer, K. A., Caster, J., & Sanders, A. (1998). The associations among family-of-origin violence and young adults' current depressed, hopeless, suicidal, and life-threatening behavior. <i>Journal of Family Violence</i> , 13(3), 243–261. <a href="https://doi-org.lib.pepperdine.edu/10.1023/A:1022888905686">https://doi-org.lib.pepperdine.edu/10.1023/A:1022888905686</a>
Lawrence et al., 2005	Lawrence, E., Jeglic, E. L., Matthews, L. T., & Pepper, C. M. (2005). Gender differences in grief reactions following the death of a parent. <i>Omega: Journal of Death and Dying</i> , 52(4), 323–337. <a href="https://doi-org.lib.pepperdine.edu/10.2190/55WN-1VUF-TQ3W-GD53">https://doi-org.lib.pepperdine.edu/10.2190/55WN-1VUF-TQ3W-GD53</a>
Leung et al., 2020	Leung, C. L. K., Bender, M., & Kwok, S. Y. C. L. (2020). A comparison of positive youth development against depression and suicidal ideation in youth from Hong Kong and the Netherlands. <i>International Journal of Adolescent Medicine and Health</i> , 32(2), 1–13.
Lin et al., 2020	Lin, M., Wolke, D., Schneider, S., & Margraf, J. (2020). Bullies get away with it, but not everywhere: Mental health sequelae of bullying in Chinese and German students. <i>Journal of Cross-Cultural Psychology</i> , 51(9), 702–718. <a href="https://doi-org.lib.pepperdine.edu/10.1177/0022022120949913">https://doi-org.lib.pepperdine.edu/10.1177/0022022120949913</a>
H. Liu et al., 2021	Liu, H., Wang, W., Yang, J., Guo, F., & Yin, Z. (2021). The effects of alexithymia, experiential avoidance, and childhood sexual abuse on non-suicidal self-injury and suicidal ideation among Chinese college students with a history of childhood sexual abuse. <i>Journal of Affective Disorders</i> , 282, 272–279. <a href="https://doi-org.lib.pepperdine.edu/10.1016/j.jad.2020.12.181">https://doi-org.lib.pepperdine.edu/10.1016/j.jad.2020.12.181</a>
H. Liu et al., 2022	Liu, H., Wang, W., Qi, Y., & Zhang, L. (2022). Suicidal ideation among Chinese survivors of childhood sexual abuse: Associations with rumination and perceived social support. <i>Child Abuse &amp; Neglect</i> , 123. <a href="https://doi-org.lib.pepperdine.edu/10.1016/j.chiabu.2021.105420">https://doi-org.lib.pepperdine.edu/10.1016/j.chiabu.2021.105420</a>

Low et al., 2017	Low, Y. T. A., Kwok, S. Y. C. L., Tam, H. L. C., Yeung, W. K. J., & Lo, H. M. H. (2017). The relationship between childhood physical abuse and suicidal ideation among Chinese university students: Possible moderators. <i>Children and Youth Services Review</i> , 81, 94–100. <a href="https://doi-org.lib.pepperdine.edu/10.1016/j.chilyouth.2017.07.026">https://doi-org.lib.pepperdine.edu/10.1016/j.chilyouth.2017.07.026</a>
Macalli et al., 2021	Macalli, M., Orri, M., Tzourio, C., & Côté, S. M. (2021). Contributions of childhood peer victimization and/or maltreatment to young adult anxiety, depression, and suicidality: A cross-sectional study. <i>BMC Psychiatry</i> , 21. <a href="https://doi-org.lib.pepperdine.edu/10.1186/s12888-021-03354-4">https://doi-org.lib.pepperdine.edu/10.1186/s12888-021-03354-4</a>
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## APPENDIX L

## IRB Approval Form

# PEPPERDINE UNIVERSITY

## Graduate & Professional Schools Institutional Review Board

June 8, 2022

Protocol #: **6822**

Project Title: EXPLORING THE RELATIONSHIP BETWEEN ADVERSE CHILDHOOD EXPERIENCES AND SUICIDALITY IN COLLEGE STUDENTS: A SYSTEMATIC REVIEW.

Dear Tatyana:

Thank you for submitting a "GPS IRB Non-Human Subjects Notification Form" for *EXPLORING THE RELATIONSHIP BETWEEN ADVERSE CHILDHOOD EXPERIENCES AND SUICIDALITY IN COLLEGE STUDENTS: A SYSTEMATIC REVIEW* project to Pepperdine University's Institutional Review Board (IRB) for review. The IRB has reviewed your submitted form and all ancillary materials. Upon review, the IRB has determined that the above titled project meets the requirements for *non-human subject research* under the federal regulations 45 CFR 46.101 that govern the protection of human subjects.

Your research must be conducted according to the form that was submitted to the IRB. If changes to the approved project occur, you will be required to submit *either* a new "GPS IRB Non-Human Subjects Notification Form" or an IRB application via the eProtocol system (<http://irb.pepperdine.edu>) to the Institutional Review Board.

A goal of the IRB is to prevent negative occurrences during any research study. However, despite our best intent, unforeseen circumstances or events may arise during the research. If an unexpected situation or adverse event happens during your investigation, please notify the IRB as soon as possible. We will ask for a complete explanation of the event and your response. Other actions also may be required depending on the nature of the event. Details regarding the timeframe in which adverse events must be reported to the IRB and documenting the adverse event can be found in the *Pepperdine University Protection of Human Participants in Research: Policies and Procedures Manual* at <https://community.pepperdine.edu/irb/policies/>.

Please refer to the protocol number denoted above in all further communication or correspondence related to this approval.

On behalf of the IRB, we wish you success in this scholarly pursuit.

Sincerely,

Institutional Review Board (IRB)  
Pepperdine University

cc: Mrs. Katy Carr, Assistant Provost for Research

Dr. Judy Ho, Graduate School of Education and Psychology IRB Chair

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