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A systematic review of the benefits of integrating therapeutic animals into trauma-focused treatments for child and adolescent survivors of sexual abuse

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Graduate School of Education and Psychology

A SYSTEMATIC REVIEW OF THE BENEFITS OF INTEGRATING THERAPEUTIC ANIMALS INTO TRAUMA-FOCUSED TREATMENTS FOR CHILD AND ADOLESCENT SURVIVORS OF SEXUAL ABUSE

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

by

Zoe Thorne

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Dr. LaTonya Wood, Ph.D. - Dissertation Chairperson

This clinical dissertation, written by

Zoe Thorne

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

DOCTOR OF PSYCHOLOGY

Doctoral Committee:

LaTonya Wood, PhD, Chairperson

Veronica Viesca, PhD, Committee Member

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DEDICATION

This is for my late grandfather, Mehmet, who grew up in poverty and through a stranger's kindness was gifted funding for his education and passage to America. Through your remarkable resiliency and career as a surgeon, you instilled in me the value of education and a life dedicated to service.

This is for my mother and father, Deniz and John, who have always held steadfast in their belief in my abilities. Thank you for all the ways you have supported and encouraged me. Thank you, Mom, for being my original teacher and for problem solving all my life adversities, including by just being present and listening. Thank you, Dad, for teaching me so many practical life skills, including how to change a tire, fix household appliances, paint a wall, and build furniture.

This is for my husband and partner in life, Harrison. I am so grateful to have you as my rock, cheerleader, and safe place. Thank you for the countless hours spent proofreading and brainstorming. I love you and the life we have built together.

This is for my sister, Casey, and brother-in-law, Scott. Thank you for your endless support, humor, and love. You both remind me that life is about balance and to not take anything too seriously.

This is for my nieces, Charlie, Hannah, and Noa. Never stop being brave and kind in all you do.

This is for my friends, who have been unwavering in their support and have rescued me from academic/existential spirals numerous times through impromptu adventures. You remind me of the importance of connection and laughter.

This is for my tiny rescue dog with a big personality, Teddy. You rescued me as much as I rescued you. Thank you for always sensing when I need your cuddles most. You are so loved.

Finally, this is for survivors of abuse. May you find hope, community, support, safety, and healing. May others treat you with kindness and compassion as you find trust in the world again.

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I am extremely grateful to my chairperson and mentor, Dr. LaTonya Wood. Your support, guidance, knowledge, and expertise has been invaluable not only in the completion of this dissertation, but also throughout my doctorate program. I am honored to walk in your footsteps through my internship this year. Thank you to my committee member, Dr. Veronica Viesca, for your invaluable feedback throughout this process.

I would like to thank all of my professors who have guided me throughout my undergraduate and graduate career. You have instilled in me the value of open-mindedness and reminded me that learning is a lifelong journey.

To my clinical supervisors, thank you for all that you have taught me – not only in how to be a good clinician but in how to be a good human. Thank you for teaching me the power of being present, practicing acceptance, and the value of being my authentic self as a psychologist.

Thank you to my sister, Casey, who picked me up every time I fell down and convinced me that I am stronger and more resilient than I thought I could ever be. You are an amazing therapist and forged our shared Pepperdine graduate school path.

I am so grateful for my research assistants who have supported me in this process and have reinforced the power of teamwork. We did it!

Thank you to my cohort for all the ways I have learned from you, laughed with you, and made lifelong friendships with you all. I hope our futures hold endless moments of us cheering each other on and celebrating!

VITA

Education

DOCTOR OF PSYCHOLOGY **FALL 2020 – SUMMER 2024**

PEPPERDINE UNIVERSITY GRADUATE SCHOOL OF EDUCATION AND PSYCHOLOGY

- Clinical Psychology, APA-Accredited Psy.D Program
- As of July 2023: 81 credit units completed
- Track orientation emphasis: Systems & Psychodynamic
- Advisor and chairperson: LaTonya Wood, PhD

MASTER OF ARTS **FALL 2018 – SPRING 2020**

PEPPERDINE UNIVERSITY GRADUATE SCHOOL OF EDUCATION AND PSYCHOLOGY

- Clinical Psychology, APA-Accredited Program

BACHELOR OF ARTS **FALL 2011 - FALL 2015**

LOYOLA MARYMOUNT UNIVERSITY

- Major: Psychology, Summa Cum Laude honors, Valedictorian nominee

Internship

PSYCHOLOGY RESIDENT/DOCTORAL INTERN **AUGUST 2023 – AUGUST 2024**

PROVIDENCE SAINT JOHN'S CHILD & FAMILY DEVELOPMENT CENTER (SANTA MONICA, CA)

- APA-Accredited Doctoral Psychology Internship Training Program
- Utilize evidence-based practices, to treat a wide-range of presenting problems to provide individual, dyadic, and family therapies to children, adolescents, and caregivers in a multicultural community clinic setting
- Conduct comprehensive psychological assessments, utilizing a wide range of objective and projective measures, and engaging in weekly didactic assessment seminars to broaden knowledge in cognitive, academic, projective, and adaptive assessments and assessment consultation
- Lead clinician at Grandview Elementary, providing school-based mental health treatment to students and caregivers, while collaborating with school staff t_o_ _i_n_c_r_e_a_s_e_ _c_l_i_e_n_t_s_' _n_e_t_w_o_r_k_ _o_f_ _community support, as a member of the Families and Schools Together (FAST) team
- Facillitate research investigating and reporting on the needs of school-based mental health providers and school staff to better understand and meet the mental health needs of clients receiving school-based mental health services
- Provide clinical consultation to doctorate-level practicum students, as well as receive supervision of consultation and training in developmental- and competency-based supervision approaches
- Deliver clinical services to patients with cleft palate and craniofacial needs as part of the Cleft Palate Center team a_t_ _P_r_o_v_i_d_e_n_c_e_ _S_a_i_n_t_ _J_o_h_n_'s_ _H_e_a_l_t_h_ _C_e_n_t_e_r_, collaborating w_i_t_h_ _t_h_e_ _c_e_n_t_e_r_'s_ _multidisciplinary team including plastic surgeons, pediatricians, speech pathologists, dentists, and orthodontists (hospital rotation to start early 2024)
- Certification in Interpersonal Psychotherapy (IPT) and Managing and Adapting Practices (MAP) (projected completion May 2024)
- Supervisors: Dr. Olga Belik and Dr. Lydia Kim

Clinical Experience

DOCTORAL PRACTICUM THERAPIST **JULY 2021 – JUNE 2023**

INSTITUTE FOR GIRLS DEVELOPMENT (PASADENA, CA)

- Provide assessment, diagnosis, and treatment for children, adolescents, and families from diverse sociocultural backgrounds at a low-cost, sliding-scale
- Conceptualize and utilize interventions grounded in Family Systems, Acceptance and Commitment Therapy, and somatic/mindfulness approaches

- Co-facilitate group psychotherapy focused on empowerment, social skills development, and emotional regulation skills for 3rd -5th graders
- Participate in weekly didactics, case consults, and group supervision with special focus on decolonizing therapy and cultural conceptualization
- Work within a multi-disciplinary team conducting referrals and utilizing consultation with other providers
- Supervisor: Dr. Grace Goodman, Psy.D

DOCTORAL PSYCHOLOGICAL ASSESSMENT TRAINEE **APRIL 2022 – JUNE 2023**
INSTITUTE FOR GIRLS DEVELOPMENT AND FLOURISH THERAPY AND WELLNESS CENTER (PASADENA, CA)
- Provide psychological assessment to children, adolescents, and young adults
- Conduct clinical biopsychosocial interviews, score, and interpret results into report, integrating background, context, and cultural considerations into strengths-focused, diagnostic reports
- Participate in didactics and consultation with a team of neuropsychologists

DOCTORAL PRACTICUM THERAPIST **JULY 2022 – JUNE 2023**
FLOURISH THERAPY AND WELLNESS CENTER (PASADENA, CA)
- Provide assessment, diagnosis and treatment for adults from diverse sociocultural backgrounds at a low-cost, sliding-scale
- Supervisor: Dr. Grace Goodman, Psy.D

DOCTORAL CLINICAL TRAINEE **SEPTEMBER 2020 – PRESENT**
PEPPERDINE UNIVERSITY COMMUNITY CLINIC (CULVER CITY, CA)
- Provide assessment, diagnosis, and treatment of children, couples, and adult clients from diverse sociocultural backgrounds utilizing evidenced-based interventions including: psychodynamic, acceptance and commitment, somatic interventions, and mindfulness-based approaches
- Provide psychotherapy at a low-cost, sliding scale community clinic for clients with various clinical problems including generalized anxiety, social anxiety, phobias, mood disorders, inattention and hyperactivity, perfectionism, body image, low self-esteem, identity exploration, personality disorders, and interpersonal conflict
- Conduct crisis interventions and management as needed, covering the "on call" clinician urgent phone line on rotation
- Participate in weekly dyad supervision, didactics, and case conferences with case presentations
- Supervisors: Aaron Aviera, PhD & Bruce Rush, Psy.D

BEHAVIORAL INTERVENTIONIST AND CARETAKER **FEBRUARY 2017 – AUGUST 2022**
(LOS ANGELES, CA)
- Developed and provided interventions to improve emotional regulation, behavioral, coping, self-care, social, and independence skills
- Developed and executed educational programs to target developmental and academic goals, collaborating with an educational therapist

CLINICAL INTERN **MAY 2019 – AUGUST 2020**
MINDFUL HEARTS: THERAPEUTIC PROGRAMS FOR KIDS (SANTA MONICA, CA)
- Assisted in developmentally-appropriate interventions to encourage social skills development, mindfulness, and emotional regulation skills
- Trained in Dr. Dan Siegel's child development models including the Whole Brain Child
- Supervisor: Dr. Thuy Bui, PhD

CLASSROOM EMOTIONAL & BEHAVIORAL AIDE **FALL 2017 – SPRING 2018**
(ENCINO, CA)

- Developed and executed interventions to provide scaffolding of academic materials, and built social skills and prosocial behavior
- Fostered a nonjudgmental environment by encouraging expression of feelings and emotional support

Supervision Experience

PEER CONSULTANT **SEPTEMBER 2022 – PRESENT**
PEPPERDINE UNIVERSITY COMMUNITY CLINIC (CULVER CITY, CA)

- Provide peer-to-peer weekly supervision to first year Psy.D students
- Develop supervisees' clinical skills through discussion of clinical cases, review of recorded sessions, training in crisis assessment and safety management, working through transference and countertransference, and building a therapeutic alliance
- Review of clinical documentation to support clinical writing skills in supervisees including progress notes, intake reports, and case conference briefs for client presentations
- Documentation of supervision to track supervisees' active clients, crises, clinical information, therapist strengths, and areas of growth to integrate into mid-year and final-evaluations
- Participate in weekly case conferences to support supervisees' development of diagnostic and clinical skills
- Participate in weekly supervision (of supervision) to promote growth of supervisory skills
- Participate in supervision skills training conducted by Dr. Edward Shafranske, PhD and Dr. Carol Falender, PhD
- Supervisor: Dr. Aaron Aviera, PhD

Research

DISSERTATION RESEARCH: PRIMARY INVESTIGATOR **SEPTEMBER 2020 - PRESENT**
PEPPERDINE UNIVERSITY GRADUATE SCHOOL OF EDUCATION AND PSYCHOLOGY

- Topic of Study: ADDITION OF THERAPEUTIC ANIMALS TO EVIDENCE-BASED TREATMENTS FOR CHILD AND ADOLESCENT SURVIVORS OF SEXUAL ABUSE
- Conduct a comprehensive systematic review
- Utilize a PRISMA framework to report on methodology
- Train and oversee four Research Assistants in conducting full-text screenings and quality appraisal of data, in a systematic manner
- Dissertation Committee: Dr. LaTonya Wood, PhD and Dr. Veronica Viesca, PhD

RESEARCH ASSISTANT **MAY 2019 – JUNE 2020**
PRIVATE PRACTICE (SANTA MONICA, CA)

- Topic of study: clinical application of Jungian theory in group therapy context
- Topic of study: intergenerational trauma and biological changes at the cellular level, adapted interventions in recognition of the mind-body connection for healing trauma

RESEARCH ASSISTANT/CLINICAL VOLUNTEER **SUMMER 2017 – SPRING 2018**
EXODUS RECOVERY (CULVER CITY, CA)

- Researched and developed a cultural humility presentation utilized to train clinicians nationwide
- Participated in case conceptualization and treatment planning during weekly case conferences

SENIOR CAPSTONE RESEARCH THESIS **FALL 2015**
LOYOLA MARYMOUNT UNIVERSITY SCHOOL OF PSYCHOLOGY

- Topic of Study: The Fear of Relationship Intimacy Scale: A Quantitative Study
- Developed a scale to assess and capture three discrete individual differences
- Tested validity on a sample of college-aged adults

Teaching Experience

TEACHING ASSISTANT **FALL 2018 – SPRING 2019**

PEPPERDINE UNIVERSITY GRADUATE SCHOOL OF EDUCATION AND PSYCHOLOGY

- Developed curriculum for the Diagnosis and Treatment of Mental Health Disorders (PSY 600)
- Incorporated student learning objectives and Board of Behavioral Science requirements into course assignments and lecture content

GUEST LECTURER **MARCH 2020 – JUNE 2021**

PEPPERDINE UNIVERSITY GRADUATE SCHOOL OF EDUCATION AND PSYCHOLOGY

- Led and participated in a student Q&A panel to provide guidance and mentorship to classes of 24 M.A. and MFT psychology students

Leadership & Mentorship

SECRETARY **SEPTEMBER 2022 - PRESENT**

PEPPERDINE UNIVERSITY PSYD STUDENT GOVERNMENT ASSOCIATION (SGA)

- Support and record minutes for all monthly SGA meetings
- Participate in organization of annual Psy.D program anti-racism learning day
- Establish and maintain conducive environment for student learning, well-being, connection, and community

FOUNDING COUNCIL MEMBER **FALL 2018 – FALL 2020**

PEPPERDINE UNIVERSITY EXECUTIVE LEADERSHIP COMMITTEE (ELC)

- Created, maintained, and organized the Executive Leadership Committee (ELC) with Professor Jasmeet Bhullar
- Supported in the development of community-building events
- Enhanced the academic environment to optimize student learning, promote well-being, and create a sense of community and belonging

Outreach

- Q & A Student Panel, Pepperdine University (January & September 2021; January 2022)
- Somatic Experiencing Interventions for Clinicians, Institute for Girls Development (January 2022)
- Parenting and the Whole Brain Child, Mindful Heart Therapeutic School (March 2021)
- Cultural Humility for Clinicians, Exodus Recovery (November 2017)

Didactic Trainings/Seminars

- Social Skills Training and Whole Brain Child Development, Dr. Thuy Bui Psy.D (June 2019)
- Practicing Anti-Racism in Therapy, Dr. Anat Cohen and Dr. Melissa Wasserman (September 2020)
- Somatic Experiencing Training, Dr. Aaron Aviera PhD (September 2020)
- Crisis Management and Response, Pepperdine University (September 2020)
- Cognitive Behavioral Therapy and Interventions, Pepperdine University (October 2020)
- COVID, Racism and Uncertainty: Addressing Grief, Resilience and Self-Care, Dr. Rosenberg (September 2020)
- Telehealth Technical Training and Related Competencies for Clinicians, Dr. Melissa Wasserman (September 2020)
- Helping Youth and Families Cope with COVID Related Stress, Dr. Tangeman (September 2020)
- Implicit Bias, Health Equity, and Anti-Racism, Dr. Rosenberg, (September 2020)
- Expressive Arts Therapy for Children and Adolescents, Sushi Frausto LMFT, (August 2021)
- Transgender and Gender Expansive Youth: Clinical Tools for Working with Youth Across the Gender Spectrum, Dr. Caroline Carter (August 2021)

- Psychotherapy Skills Training, Dr. Joan Rosenberg, Pepperdine University (September 2020, September 2021)
- Gaps and Gains: Understand the Social, Emotional, and Academic Setbacks and Gifts of the Covid-19 Year, Dr. Melissa Johnson (September 2021)
- Cliques, Conflicts, and Connections, Dr. Melissa Johnson (October 2021)
- Effective and Compassionate Clinical Work with Transgender and Nonbinary Children, Teens, and Families- 8 weeks, Dr. Caroline Carter (January, February 2022)
- Collaborative Assessment and Management of Suicidality (CAMS), Tina O'Brien LPCC, (February 2022)
- Working with Trans Clients, intermediate clinical training, Jordan Shin MS, LPC (March 2022)
- Gender Identity Development, Working with Clients Across the Gender Spectrum, advanced team training, Dr. Em Matsuno (April 2022)
- The Social Brain, Trauma in School and Learning Differences, Dr. Daniel Franklin (September, 2022)
- Cultural Humility Training for Clinicians Working with Gender Diverse Populations, Julian R. Harris MSW LICSW; LICSW-C (October 2022)
- HAES and Eating Disorders, Shira Rosenbluth, LCSW (November 2022)
- Health Psychology and Pain Management, Dr. Melissa Johnson (November 2022-May 2023)
- Grief in Clinical Work, Dr. Jennifer Levin (April 2022)
- Anti-Oppressive Therapy, Dr. Katrina Anaya (May 2023)
- Stand Up Speak Out, Dr. Melissa Johnson and Dr. Vicki Chiang (June 2023)

Professional Organizations

- American Psychological Association-Student Member
    - Division 44: Society for the Psychology of Sexual Orientation and Gender Diversity
    - Division 53: Society of Clinical Child and Adolescent Psychology
    - Division 54: Society of Pediatric Psychology
    - Division 56: Trauma Psychology
- Los Angeles County Psychological Association-Student Member
- Psi Chi Honors Association-Student Member

ABSTRACT

Objective. An integrative systematic review with a narrative synthesis was conducted to explore and identify the benefits of integrating a therapy animal into trauma-informed treatment for children and adolescent survivors of sexual abuse. This review detailed various ways therapy animals were incorporated into treatment and when the integration of therapy animals is most and least beneficial. *Methods.* Eight electronic databases were searched for relevant articles. The search was limited to peer-reviewed articles published in the English-language. Articles published in and out of the United States were included, without a limit on date published, in order to capture any cultural differences and contain all relevant articles. All studies included a therapy animal as part of the treatment modality and discussed treatment outcomes. Participants were comprised of youth under the age of 18 seeking treatment due to trauma symptoms related to sexual abuse. *Results.* Findings from 12 articles revealed a range of ways therapy animals were integrated into trauma treatment, including those categorized into structured, semi-structured, and unstructured approaches. Low attrition rates and significant improvements in a wide-range of trauma-related symptoms including PTSD (n=7, 58.33%), internalizing symptoms (n=9, 75.00%), externalizing symptoms (n=6, 50.00%), and interpersonal functioning (n=8, 66.67%) were indicated by outcomes from the included studies. Additionally, benefits that enhanced the treatment program (n=7, 58.33%), produced positive changes in and out of therapy (n=6, 50.00%), and augmented post-treatment outcomes (n=3, 25.00%) were associated with the therapy animal. *Conclusions.* Despite the wide-range of heterogenous symptoms that can develop in youth after sexual abuse and the distinctive ways animal-assisted therapy was integrated into different treatment modalities, themes emerged from the 12 articles reviewed around therapy animals supporting and augmenting treatment outcomes across age,

developmental level, gender, and cultural background. Animal-assisted therapy provided additional benefits to treatment which were associated with the presence of the therapy animal. A strength of this review includes its narrative synthesis of the current literature on animal-assisted therapy and trauma-informed treatment for youth in treatment for sexual abuse, as well as its recommendations for groups impacted by child sexual abuse, such as clinicians, parents and caregivers, governing officials, and survivors.

Keywords: Animal-assisted therapy, trauma-informed therapy, child sexual abuse

Chapter I: Background and Rationale

Statement of the Problem

As gathered in a national survey of 17-year-olds, the estimated prevalence for *child sexual abuse* (CSA) is 26.6% for females and 5.1% for males, which means that about 1 in 4 girls and 1 in 20 boys are sexually abused at some point during their childhood (Finkelhor et al., 2014). In the United States alone, around 60,000 incidences of CSA were confirmed by Child Protective Services in 2012 (U.S. Department of Health and Human Services, Administration on Children, Youth, and Families, 2013). Indeed, CSA impacts children of all cultures and socioeconomic statuses (Finkelhor, 1993), with global estimates for the prevalence of CSA varying depending on the country and ranging from 8-31% for females and 3-17.6% for males (Barth et al., 2013; Pereda et al., 2009; Stoltenborgh et al., 2015). Given that 60% of CSA survivors never report their abuse officially nor interpersonally, these estimates are expected to be a gross underestimate of actual incidences of CSA and the full magnitude of CSA remains unknown (Sedlak et al., 2010). Thus, it is evident that the prevalence of CSA is alarmingly high and widespread on a global level.

CSA is defined as sexual activity with a child who is not developmentally prepared, incapable of giving informed consent, or unable to understand the sexual act(s), which violates the general consensus of societal norms of acceptable behavior. Not only adults but other children can sexually abuse a child if the abuser holds a higher status of power, age, trust, responsibility, or developmental maturity than the abused (Norman et al., 2012; Signal et al., 2017).

Sexual abuse of a child can have long-lasting physical and emotional impairment as the child attempts to cope with the unthinkable. Each survivor's experience is unique to them and

can be impacted by individual resiliency factors and the severity and duration of the sexual abuse. CSA is an interpersonal trauma; consequently, trauma-related symptoms may begin to manifest during the sexual abuse and can extend over a lifetime, impairing functioning not only socially but in all aspects of life (Milot et al., 2010). In some cases, the sexual trauma may result in symptoms that meet the criteria for a diagnosis of post-traumatic stress disorder (PTSD). However, youth who have been sexually abused often present with a wide range of heterogenous symptoms, including internalizing and externalizing symptoms (Kendall-Tackett et al., 1993; Maniglio, 2009; Putnam, 2003).

Thus, CSA often results in the youth suffering treatment-resistant trauma-related symptoms, which, if left untreated, could extend across their lifetime (Cutajar et al., 2010). While psychotherapy treatments are available to help children process the trauma and reduce the trauma-related symptoms, barriers to treatment completion are common, and some symptoms, such as avoidance of trauma reminders, enhance difficulties in treatment. Solutions are desperately needed, as attrition rates for CSA, in particular, tend to be high; for example, trauma-focused cognitive behavioral therapy (TF-CBT) for children has incompletion ranges between 35-75% (Wamser-Nanney & Steinzor, 2017). To be further explored in this literature review, it appears from preliminary research that adding in a therapy animal helps to reduce barriers to treatment, augmenting and enhancing treatment outcomes (Dietz et al., 2012; Germaine et al., 2018; Mueller & McCullough, 2017; Parish-Plass, 2008; Signal et al., 2017; Wamser-Nanney & Steinzor, 2017).

However, there is a lack of integration among the literature, presenting a need for this systematic review. Specifically, articles are available that discuss the symptomology, treatment modality options, and other relevant factors relating to CSA. Similarly, the use of therapeutic

animals has been studied, with some studies focused on children with trauma histories. However, there has yet to be a systematic review complying and evaluating the literature on the benefits of adding in a therapy animal to trauma-focused therapy for youth survivors of sexual abuse. Thus, this review adds to the growing body of research on creative adjunctive interventions designed to better meet the needs of those most vulnerable by exploring the benefits associated with integrating therapy animals into treatment for youth survivors of sexual abuse.

Moreover, there are groups of people who may uniquely benefit from this systematic review. Clinicians may benefit from using this systematic review as a quick overview of the literature regarding the efficacy of adding therapeutic animals for the treatment of CSA and to guide the incorporation of therapy animals into their clinical practice, especially for clinicians seeking creative ways to navigate the barriers to treatment, such as those who have clients healing from sexual abuse that are struggling to engage or not improving in treatment. Parents and caretakers of youth who are survivors of sexual abuse may find this review helpful while searching for treatment modalities that will uniquely meet the needs of their child and provide the best opportunity for the resolution of trauma-related symptoms. This review also draws attention to a crucial topic for stakeholders and policymakers to direct their resources to fund prevention and treatment programs, as well as further research, to allow some of the most vulnerable groups in our society, children who have been abused, a chance to heal and reduce pain not only in the present but also in the future. Finally, survivors of CSA may find this review helpful in providing information on alternative approaches to augment their trauma treatment.

Current Research

Impact of Sexual Trauma on Youth

A recent longitudinal study found that youths who experienced CSA tended to have psychological symptoms that were more severe and remained worse over a longer period of time in comparison to children who experienced other forms of abuse (e.g., physical abuse; Lewis et al., 2016). Further, it appears that factors that often occur in relation to CSA (e.g., coercion and manipulation of the child to keep the sexual abuse a secret or to keep it within the family if the perpetrator is a family member; feelings of misplaced responsibility, powerlessness, shame, guilt, betrayal of trust, and loss of safety associated with the traumatic sexualization) may impact child sexual abuse survivors in a way that creates a symptom presentation unique from other traumatic experiences (Feiring et al., 1996; Finkelhor & Brown, 1985; Lewis et al., 2016). Given the nature of CSA, youth may experience an immediate trauma response as well as a wide range of trauma-related symptoms which can extend over the lifetime and impair functioning in all major areas; indeed, between 47-56% of adults with a history of CSA meet criteria for a psychiatric diagnosis, such as PTSD, depression, anxiety, eating disorders, and substance abuse (Martin et al., 2004). Importantly, the impact can also be devastating during childhood. A review of 45 studies indicated that youth who experience CSA most commonly develop PTSD, fears, behavior problems, low self-esteem, and sexualized behaviors. As a result, however, there was no one symptom or presentation (e.g., PTSD) seen in the majority of children (Kendall-Tackett et al., 1993). Thus, sexual abuse survivors experience vastly disparate clinical symptoms. Several meta-analyses and systematic reviews compiled information regarding the heterogenous nature of symptoms for youth with CSA, including those linked to a trauma-related diagnosis (e.g., dissociation, avoidance, etc.) as well as other internalizing and externalizing emotional and

behavioral symptoms (Kendall-Tackett et al., 1993; Maniglio, 2009; Putnam, 2003). In the following sections, trauma-related diagnoses will be discussed. Then, the author will expand the trauma response to include internalizing and externalizing symptoms to capture the wide-ranging impact of CSA on youth fully.

Trauma-Related Diagnoses

As detailed in the Diagnostic and Statistical Manual of Mental Disorders 5th Edition (DSM-5; American Psychiatric Association [APA], 2013), exposure to sexual trauma could result in Acute Stress Disorder or PTSD. Acute Stress Disorder and PTSD share similar symptomology. They are diagnosed through the display of four symptom clusters: avoidance, intrusion, hyperarousal, and negative changes in cognition or mood, which must occur following exposure to a traumatic event(s) (APA, 2013). Avoidance symptoms may present as internal or external avoidance of reminders of the traumatic event. Intrusion symptoms often present in children differently than adults and may be characterized by vague but distressing nightmares or play centered around trauma-related themes. Negative cognitions may present as depressive mood, negative cognitive beliefs, self-blame, or social withdrawal. The hyperarousal symptoms often appear as irritability, sensitive startle response, lack of concentration, insomnia, anger, and hypervigilance (APA, 2013). Dissociative symptoms may also be present. For children, dissociative symptoms may involve imaginary friends, sleepwalking, unpredictable behavior, and excessive daydreaming (APA, 2013; Collin-Vezina et al., 2013).

While the DSM-5 is the primary classification model of mental health clinical diagnosis in the United States, the International Classification of Diseases (ICD-11) is the official global classification and diagnosis model for diseases including mental illness (World Health Organization [WHO], 2018; Tyrer, 2014). The criteria for PTSD in the ICD-11 includes

exposure to extremely threatening event(s) and avoidance, re-experiencing, and hypervigilance symptoms which last for several weeks and result in significant impairment in areas of functioning (WHO, 2018). The diagnosis of complex PTSD (CPTSD, ICD-11) was developed to capture the disturbance in self-organization that can result from intersecting traumatic experiences, developmentally early trauma, or compounding trauma (Hebert & Amedee, 2020; Maercker, 2021). Criteria for CPTSD includes the three core symptoms of the ICD-11 PTSD diagnosis as well as problems in affect regulation (e.g., emotional numbing and irritability), interpersonal relationships (e.g., difficulties in creating or sustaining relationships), and self-concept (e.g. negative beliefs about self or feelings of shame or guilt; Hebert & Amedee, 2020; WHO, 2018; Maercker, 2021).

Emotional and Behavioral Symptoms

Given the heterogeneous nature of symptoms for survivors of CSA, symptoms and trauma responses do not always fit into the more restrictive DSM-5 or ICD-11 diagnoses (Saywitz et al., 2000). As evident in Murphy et al. (2014), sexually abused children who might not meet all the criteria necessary for a DSM or ICD diagnosis often still have trauma-related symptoms that impact aspects of healthy child development and cause significant clinical impairment. The symptoms can include partial expressions of the above-listed trauma symptoms, as well as psychological distress, cognitive distortions, somatization, and physical issues, such as increased sympathetic nervous system activity, neurostructural differences, sexual dysfunction, non-epileptic seizures, and chronic pelvic pain (Dietz et al., 2012; Kendall-Tackett et al., 1993; Lawson & Quinn, 2013; Maniglio, 2009; Milot et al., 2010; Putnam, 2003).

Further, symptoms resulting from sexual trauma can manifest in ways beyond those associated with the diagnoses and trauma responses discussed above. Internalizing symptoms

such as depression, suicidal ideation and non-suicidal self-injury, anxiety and fears, general psychological distress, psychotic symptomology, anger, personality disorders, issues with emotional regulation, and low self-esteem are associated with CSA (Kendall-Tackett et al., 1993; Maniglio, 2009; Putnam, 2003). Moreover, externalizing symptoms such as difficulties with interpersonal relationships, behavioral and attentional dysregulation (e.g., poor impulse control, hyperactivity, oppositional behavior), problems in functioning at school, aggression, suicidal behavior, inappropriate sexualized behavior, substance misuse, and engagement in high-risk sexual behavior are associated with a history of CSA (Kendall-Tackett et al., 1993; Maniglio, 2009; Putnam, 2003).

It is also important to acknowledge that CSA does not occur in a vacuum but may be indicative of other maladaptive environmental factors and is usually not the only traumatic childhood experience for these youths (Maniglio, 2009; Putnam, 2003). It is evident from the Adverse Childhood Experiences (ACE) study, and the Philadelphia ACE Project, that experiences of childhood trauma are associated with and compound upon each other, with the more ACEs an individual has in childhood linked to a higher risk of adverse health outcomes as an adult, including early death (Cronholm et al., 2015; Felitti et al., 1998). The Philadelphia ACE project found that over 83% of participants endorsed at least one ACE (Cronholm et al., 2015). Therefore, it is unsurprising that CSA commonly co-occurs with other traumas, including other forms of physical and emotional abuse (Perez-Fuentes et al., 2013). For youth who have been sexually abused, this means that those most marginalized (e.g., impacted by multiple forms of adverse experiences such as abuse, racism, community violence, living in foster care, etc.) are those most vulnerable and in need of support and effective early intervention.

Evidence-Based Trauma Treatment

While immediate and long-term therapeutic treatment is recommended for CSA, there has been a notable lack of conclusive evidence to support any one therapy treatment in recent meta-analyses, with authors citing small to medium effect sizes for most treatments and a lack of consistency across measured outcomes and long-term follow-up among studies looking at treatments for CSA (Narang et al., 2019; Tichelaar et al., 2020; Trask et al., 2011; WHO, 2017). In MacDonald et al. (2006) meta-analysis, which examined CBT for children who have been sexually abused, interventions were most effective on PTSD-related symptoms and anxiety. Still, they revealed no significant reductions in behavioral disturbances or depression-related symptoms. Further, Trask et al. (2011) meta-analysis revealed a trend of older youth (e.g., adolescents) having stronger treatment effects, perhaps due to most treatments having cognitive components that are easier for older children to utilize.

While the most widely studied trauma treatment is TF-CBT (Cohen & Mannarino, 2008; Dorsey et al., 2017; Hanson & Wallis, 2018; Silverman et al., 2008), recommendations of TF-CBT by governing bodies such as Society of Clinical Child and Adolescent Psychology (Division 53 of the American Psychological Association) are based on the DSM-5 diagnosis of PTSD (APA, 2013). This is problematic considering that PTSD is just one cluster of symptoms that does not capture the wide range of heterogeneous symptoms presenting in youth and resulting from CSA (Dietz et al., 2012; Kendall-Tackett et al., 1993; Lawson & Quinn, 2013; Maniglio, 2009; Milot et al., 2010; Putnam, 2003). Further, the WHO (2017) Clinical Guidelines for Child Sexual Abuse has criticized the lack of inclusion of cultural diversity across the TF-CBT studies and questioned the cultural congruence of TF-CBT for cultures that are not Westernized and called for adaptation to match children's developmental level, especially those

who are younger. The same report (WHO, 2017) did allow for a conditional recommendation for TF-CBT as a potentially effective treatment for CSA but labeled the research as "low-quality" and called for further research before making more robust recommendations. Thus, there is insufficient empirical support to label any treatments as conclusively evidence-based for youth who have experienced CSA. Regarding the components of trauma treatment, the formation and expression of a trauma narrative were described as a crucial element (Tichelaar et al., 2020). Given the magnitude of CSA and its psychological impact on youth, it is evident that there is a need for both effective treatment and creative ways to make the treatments available and already being utilized more effectively. Thus, this review's focus on therapy animals is crucial in evaluating a potential solution to augment treatment outcomes and reduce suffering for youth in treatment for CSA.

Trauma-Focused Cognitive Behavioral Therapy

While conclusive evidence is lacking on which trauma-focused treatment is most effective for youth survivors of CSA, as detailed by Cohen and Mannarino (2008), Trauma-Focused Cognitive Behavioral Therapy is a treatment that has been adapted for children ages three to 17, who have experienced sexual abuse and boasts preliminary support in Westernized cultures (WHO, 2017). Typically, TF-CBT involves concurrent therapy sessions for both the child and the caretaker(s), mainly conducted separately, consisting of eight individualized approaches as represented in the acronym PRACTICE: "Psychoeducation and Parenting skills; Relaxation skills; Affective regulation skills; Cognitive coping skills; Trauma narrative and cognitive processing of the traumatic event(s); *In vivo* mastery of trauma reminders; Conjoint child-parent sessions; and Enhancing safety and future developmental trajectory" (Cohen & Mannarino, 2008, p. 159).

The first module of TF-CBT, like most therapy modalities, focuses on establishing safety, building rapport and therapeutic alliance, as well as on the coping skill-building aspects of the treatment. The psychoeducation component of TF-CBT entails informing the caretakers of how the sexual trauma can impact both the child and other family members and includes destigmatizing the experience of therapy, teaching more appropriate parenting skills and interventions, or referrals to additional resources (Cohen & Mannarino, 2008). Relaxation techniques are usually taught to both caretaker and child to help reduce physiological hyperarousal and may include mindfulness, meditation, breathing exercises, progressive muscle relaxation, or calming music (Cohen & Mannarino, 2008). As detailed in Cohen and Mannarino (2008), the child's affective modulation skills are advanced by first identifying, and then targeting, emotional defects, often done through playing games focused on feelings to increase the child's emotional intelligence and to regulate both expressed and internal emotions. Cognitive coping skills are addressed for both the child and the caretaker, as the therapist will teach and then explore the connections between thoughts, which lead to feelings that result in behavior to identify and modify any maladaptive cognitive ways of coping (Cohen & Mannarino, 2008).

The second module of TF-CBT focuses on the trauma-related portions of treatment. As explained by Cohen and Mannarino (2008), trauma memories are addressed through the prompting of the therapist over many sessions, guiding the child through creating a trauma narrative, detailing the worst events, emotions, and bodily sensations related to the trauma. The trauma narrative functions to reveal and process any cognitive distortions the child holds regarding the trauma, minimizes trauma avoidance, and contextualizes "the child's traumatic experience into the larger framework of the child's whole life…" empowering the child to view

themselves as a whole person and not just a trauma victim (Cohen & Mannarino, 2008, p. 160). Children are then encouraged to express their trauma narrative using whatever artistic medium is most comfortable. If a neutral environmental stimulus triggers a child to remember and re-experience their sexual abuse, in vivo mastery of trauma reminders would be implemented using relaxation techniques and graduated exposure to the stimulus (Cohen & Mannarino, 2008).

The child is encouraged to express their trauma narrative to their caretaker to create channels of open and safe communication (Cohen & Mannarino, 2008). Finally, the therapist would include education for both the child and caretaker to ensure the future safety of the child (Cohen & Mannarino, 2008). These may include developing safety skills, teaching age-appropriate sexual behavior, and learning how a non-abusive, consensual sexual relationship would behave (Cohen & Mannarino, 2008).

Therapeutic Animals in the Treatment of CSA

Animal-assisted therapy (AAT) can be described as the addition of a trained therapeutic animal and their handler to a therapy treatment program to supplement the therapeutic interventions (Dietz et al., 2012). Horses and dogs are the most commonly utilized therapy animals (Serpell, 2006), although animals such as rabbits, small rodents, birds, and farm animals are also options.

In a meta-analysis conducted by Germaine et al. (2018), eight studies were reviewed to determine the efficacy of Animal-Assisted Therapy for the treatment of trauma-related symptoms and PTSD, and the results revealed a statistically significant effect (*Hedge's g* = 0.86, $p < 0.001$, 95% *CI*) for both the comparisons of treatment versus control and pre- versus post-intervention. The research indicated that including therapeutic animals could enhance overall

treatment outcomes, producing further symptom reduction than traditional therapy alone (Germaine et al., 2018; Signal et al., 2017).

Furthermore, as indicated in the study conducted by Signal et al. (2017), the addition of therapeutic animals resulted in not only a statistically significant reduction in symptoms, including hyperarousal, avoidance, intrusion, and dissociation symptoms, but also in recognizable clinical improvements. Given the participant's improved outcomes in Signal et al. (2017), it may follow that increasing individual contact with a therapeutic animal may improve the bonding with the animal, thus improving outcomes overall. The literature suggests that therapeutic animals may play a mediating role in the reduction of trauma-related symptoms and enhance the administration of evidence-based trauma therapy, augmenting treatment outcomes (Dietz et al., 2012; Germaine et al., 2018; Mueller & McCullough, 2017; Parish-Plass, 2008; Signal et al., 2017).

Reducing Therapeutic Attrition

For children who have experienced sexual abuse, trauma treatment can feel especially overwhelming and stressful. Murphy et al. (2014) found that sexually abused children tend to display higher levels of avoidance-related symptoms, which can prevent the completion of trauma-focused treatment and, ultimately, result in premature termination of treatment, as evidenced by an estimated 40-60% of children discontinuing trauma therapy before therapist-suggested termination. For the intervention of TF-CBT for children, the effectiveness is limited by attrition rates of 35-75%, prompting an inquiry of research to examine ways to decrease drop-out for children to fully benefit from TF-CBT (Wamser-Nanney & Steinzor, 2017).

The author hypothesizes that therapeutic interventions incorporating therapy animals may increase motivation and engagement for therapy participants, producing less attrition and thus

enhancing treatment outcomes. Studies involving the usage of therapeutic animals as an addendum to trauma treatment, as cited in the meta-analysis conducted by Germaine et al. (2018), reported treatment attrition rates of under 10%, with five of the studies reporting zero patient drop-out, as echoed in the Signal et al. (2017) study. Therefore, the addition of therapy animals into evidenced-based therapy interventions may allow for the child to complete the intervention and receive the full benefits of the therapy.

Emotional Bond Benefits

Children who have experienced trauma often develop an inability to trust adults as a symptom (Parish-Plass, 2008). It follows that sexually abused children would cultivate feelings of distrust towards adults, given that an adult may have committed the sexual abuse or, in the eyes of the child, failed to protect them from the abuser. This distrust may then be extended to their relationship with the therapist, creating an impediment to treatment. Cozolino (2014) explains how an individual who is unable to form attachment bonds to people due to a history of trauma could more easily attach to a therapeutic animal, fostering an environment of safety and trust.

A barrier of distrust can significantly impede the crucial development of a therapeutic alliance, and, in the absence of trust, the child can be more resistant to the therapy process, eventually resulting in attrition (Parish-Plass, 2008). Successful TF-CBT treatment outcomes have been determined to be dependent on the quality of the alliance formed with the therapist (Ormhaug et al., 2014). Therefore, the author conjectures that adding a therapeutic animal may improve the comfort of the child, encouraging therapeutic bonding between the animal, child, and therapist, as well as enhancing disclosure and inducing feelings of safety. As animals are not able to pass judgments or criticisms of the child, they can provide a grounding effect, bringing

the child into the here-and-now of the therapy session and offering unconditional support (Cozolino, 2014). Animals are believed to down-regulate the arousal and stress symptoms seen in children who have been sexually abused, creating an internal environment more conducive to therapy (Bleiberg et al., 2005; Cozolino, 2014; Parish-Plass, 2008).

Cultural Considerations When Integrating Animals in Therapy

As with any therapeutic intervention, it is important to consider culture when utilizing animals as part of therapy. It is important for clinicians to understand the unique, intersecting factors that may impact the degree to which AAT may be helpful or harmful in working with their clients. Factors such as a history of negative experiences with animals or a cultural belief that animals are unclean or otherwise undesirable may act as a barrier, blocking any added therapeutic value (Sheade & Chandler, 2012). It is recommended that during the intake process, clinicians inquire about the client's desire and willingness to include an animal in therapy and take the client's lead as to how appropriate it is according to their cultural beliefs and past history.

Rationale and Research Questions

Survivors of CSA are often left with devasting psychological and physiological symptoms. While there are trauma-informed treatments, promoting engagement and preventing attrition has been problematic. The literature suggests that therapeutic animals may play a mediating role in the reduction of trauma-related symptoms and enhance the administration of trauma therapy. Studies have shown how the addition of an animal alongside psychotherapy may augment treatment outcomes by reducing attrition and enhancing the emotional bond (Dietz et al., 2012; Germaine et al., 2018; Mueller & McCullough, 2017; Parish-Plass, 2008; Signal et al., 2017).

Based on preliminary research, children often feel extremely numb and emotionally detached after trauma and, thus, have difficulties forming a therapeutic alliance and engaging in therapy (Cozolino, 2014; Ormhaug et al., 2014; Parish-Plass, 2008). It is suggested that therapy animals are a more accessible means for the child to connect to the therapist meaningfully through bonding with the therapy animal and then transferring that bond onto the therapist. Studies suggest that the child can participate in therapy at a higher level due to the feelings of safety created through the therapy animal. Finally, the therapy animal may decrease early termination by increasing the child's interest in therapy, adding in a playful element, and providing secure attachment from a nonjudgmental being.

This systematic review aims to analyze, summarize, and evaluate the outcomes of animal-assisted therapy for youth survivors of CSA utilizing the current body of literature, with the goal of providing information and considerations for clinicians and caregivers interested in AAT. Specifically, three questions are addressed:

- RQ1: What are the ways therapy animals have been incorporated into trauma treatment for youth who have experienced sexual abuse?
- RQ2: Does the addition of a therapy animal to trauma-focused therapy provide any additional benefits for youth survivors of sexual abuse? If the integration of therapy animals provides benefits, what are they?
- RQ3: When would the use of a therapy animal be most and least beneficial?

Chapter II: Methodology and Procedures

Systematic Review Approach

An integrative systematic review approach with a narrative synthesis was utilized to analyze, summarize, and evaluate the potential benefits of integrating therapy animals into trauma-informed treatments for youth who have experienced sexual abuse. A meta-analysis was considered but ultimately ruled out, as both qualitative and quantitative articles were prevalent in the literature. An integrative review approach was deemed most appropriate to include a wider range of studies and recognize that the articles' findings often included both quantitative and qualitative (mixed) data. The methods applied in this systematic review were informed by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (Page et al., 2021).

Eligibility Criteria

Inclusion Criteria

Studies from countries outside the United States were included in the review as relationships between animals and humans may have different significance or acceptance across geography and culture. However, only studies written or translated into English and published in peer-reviewed journals were considered for this review. Articles were included regardless of the date published to capture the entire scope of relevant articles. The type of therapeutic setting was not limited in order to capture the range of creative animal-assisted interventions. Studies with quantitative, qualitative, and mixed methods were included. The studies' psychotherapy interventions were required to be trauma-informed treatment for children and adolescents with empirical support (i.e., trauma-focused CBT, narrative therapy). Articles were included regardless of sample size and statistical power. The researchers needed to describe or assess

trauma-related symptoms in some manner (i.e., interview, observations, trauma-symptom checklist) before and after the intervention in order to be included.

Types of Participants

The articles were considered only if participants were children and adolescents under the age of 18 with a reasonably suspected or confirmed history of sexual abuse. The studies included participants with psychological, behavioral, or physical trauma-related symptoms. Articles were not limited by gender identity or cultural backgrounds (i.e., socioeconomic status [SES], ethnicity, race, sexual orientation) to allow for more generalizable results and to be inclusive of youth across diversities and in consideration of any socio-cultural differences.

Exclusion Criteria

Studies were excluded if the animal was a "pet" or if the clinician was not a trained professional. Other exclusion criteria included if the participants were an adult, if the study did not have an official English language translation available, or if the participants experienced general trauma not differentiated to be related to sexual abuse. Meta-analyses, literature reviews, systematic reviews, and dissertations were excluded from this review in order to not provide duplicate information from the research and to provide information resulting from primary sources.

Search, Screening, and Selection Procedures

Electronic Databases

The search for articles was conducted on the following electronic databases: PsychInfo, PsychArticles, Sage Journals Online, Child Welfare Information Gateway, the Encyclopedia of Child and Adolescent Development, Published International Literature on Traumatic Stress (PILOTS), PubMed, Scopus, and Google Scholar. The databases were chosen based on their

ability to capture relevant articles, thus maximizing the inclusivity of all articles meeting the criteria.

Search Terms

Keywords were determined through a preliminary literature search. The search terms were documented in a spreadsheet called "Search Terms" (see Appendix A). The following primary search terms were chosen because they contain the actual terms operationalized based on the research variables "sexual trauma" AND "child," AND "trauma treatment" AND "trauma symptoms," AND "animal-assisted therapy." All search terms were assigned a corresponding identification (ID) number, and variations and synonyms of the search terms are provided in the search plan.

Search Plan

The search plan is an Excel spreadsheet for recording the search type, database used, ID numbers for the keywords, search syntax or instructions, fields to search, specifiers, and plan notes. The purpose of the search plan was to track the gathering of articles, which were later tested for inclusion and exclusion criteria. The search documentation Excel spreadsheet was formatted to track the variations in keyword combinations as well as the search date, a full search ID number, the type of database used, the database source, the search term ID number, search syntax, fields searched (i.e., Title, Abstract, References), search specifier of a peer-reviewed article, number of records produced via that search, and notes (see Appendix B Search Documentation).

Screening and Selection Record

The spreadsheet screening and selection record was used to track articles that were in consideration for inclusion in the study (see Appendix C). The screening and selection record

consisted of three distinct phases. Phase 1 recorded the screening of each article's title, abstract, and keywords. Phase 2 was a full-text review by primary and secondary reviewers to determine eligibility. Phase 3 was the final decision to include or exclude the article from the study. Analysis during the phases included: consideration and recording the author, year, title of the article, database, title, and keyword, abstract screening decision, full-text screen, criteria for inclusion and exclusion, secondary confirmatory decision, final decision, final decision date, and any additional notes. A flow diagram has been provided (see Appendix D PRISMA Flow Diagram) to assist the reader in conceptualizing the selection process.

Data Collection and Extraction Methods

Data Extraction Forms

The author developed, tested, and improved the data extraction tools before being reviewed by the dissertation chairperson. The data form was developed based on the guidance of the Cochrane Effective Practice and Organization of Care (EPOC, 2013) forms (see Appendix E). The form was designed to be compatible with articles regardless of methodology. The form was completed for each article that successfully passed the screening process. The form recorded the article ID number, the date the form was completed and the initials of the individual completing the form, the full article name, the source name/publication type, APA format citation of source, the aim of the study, general method, research design, database used, and keywords used. Information relevant to the three research questions was added to the data extraction form, including a description of the therapy animal (e.g., type, categorization, level of participation in therapy), a description of the therapy component (e.g. treatment type, duration of treatment), data related to benefits associated with the therapy animal, and counterindications for use of therapy animals. Also recorded in the data extraction form were the articles' research

variables, participant's characteristics, setting characteristics, analyses conducted, results, conclusions, and follow-up.

Quality Appraisal Methods

A quality appraisal form (see Appendix F) was selected to assess the trustworthiness, results, and relevance of the studies included in the review (Harrell, 2021). The quality appraisal form includes the authors and year, study ID, methodology, and specific design. The remainder of the form requires the reviewer to assign a number using a rating scale (3 = *strong,* 2 = *good/adequate,* 1 = *weak,* 0 = *missing,* N/A = *not available*). The form assigned a number based on the article's strength of literature foundation and rationale for the study, clarity and specificity of research aims/objectives/questions/ hypotheses, quality of research design or methodological approach, sample selection and characteristics, data collection tools utilized, data collection processes, analysis and presentation of data, discussion of study limitation, and consideration of culture and diversity. Finally, an overall rating was assigned based on cumulative quality assessment scores.

Data Organization, Analysis, and Synthesis

In order to organize data extracted from the articles, a database was created via an Excel spreadsheet using the data recorded on the Data Extraction and Quality Appraisal forms. This database allowed studies to be compared side-by-side so patterns or themes could emerge. Also, the articles' variations and differences were better understood through this organization of the data. Individual variables from each study were examined to construct descriptive overviews and identify key findings. The chosen studies were categorized based first on their methodology: qualitative/descriptive/case studies, correlational/comparative designs, and interventions/experimental/quantitative. Next, the studies were clustered and compared based on

different variables such as interventions, age of children, type of animal, and so on. After patterns, relationships, and themes were analyzed, the findings were organized, and the key data was recorded in evidence tables. The findings were then presented in narrative form. As deemed appropriate, conceptual models, such as graphs or charts, were provided to clarify the findings.

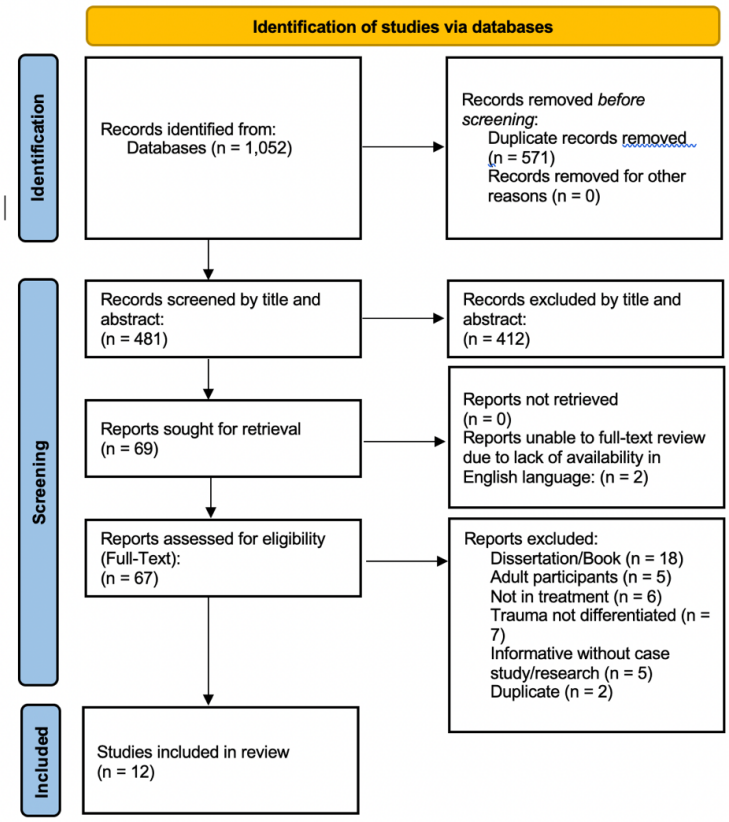
Chapter III: Results

Study Selection Results

The initial article search across the online databases yielded a total of 1,052 records. After 571 duplicates were removed, 481 records remained and were reviewed by title and abstract. This process excluded 412 records based on lack of relevance to the current review and an additional two articles based on lack of availability in the English language. The remaining 67 underwent full-text review, which removed 55 records from the study due to not fully meeting inclusion criteria (e.g., adult participants, dissertation or book, trauma not differentiated, etc.). Thus, a total of 12 studies were included in this integrative systematic review (see Figure 1).

Figure 1

PRISMA Flow Diagram



The author and two research assistants reviewed titles and abstracts. The author completed the primary full-text review of records, and secondary reviews were completed by one of the two research assistants. The author completed data extraction of the included articles, as well as analysis utilizing qualitative summaries, quantitative descriptive summaries, or a combination of both for studies that used mixed methodologies.

General Characteristics of Included Articles

The general characteristics of the included articles were reported in the Main Evidence Table (format shown in Appendix G). The Main Evidence Table records each article's assigned ID, authors, publication year/source/database, title, research methodology, study design characteristics and aims, setting characteristics (geographic location, therapy setting), study participant characteristics (gender, age, race/ethnicity, SES, etc.), and information relevant to research questions.

Studies were conducted in the United States, Australia, Israel, and Canada between 1998 and 2022. Locations included residential treatment centers, community-based/social services treatment centers, and private practices. The majority of studies were mixed methods (n = 6, 50.00%), with the remaining studies split between quantitative (n = 3, 25.00%) and qualitative (n = 3, 25.00%) methods. The studies' designs included quasi-experimental, exploratory, longitudinal, and case studies.

Quality Appraisal

The results of the quality appraisal of included studies are summarized in Table 1. All studies reviewed scored within the *strong* (n = 7; 58.33%) or *good/adequate* (n = 5; 41.66%) methodological quality categories. Some studies that received a *good/adequate* quality appraisal score were observational in nature, lacked comprehensive information about participants'

demographics, or lacked detail around some components of treatment. Most studies that received a *strong* quality appraisal score provided adequate details about participants, described the methods including treatment modalities, reported on outcomes, and considered limitations and recommendations for future study.

Table 1

Quality Appraisal

Methodological Quality of Included Studies	*n*	%
Exemplary	0	0
Strong	7	58.33
Good/Adequate	5	41.66
Weak	0	0

Research Question 1: Ways Therapy Animals were Integrated into Treatment

Research Question 1 focused on gathering information on how these studies incorporated therapy animals into their trauma-focused treatment for youth who have experienced sexual abuse. The articles had a wide range of distinct treatment modalities and formats, types of therapy animals, environmental settings, and various approaches for incorporating therapy animals into treatment. Descriptive narratives from the included studies were extracted, synthesized, and organized according to the amount of structure and flexibility applied. The majority of studies had a canine as the therapy animal (n = 5, 41.67%), four studies had multiple types of therapy animals (n = 4, 33.33%), and three studies utilized therapy horses (n = 3, 25.00%). Most articles included CBT interventions or elements (n = 9, 75.00%), with three of these studies taking an intensive multi-modal approach focused on CBT (n = 3, 25.00%) and one also including play therapy (n = 1, 8.33%). One study's sole treatment modality was play therapy (n = 1, 8.33%), while another study (n = 1, 8.33%) utilized narrative and play therapies. Finally,

one study's treatment modality focused on individual therapy based on the ARC model (n = 1, 8.33%). Studies were primarily conducted at community-based/social services treatment centers (n = 9, 75.00%), then residential treatment centers (n = 3, 25.00%), and one private practice (n = 1, 8.33%).

All 12 articles were reviewed for this research question (n = 12, 100.00%), and categorized into structured, semi-structured, and unstructured ways of integrating therapy animals, groupings constructed by the author based on information gathered from the articles. Articles' integration of AAT was sorted into the structured category if articles specifically characterized themselves as *structured* approaches to AAT or interactions with the therapy animal followed a sequenced treatment program or model, and the therapy goals were directly targeted through each interaction. Articles' integration of AAT was placed under semi-structured approaches if the participant was generally allowed to freely interact with the therapy animal during sessions in an unstructured manner and there were still therapeutic goals that were being met through some purposeful/structured interventions, such as the therapist telling a trauma narrative from the animal's perspective to normalize the experience and enhance disclosure. Finally, articles that lacked purposeful connection of therapy goals to the interactions with the therapy animals and primarily had unstructured interactions in session were considered unstructured approaches.

Table 2

Descriptions of Features of Included Studies

	Descriptions of Features	*n*	%
Types of Therapy Animals	Canine	5	41.67
	Multiple Animals	4	33.33
	Equine	3	25.00
Types of Treatment Modalities	CBT Interventions	9	75.00
	Play Therapy	1	8.33

	Descriptions of Features	*n*	%
	Narrative/Play Therapy	1	8.33
	ARC Individual Therapy	1	8.33
Treatment Settings	Community Based/Social Services Treatment Centers	9	75.00
	Residential In-Patient Treatment Centers	3	25.00
	Private Practice	1	8.33
Integration of Therapy Animals	Structured	8	66.67
	Semi-Structured	2	16.67
	Unstructured and Semi-Structured	1	8.33
	Unstructured	1	8.33

Structured Integration of Therapy Animals

Eight studies reported structured approaches for integrating therapy animals into treatment (*n* = 8, 66.67%). Kemp et al. (2014) and Signal et al. (2013) described experiential therapy approaches, referred to as *Trails of discovery equine facilitated psychotherapy* (EFT), as following the guidelines set forth by the Equine Assisted Growth and Learning Association model (see "EAGALA, the global standard", 2018, for more details). Both studies were conducted at the Phoenix House, a community mental health treatment center in Australia, at discrete periods of time. The treatment baselines were described similarly as traditional counseling with cognitive elements. Children and adolescents between the ages of 8 to 17 saw an individual therapist for the first 6 weeks in Kemp et al. (2014) study, while the same age groups saw an individual therapist for time periods ranging from 2 weeks to 12 months in Signal et al. (2013) study. For both studies, the EFT program commenced after the baseline treatment period and lasted between 9-10 weeks, with once weekly, 90-minute sessions (Kemp et al., 2014; Signal et al., 2013). The sessions involved learning horsemanship skills and groundwork exercises, with an emphasis on creating awareness and insight around the youths' thoughts and feelings, emotional reactions to events, and interpersonal dynamics through connecting the EFT interventions to each participants' treatment goals and everyday life. Additionally, each

intervention is focused on topics (e.g. forming healthy boundaries, forming trust, interpersonal communication, increasing self-awareness and perception, and body language), which are then adapted in congruence to participants' cultural background, developmental stage/age, and differences in ability.

Naste et al. (2018) study utilized the equine facilitated therapy for complex trauma (EFT-CT) model. EFT-CT incorporates the evidence-based attachment, regulation, and competency (ARC) framework, which specifically focuses on safety, attachment, and regulation throughout the program. EFT-CT adds "routines" and "rituals," such as greeting, leading, and grooming the horse at the beginning of every session, to increase the sense of safety and form a healthy attachment between the horse and participant (Naste et al., 2018, p. 292). The establishment of clear boundaries and safe behavior around the horses helps to create mutual respect while nurturing physical touch forms a trusting relationship in and out of the horse-youth and clinician-youth dynamics. By modeling emotional regulation skills and ways to appropriately interact with the therapy horse, the clinician coaches the youth through ways to attune and respond non-verbally to the therapy horse's emotions and needs, to which the horse mirrors and reflects. This process develops communication skills and intrapersonal and interpersonal emotional awareness that can extend to interpersonal relationships, improving attachment dynamics.

Regulation, the third component of ARC, targets somatic dysregulation through increasing bodily awareness and developing calm and thoughtful movements to effectively communicate with the therapy horse on a non-verbal level (Naste et al., 2018). Co-regulation is created as the youth relaxes and responds to changes in the horse's gait/behavior, and subsequently feels the shift in the horse's emotions, which leads to a shift in the youth's internal emotional states. Co-regulation is then reinforced as the youth syncs with the therapy horse's

natural rhythm of their walk, trot, and canter gaits. The clinician helps the youth to tap into their natural somatic rhythms that feel regulating, both on and off of the horse, to internalize this coping skill. Which can then be accessed outside of the EFT program, when the youth feels emotionally or physically dysregulated.

Reeson et al., (2020, 2022), and Silverstone et al. (2016) are three discrete studies, all of which were conducted in Alberta, Canada. While each varied somewhat in their sample size, age of participants, variables/outcomes measured, and length of treatment, all three studies were used to evaluate the efficacy of the same intensive multi-modal treatment approach created specifically for youth who are healing from sexual abuse trauma at a residential in-patient 'camp-like' setting, known as the Be Brave Ranch. The trauma-focused treatment program, while designed to be completed during four separate stays or rounds of treatment over the course of a year, Reeson et al. (2020) study followed adolescent females through the first round of treatment which lasted 2 weeks and Silverstone (2016) followed 35 female and male youth, between 8 to 12 years old, through the first round of treatment which lasted 4 weeks. In contrast, Reeson et al. (2022) looked at outcomes for 153 female, male, and non-binary child and adolescent participants, all of which completed one round of treatment lasting between 2 to 4 weeks, and compared the outcomes to those of participants who subsequently completed round two of treatment. The cohorts of participants who completed round two treatment then have their outcomes compared between groups whose round two treatment was completed before versus during the context of the COVID-19 pandemic.

The multi-modal treatment program developed for the Be Brave Ranch, while focused on TF-CBT, is sequenced based on the neurosequential model of therapy (NMT; Perry, 2006, as cited in Reeson et al., 2020; 2022; Silverstone et al., 2016). NMT suggests a neurological

bottom-up treatment approach for trauma as being particularly beneficial, as first working within lower brain networks and creating regulation, it later becomes easier to engage in the TF-CBT work of creating and re-processing the trauma to form the trauma narrative, which targets upper brain neural networks. Thus, the treatment focus of the first round of therapy at the Be Brave Ranch is focused primarily on therapy modalities adjunctive to TF-CBT to build up regulation, safety, and therapeutic alliance, alongside beginning to build up the regulatory skills that align with the first module of traditional TF-CBT (Reeson et al., 2020, 2022; Silverstone et al., 2016). Thus, animal-assisted therapy (AAT), art therapy, yoga and meditative therapy, music therapy, recreational therapy, and culturally-congruent activities such as drumming circles are the focus of the first treatment period. While AAT is structured into each participant's daily schedule and is described as individually linked to each participant's treatment goals, there is a notable lack of further details in the articles around the nature of the interactions. All three studies cite a secondary resource article on the program structure as well as the Be Brave Ranch's website as sources for further information, which indicated that the therapy animals were both horses and dogs. The second, third, and fourth rounds of treatment are primarily focused on TF-CBT, with hours spent daily on individual and group therapy components.

Signal et al. (2017) and Taylor et al. (2016), while discrete studies, were both conducted through a collaboration with therapy canines at the Royal Society for the Protection of Children and Animals (RSPCA) and therapy at a community clinic in Bundaberg, Australia, and followed a similar 10-week AAT program. Both studies had 20 participants between the ages of 5 to 12. Signal et al. (2017) participants consisted of 12 males and eight females, while Taylor et al. (2016) participants were comprised of 11 males and nine females. Both studies had participants complete assessments at the time of intake and again pre-AAT program to establish a

comparison for post-AAT program assessment scores. The time between intake and pre-AAT program varied for each participant with all waiting at least two months and up to 11 months (average of 6 months) for the program to begin. The participants were split into groups with approximately six participants and completed the program in that same cohort. For the first 3 weeks, the participants visited the RSPCA shelter, engaging in 90-minute weekly group therapy sessions, 30 minutes of which was spent interacting with a therapy dog and their handler, as well as a clinician. Week 1 focused on ways to safely interact with and touch a therapy dog and education around how a dog expresses feelings through body language. Week 2 built upon week one's lesson, and taught ways to identify emotions and positively reinforce behavior in the therapy dog. Week 3's lesson examined ways to recognize and identify potential causes of emotions, while building empathy for the therapy dog. The clinicians extended these skills to the participants' emotional experiences and human interactions through the AAT group therapy time in the first 3 weeks, as well as the during the next 7 weeks of group therapy. The group therapy focused on developing empathy, coping skills for emotional and bodily regulation, and adaptive interpersonal skills, such as verbal and non-verbal communication, setting boundaries, forming interpersonal connections, and asking for support.

Semi-Structured Integration of Therapy Animals

Two studies described their use of therapy animals in a way consistent with the author's categorization into semi-structured integration of therapy animals (n = 2, 16.67%). In one of the earliest accounts of AAT, Reichert (1998) shared her clinical experiences with her therapy dog "Buster" at the Project Against Sexual Abuse of Appalachian Children, a community clinic established to provide treatment to children who have been sexually abused in Knoxville, Tennessee. Buster was integrated into weekly individual play therapy with a trauma-focused

narrative component, once the child agreed to follow the safety guidelines of interaction. Emotional expression was encouraged through telling stories from Buster's perspective which related to the child's sexual trauma and allowed more comfort in discussing their trauma narrative. The stories were adapted based on developmental age of the child and their presenting symptoms. Reichert (1998) described how she would gather information and ask questions through Buster, model empathy and kindness through interacting with Buster, and how the children would often hold Buster's paw or stroke his back to soothe and regulate themselves.

Eggiman (2006) provided a case study to illustrate the integration of a therapy dog, named "Kotter," with play therapy and cognitive behavioral therapy (CBT) at a trauma therapy practice in Indiana, United States. The 10-year old female first learned the guidelines for interaction before Kotter joined in on her weekly sessions. The sessions were then structured through greeting routines, as the child settled her body before greeting the dog and then sat down with the dog beside her and pet/held his hand. Stories about Kotter were used to connect therapy content and goals to Kotter's emotions and behavior, encouraging safety and disclosure.

Unstructured Integration of Therapy Animals

One study (n = 1, 8.33%) illustrated an unstructured approach to integrate a wide range of therapy animals (e.g. canines, hamsters, birds, barn animals, rats) into trauma treatment for children. Parish-Plass (2008) shared her clinical experiences and cases working with children through an animal-assisted individual play therapy approach at the Bayit Lechol Yeled B' Yisrael Emergency Shelter for At-risk Children in Israel. Parish-Plass (2008) details how the therapy animals were present in all sessions and available for gentle interactions throughout the therapy process. Sessions with her clients were weekly and averaged 6 months, and the therapy animals were held and stroked by the children to provide a calming presence, non-judgmental

support, and to model healthy relationships and attachments. Parish-Plass (2008) also described how children projected their trauma narratives onto the animals, identifying with the animals' experiences, which the children often made up as part of the play therapy.

Unstructured and Semi-Structured Integration of Therapy Animals

One study had both unstructured and structured integration of therapy animals into treatment, and thus, will be discussed here (n = 1, 8.33%). Dietz et al. (2012) compared outcomes from three discrete trauma treatment groups at a child advocacy community clinic located in a major Southern city in the United States, and had 153 participants between the ages of 7 to 17. All three types of treatment groups followed the same 12-week trauma-focused group therapy approach focused on identifying emotions and triggers, increasing self-esteem, setting appropriate boundaries, developing trust, and building coping skills. Each therapy group consisted of six to 10 children, matched based on age and gender. Treatment condition one was referred to as the "No Dogs" therapy groups and consisted of the above standard group treatment (Dietz et al., 2012, p. 671). Treatment condition two was referred to as the "Dogs No Stories" therapy groups and in addition to the group protocol, included a once-monthly visit by trained therapy dogs and their handlers who interacted freely with the group before the group started and during the first 15 minutes of the group time (Dietz et al., 2012, p. 671). Treatment condition three was called the *Dogs with Stories* therapy groups and followed the same format at *Dogs No Stories* therapy groups, however, the time spent with the therapy dogs was structured around stories from the dog's perspective and questions that coincided with the group topic and related to the children's experiences of sexual abuse.

Research Question 2: Benefits of Integrating Therapy Animals into Trauma Treatment

RQ2 had two parts: the first examined the effectiveness of the integrated AAT programs for youth who are in treatment for sexual abuse-related trauma symptoms and the second collected information related to additional benefits associated solely with the therapy animal component. All 12 articles in this review were included for part one to gather information around attrition rates, outcomes, and reductions in trauma-related symptoms.

Rates of Attrition

As shown in Table 3, of the nine articles that reported rates of attrition, six articles reported a 0.00% attrition rate (*n* = 6, 66.67%; Dietz et al., 2012; Kemp et al., 2014; Reeson et al., 2022; Signal et al., 2013; Silverstone et al., 2016; Taylor et al., 2016), two articles reported attrition rates of 10.00% and 13.00% (*n* = 1, 11.11%; Reeson et al., 2020 and Signal et al., 2017 respectively), and Naste et al. (2018) reported an attrition rate of 33.33% as one participant discontinued EFT due to transportation barriers (*n* = 1, 11.11%).

Table 3

Attrition Rates Reported by Nine Articles

Attrition Rates Reported in Percentages	*n*	%
0.00%	6	66.67
10.00%	1	11.11
13.00%	1	11.11
33.00%	1	11.11

Reduction in Trauma-Related Symptoms

As shown in Table 4, the following sections detail the reduction in trauma-related symptoms, which were clustered into themes detected across the literature and constructed by the author:

- Cluster 1: PTSD-DSM-5 Criteria-Related Symptoms
- Cluster 2: Internalizing Symptoms

- Cluster 3: Externalizing Symptoms
- Cluster 4: Interpersonal Functioning

Cluster 1: PTSD-DSM-5 Criteria-Related Symptoms. All seven of the articles that specifically assessed PTSD symptoms reported statistically significant improvements in trauma-related symptoms (Dietz et al., 2012; Kemp et al., 2014; Naste et al., 2018; Reeson et al., 2020; 2022; Signal et al., 2017; Silverstone et al., 2016). Notably, Dietz et al. (2012), Kemp et al. (2014), Naste et al. (2018), and Signal et al. (2017) all reported both an overall reduction in PTSD-related symptoms, as well as statistically significant reductions in the PTSD subscale that assesses dissociation symptoms (n = 4, 33.33%), and Signal et al. (2017) highlighted a statistically significant reduction in avoidance symptoms.

Cluster 2: Internalizing Symptoms. Article outcomes related to depression/suicidal ideation, anxiety, self-esteem/empowerment, and anger were grouped in the following cluster. Seven articles (n = 7, 58.33%) reported a statistically significant reduction in depression symptoms (Dietz et al., 2012; Kemp et al., 2014; Naste et al., 2018; Parish-Plass, 2008; Reeson et al., 2020, 2022; Signal et al., 2013; Silverstone et al., 2016). Notably, Reeson et al. (2020) detailed a reduction of 42% on mean depression scores and a 47.5% decrease in suicidal ideation/behavior scores. Seven articles (n = 7, 58.33%) indicated clinically significant reductions in anxiety (Dietz et al., 2012; Eggiman, 2006; Kemp et al., 2014; Naste et al., 2018; Reeson et al., 2020, 2022; Silverstone et al., 2016). Positive changes in self-esteem (Reeson et al., 2020, 2022; Silverstone et al., 2016) were seen in the outcomes of three studies (n = 3, 25.00%) and increases in a sense of empowerment (Naste et al., 2018) were seen in one study (n = 1, 8.33%). Finally, Dietz et al. (2012) noted a statistically significant reduction in anger (n = 1, 8.33%).

Cluster 3: Externalizing Symptoms. Article results and outcomes related to behavior towards animals, sexual concerns/inappropriate sexual behavior, oppositional behavior/impulsivity/behavioral dysregulation, and general behavior were included in this cluster. Reductions in sexual concerns and inappropriate sexual behavior were reported in four articles (*n* = 4, 33.33%; Dietz et al., 2012; Eggiman, 2006; Kemp et al., 2014; Taylor et al., 2016), with two articles (*n* = 2, 16.67%) specifically detailing both reductions in frequency and/or elimination of behavior indicative of cruelty towards animals and inappropriate sexual touching of animals (Eggiman, 2006; Taylor et al., 2016). Three articles (*n* = 3, 25.00%) reported decreases in oppositional behavior, impulsivity, and/or behavioral dysregulation (Eggiman, 2006; Kemp et al., 2014; Naste et al., 2018) and two articles (*n* = 2, 16.67%) reported positive changes in participants' general behavior (Eggiman, 2006; Signal et al., 2017).

Cluster 4: Interpersonal Functioning. While interpersonal functioning can be understood as externalizing as well as elements (e.g. isolation) as internalizing symptoms, the author chose to separate cluster 4 and organize sections into emotional expression/communication, school-related functioning, relationships, and quality of life for clarity. Five articles reviewed (*n* = 5; 41.67%) noted clinically significant improvements in participants' relational functioning/skills (Naste et al., 2018; Reeson et al., 2020, 2022; Signal et al., 2017; Silverstone et al., 2016), while clinically meaningful improvements in participants' emotional expression and communication were described in four studies (*n* = 4, 33.33%; Naste et al., 2018; Parish-Plass, 2008; Signal et al., 2017; Taylor et al., 2016). Participants demonstrated marked improvements in their behavior and functioning in the context of school in three studies (*n* = 3, 25%; Eggiman, 2006; Naste et al., 2018; Signal et al., 2017). Finally, two studies (*n* = 2,

16.67%) reported statistically significant improvements in outcomes that measure the participants' quality of life (Reeson et al., 2020, 2022).

Table 4

Participants' Reductions in Trauma-Related Symptoms

Categories of Trauma-Related Symptoms		*n*	%
Cluster 1: PTSD-DSM-5 Criteria-Related Symptoms	PTSD-general	7	58.33
	Dissociation	4	33.33
	Avoidance	1	8.33
Cluster 2: Internalizing Symptoms	Depression	7	58.33
	Anxiety	7	58.33
	Self-Esteem	3	25.00
	Empowerment	1	8.33
	Anger	1	8.33
Cluster 3: Externalizing Symptoms	Cruelty/Sexual Touching of Animals	2	16.67
	Sexual Concerns/Inappropriate Sexual Behavior	4	33.33
	Oppositional/Impulsive Behavior/Behavioral Dysregulation	3	25.00
	General Behavior	2	16.67
Cluster 4: Interpersonal Functioning	Relational Functioning/Skills	5	41.67
	Emotional Expression/Communication	4	33.33
	Behavior/Functioning at School	3	25.00
	Quality of Life	2	16.67

Additional Benefits Associated Primarily with Therapy Animals

Part two of RQ2 explored and gathered data related to additional benefits associated solely with the therapy animal component. This section includes nine articles ($n = 9$, 75.00%)

that reported therapeutic benefits directly attributed to the presence of the therapy animal (Dietz et al., 2012; Eggiman, 2006; Kemp et al., 2014; Naste et al., 2018; Parish-Plass, 2008; Reichert, 1998; Signal et al., 2013, 2017; Taylor et al., 2016). Of the nine articles included, three articles (n = 3, 33.33%) separated the animal component from the treatment modality in order to isolate the impact of the AAT (Dietz et al., 2012; Kemp et al., 2014; Signal et al., 2013) and two articles (n = 2, 22.22%) established a baseline of a no-treatment time period prior to commencing AAT (Signal et al., 2017; Taylor et al., 2016).

The following sections detail the benefits, in and out of therapy, associated with the therapy animal. As shown in Table 5, the benefits are grouped into three categories which capture the themes detected across the literature as constructed by the author: Benefits in Treatment Process, Positive Changes both in and out of Therapy, and Post-Treatment Outcomes.

Benefits in the Treatment Process. Themes observed in the articles reviewed that are indicative of ways AAT benefits the treatment process include: promotion of safety/building therapeutic alliance, engagement/adherence to treatment, disclosure through the animal, general positive impact, and insight. Increased engagement/adherence to treatment associated with the therapy animal's presence was reported in five articles (n = 5, 55.56%; Eggiman, 2006; Dietz et al., 2012; Naste et al., 2018; Signal et al., 2017; Taylor et al., 2016). Four articles (n = 4, 44.44%) specified that the presence of the therapy animal created an increased sense of safety and helped to build the therapeutic alliance for participants and discussed how the therapy animal facilitated the participants' disclosure of their trauma stories (Eggiman, 2006; Naste et al., 2018; Reichert, 1998; Parish-Plass, 2008). Naste et al. (2018) discussed how participants were able to increase their insight through interactions with the therapy animal (n = 1, 11.11%). Finally, Dietz

et al. (2012) reported on how a general positive change was seen in a group of participants after a therapy canine was added into their group therapy (*n* = 1, 11.11%).

Positive Changes Both in and out of Therapy. Positive outcomes attributed to the AAT component that were observed both in and out of the therapy context include: positive behavior towards animals, emotional expression/awareness, increased kindness/empathy towards animals and extended to human interactions, emotional/bodily regulation, and the formation of emotional bond/secure attachment to animal and extended to therapist and caregivers. All articles reviewed (*n* = 9, 100%) reported positive behavioral improvements in participants towards animals both in relation to the therapy animal and animals external to the therapy context (Dietz et al., 2012; Eggiman, 2006; Kemp et al., 2014; Naste et al., 2018; Parish-Plass, 2008; Reichert, 1998; Signal et al., 2013, 2017; Taylor et al., 2016). Increased awareness and expression of emotions was detailed in five articles (*n* = 5, 55.56%; Eggiman, 2006; Naste et al., 2018; Parish-Plass, 2008; Reichert, 1998; Signal et al., 2017). Eggiman (2006), Naste et al. (2018), Signal et al. (2017), and Taylor et al. (2016) reported an increase in kindness and empathy towards the therapy animal which was then extended to both animals outside of the treatment setting (e.g. participants' pets) and human interactions (*n* = 4, 44.44%). Eggiman (2006), Naste et al. (2018), Parish-Plass (2008), and Reichert (1998) noted a formation of an emotional bond/secure attachment to the therapy animal which extended to therapist and eventually to the caregivers (*n* = 4, 44.44%). Lastly, three articles (n=3; 33.33%) reported a clinically meaningful increase in participants' ability to emotionally and somatically regulate in the presence of a therapy animal, which also extended to outside of therapy (Eggiman, 2006; Naste et al., 2018; Reichert, 1998).

Post-Treatment Outcomes. Themes observed in the articles reviewed indicated that the AAT component impacted post-treatment outcomes through augmenting symptom reduction.

Three articles (n = 3, 33.33%) separated the animal component from the treatment modality in order to isolate the impact of the AAT (Dietz et al., 2012; Kemp et al., 2014; Signal et al., 2013).

Dietz et al. (2012) reported a statistically significant reduction in PTSD/trauma-related symptoms, anxiety, depression, and dissociation for participants who completed the group treatment with therapy dogs, both independent and in comparison, to scores from the group treatment without therapy dogs. Further, the group treatment that combined the therapy dogs and incorporated stories for structure was most effective for participants and demonstrated the greatest decrease in PTSD subscale symptoms, dissociation, anger, anxiety, depression, and sexual concerns. Interestingly, the therapy dogs with stories group was the only that reported significant reductions in sexual concerns and anger (Dietz et al., 2012). Further, the group with therapy dogs and stories demonstrated statistically significant differences in scores for each of the above measures in comparison to the group with therapy dogs and no stories (Dietz et al., 2012).

Kemp et al. (2014) reported decreases in post-traumatic stress, dissociation, depression, anxiety, internalized behavior, externalized behavior, and sexual concerns resulting in clinically meaningful positive changes in both child and adolescent groups who completed EFT. These statistically significant improvements were observed both within the groups in comparison to participants' score before commencing the EFT program and when compared to six weeks of solely therapy (Kemp et al., 2014). Finally, Signal et al. (2013) conveyed statistically significant decreases in depressive symptoms upon completion of the EFT program, both independently and when compared to participants' reduction in depressive symptoms after 6 weeks of solely counseling sessions.

Table 5

Benefits Directly Associated with Therapy Animals as Reported by Nine Articles

Categories of Benefits		*n*	%
Benefits in Treatment Process	Engagement/Adherence to Treatment	5	55.56
	Safety/Therapeutic Alliance	4	44.44
	Facilitated Disclosure	4	44.44
	Insight	1	11.11
	General Positive Change	1	11.11
Positive Changes both in and out of Therapy	Behavior Towards Animals	9	100.00
	Emotional Expression/Awareness	5	55.56
	Kindness/Empathy	4	44.44
	Emotional Bond/Secure Attachment	4	44.44
	Emotional/Somatic Regulation	3	33.33
Post-Treatment Outcomes	Depression	3	33.33
	PTSD/Trauma-related Symptoms	2	22.22
	Sexual Concerns	2	22.22
	Anxiety	2	22.22
	Dissociation	2	22.22
	Externalized Behavior	1	11.11
	Internalized Behavior	1	11.11
	Anger	1	11.11

Research Question 3: When the Integration of Therapy Animals are Most and Least Beneficial

RQ3 gathered and organized data from the 12 articles reviewed around when the use of a therapy animal is most and least beneficial. This section is organized into the following categories which emerged as themes within the articles reviewed and were determined by the author: characteristics of the clinical population and considerations for integrating a therapy animal.

Characteristics of the Clinical Population: Age and Developmental Level

Seven articles (*n* = 7, 58.33%) conducted studies which integrated AAT for children between the ages of 5 to 12 (Eggiman, 2006; Naste et al., 2018; Parish-Plass, 2008; Reichert, 1998; Signal et al., 2017; Silverstone et al., 2016; Taylor et al., 2016). Four of these studies included children as well as adolescent groups between the ages of 13 to 17 (Dietz et al., 2012; Kemp et al., 2014; Signal et al., 2013; Reeson et al., 2022). Reeson et al. (2020) only included adolescent groups in their study (*n* = 1, 8.33%).

Three studies (*n* = 3, 25%) compared differences in treatment outcomes between the child and adolescent age groups (Kemp et al., 2014; Signal et al., 2013; Reeson et al., 2022). Kemp et al. (2014) noted that the adolescent and child treatment groups both benefitted from the EFT program, reporting statistically significant reductions in depression, anxiety, and trauma-related symptoms (Kemp et al., 2014). Signal et al. (2013) described how both the child and adolescent treatment groups experienced statistically significant reductions in depression after the EFT program. While both child and adolescent treatment groups reported large effect sizes, the child group reported the largest average effect size (Signal et al., 2013). Reeson et al. (2022) recorded improvements for both the child and adolescent groups for PTSD-symptoms, depression, anxiety, quality of life, and self-esteem after the initial round of treatment.

Characteristics of the Clinical Population: Gender

Eggiman (2006), Naste et al. (2018), Parish-Plass (2008), Reeson et al. (2020), and Reichert (1998) only had female participants (*n* = 5, 41.67%). Dietz et al. (2012) and Silverstone et al. (2016) included both male and female participants but did not analyze gender differences. Three articles (*n* = 3; 25%), Kemp et al. (2014) and Signal et al. (2013, 2017), reported no gender differences between male and female participants. Reeson et al. (2022) reported no

gender differences in treatment efficacy among male, female, and non-binary participants (*n* = 1, 8.33%). In contrast, Taylor et al. (2016) study described gender differences, as female participants, when compared to male participants, demonstrated a greater reduction in behavior classified as cruelty towards animals (*n* = 1, 8.33%).

Characteristics of the Clinical Population: Cultural Background

Six articles (*n* = 6; 50%) reported equivalent efficacy of treatment for participants who identified as non-indigenous and indigenous (Dietz et al., 2012; Kemp et al., 2014; Signal et al., 2013, 2017; Reeson et al., 2020, 2022). Naste et al. (2018) reported efficacy regardless of participants' ethnicity/cultural background (African-American, Latina, Caucasian); similarly, Dietz et al. (2012) described efficacy across their participants' ethnicities/cultural backgrounds (43% Hispanic, 37% Caucasian, 17% African American, 6% Native American, 3% Other).

Characteristics of the Clinical Population: Clinical Presentation, Symptoms, and Contraindications

The studies reviewed appeared to improve a wide range of trauma-symptoms resulting from sexual abuse including: PTSD symptoms, internalizing and externalizing symptoms, depression, suicidal ideation, low self-esteem, anger, anxiety, bodily/emotional dysregulation, difficulties with emotional expression, oppositional/impulsive behavior, inappropriate or cruel behavior towards animals, sexual concerns, and interpersonal relationship struggles (Dietz et al., 2012; Eggiman, 2006; Kemp et al., 2014; Naste et al., 2018; Parish-Plass, 2008; Reeson et al., 2020, 2022; Reichert, 1998; Signal et al., 2013, 2017; Silverstone et al., 2016; Taylor et al., 2016). In consideration of symptoms that may be contraindicated for the use of AAT, two articles cautioned against AAT for children who have a history of aggression or cruelty towards animals (*n* = 2, 16.67%; Reichert, 1998; Signal et al., 2017;) or if the child has a fear of the

animal (*n* = 1, 8.33%; Parish-Plass, 2008). In contrast, Eggiman (2006), Parish-Plass (2008), and Taylor et al. (2016) cite improvements in participants who had a history of cruelty towards animals and/or inappropriate sexual behavior towards animals (*n* = 3, 25%).

Out of the five articles that gathered information regarding the participants' sexual abuse history, all reported a higher prevalence of participants with a history of multiple or chronic sexual abuse versus a single incident. Three studies reported all of their participants as having histories of multiple incidences of sexual abuse (Eggiman, 2006; Naste et al. 2018; Parish-Plass, 2008), while Reeson et al. (2020) reported that 89% of participants had multiple incidences of sexual abuse. Lastly, Dietz et al. (2012) reported no differences in outcomes for participants who had incidences of sexual abuse occurring more than five times versus those who had incidences of sexual abuse occurring once or twice.

Considerations for Integrating a Therapy Animal

Nine articles included the mention of the need for the therapy animal to be good natured, properly trained, and supported by either a trained handler alongside the clinician, or a clinician who is trained in AAT (*n* = 9, 75%; Dietz et al., 2012; Eggiman, 2006; Kemp et al., 2014; Naste et al., 2018; Parish-Plass, 2008; Reichert, 1998; Signal et al., 2013, 2017; Taylor et al., 2016). Signal et al. (2017) and Taylor et al. (2016) were mindful about the time the therapy canines spent with the participants, and limited the contact to the first three weeks of therapy to prevent overuse. Finally, eight articles (*n* = 8, 66.67%) emphasized the ethics of ensuring the well-being of the therapy animal by establishing clear rules and boundaries when the child interacts with the therapy animal in order to protect the animal and the child from harm (Eggiman, 2006; Kemp et al., 2014; Naste et al., 2014; Parish-Plass, 2008; Reichert, 1998; Signal et al., 2013, 2017; Taylor et al., 2016).

Chapter IV: Discussion

Overview of Study and Findings

The main objective of this integrative systematic review was to explore and gather information regarding benefits associated with the integration of therapy animals into trauma-focused treatment for youth survivors of sexual abuse. Youth that have been sexually abused tend to experience more severe symptoms in comparison to youth that have been abused in other ways (Lewis et al., 2016). Furthermore, CSA can result in a wide-range of heterogenous symptoms, that, if left unresolved, can impact an individual throughout their childhood as well as over their lifetime and impair functioning in major areas (Kendall-Tackett et al., 1993; Martin et al., 2004). While there are trauma-focused treatments available (e.g. TF-CBT), there is a lack of consensus on the most effective, evidence-based treatments for youth with CSA as the wide-range of symptoms, small to medium effect sizes, lack of application across cultures, inconsistency in outcome measures, and lack of long-term follow-up have resulted in the WHO calling for more research and preliminarily providing low-quality conditional support for TF-CBT (Narang et al., 2019; Tichelaar, et al., 2020; Trask et al., 2011; WHO, 2017). This information is compounded with studies showing barriers to treatment, such as younger children benefiting less from cognitive-behavioral treatment for trauma than older children (Trask et al., 2011), certain symptoms resulting from CSA creating impediments to treatment (e.g. avoidance), or some symptoms being more resistant to treatment (e.g. inappropriate sexual behavior, depression, behavioral disturbances; MacDonald et al., 2006), and that treatments for CSA tend to have high attrition rates and early dropout (Wamser-Nanney & Steinzor, 2017). Given the heterogenous presentation of symptoms, lack of consensus in effective treatment modality, and barriers to treatment success, this systematic review fulfills an important role in integrating

available research and calling attention to the benefits associated with AAT for youth who are in treatment for CSA.

This review summarized the ways that therapy animals have been integrated into trauma treatment for youth survivors of CSA, identified the outcomes of AAT trauma therapy, and specifically, reported on the benefits associated with the therapy animal. Finally, this review collected information around when a therapy animal may be most helpful and any contraindications to the use of AAT with youth who are survivors of CSA. Thus, this chapter focuses on exploring the findings gathered from the articles reviewed as it relates to each of the three research questions, as well as elaborating on the implications of this research for clinicians, therapy animal trainers/handlers, officials of governing bodies/stakeholders/policymakers, parents and caregivers, and survivors.

Ways Therapy Animals are Integrated into Trauma Treatment

While the 12 articles included in this systematic review included a wide range of treatment modalities, environmental settings, and types of therapy animals, the majority of studies included cognitive behavioral interventions (75%), were located at a community-based/social-services treatment setting (66.67%), and integrated a therapy canine (41.67%). Therapy animals were primarily integrated in structured manners, in which the contact with the therapy animal followed a sequence or program to meet participants' goals (66.67%), and semi-structured ways (16.67%), in which the therapy animal helped to meet participants' treatment goals and facilitate specific aspects of the therapy process but the participant more freely interacted with the therapy animal. Parish-Plass (2008) detailed a more unstructured approach in which children freely interacted with a wide range of therapy animals during the sessions without a consistent pattern of utilization towards therapeutic goals. While one article (Dietz et al., 2012)

included unstructured and semi-structured ways of integrating the therapy animal into treatment by comparing outcomes from groups that had therapy canines present for free interaction and groups that had therapy canines present and included stories which linked the canines to the therapeutic goals and topics.

Outcomes from Articles Reviewed and Benefits Associated with the Therapy Animal

Research Question 2 consisted of two sections. The first gathered data around general outcomes and effectiveness of the articles' AAT treatments for youth with trauma-related symptoms due to CSA and the second collected information on treatment benefits that were solely associated with the therapy animal.

Rates of Attrition

Nine articles included in this review reported attrition rates. Out of the nine, a majority of 66.67% reported 0.00% attrition, meaning that all participants completed the course of treatment. Other studies' attrition rates included 10.00%, 13.00%, and 33.33%. Importantly, Naste et al. (2018) explained how one of the three participants was unable to complete their sessions of EFT due to issues with transportation as explanation for their 33.33% attrition rate. These outcomes, when paired with the increased level of engagement due to the presence of the therapy animal (see Benefits Associated with the Therapy Animal section below), support the conclusion that the integration of AAT reduces the high attrition rates common in treatment for youth survivors of CSA (Wamser-Nanney & Steinzor, 2017).

Reduction in Trauma-Related Symptoms

Prominently, all 12 articles reviewed for RQ2 reported significant improvements in trauma-related symptoms including PTSD symptoms, internalizing symptoms (depression/suicidal ideation, anxiety, self-esteem, empowerment, and anger), externalizing

symptoms (cruelty/sexual behavior, oppositional/impulsive behavior/behavioral dysregulation, and general behavior), and interpersonal functioning (relational functioning/skills, emotional expression/communication, behavior/functioning in school, quality of life). Among these findings, notably all seven articles that assessed specifically for PTSD symptoms reported statistically significant decreases. Signal et al. (2017) highlighted the importance of their finding a reduction in avoidance symptoms as trauma-related avoidance tends to be treatment resistant (Murphy et al., 2014).

Further, 58% of articles reported improvements in depressive symptoms, not only is this finding important given that depressive symptoms tend to resist treatment for youth with CSA (MacDonald et al., 2006), but also because all articles that specifically measured depressive symptoms reported reductions when therapy was paired with AAT. Remarkably, Signal et al. (2013) reported that both the child and adolescent groups experienced non-significant reductions in depressive scores from completing counseling with CBT interventions, but both groups had reductions in depression after completing a 9 to 10-week EFT program. Importantly, these findings were not only statistically significant, but also clinically meaningful as the child groups' scores fell from above the clinically significant cutoff for depression after counseling to well below and adolescent groups' scores reduced from moderate depression after counseling to mild (Signal et al., 2013). Notably, Reeson et al. (2020) intensive multi-modal treatment reported a 42% reduction in depressive symptoms and a 47% reduction in suicidal ideation/behavior after only the first (2 to 4 weeks) round of treatment, which focused primarily on adjunctive therapy services such as AAT, art therapy, music therapy, yoga and meditative therapy, and drumming circles. This remarkable improvement is important not only given that depression can be treatment resistant for youth in treatment for CSA and the high-risk nature of suicidal

ideation/behavior, but it also highlights the impact of creative and adjunctive treatments such as AAT.

Out of the articles included in this review, 33.33% reported reductions in sexual concerns and inappropriate sexual behavior/changes in behavior. Additionally, 25% of articles found an improvement in oppositional behavior, impulsivity, and/or behavioral dysregulation. Naste et al. (2018) discussed how one participant struggled with inattention and hyperactivity as a result of her trauma. While her Global Executive Functioning score was in the clinically significant range at the start of the EFT-CT program, it dropped to the subclinical range by the completion of the program. These outcomes were echoed in her improved functioning at school, providing clinical meaning to this reduction (Naste et al., 2018). In relation, studies have found that youth with a history of CSA tend to be misdiagnosed with attention-deficit/hyperactivity disorder (ADHD) (Cohen et al., 2010; Lucio & Nelson, 2016; Weinstein et al., 2000). Thus, treatments which can improve inattention, behavior dysregulation, and functioning in school are important to avoid misdiagnosis and help the child to not fall behind academically. Indeed, this review found that 25% of articles reported positive changes in youths' functioning at school. The above findings are important as behavior-related symptoms tend to be less responsive to treatment (Lanktree & Briere, 1995; MacDonald et al., 2006).

As CSA is an interpersonal trauma, the betrayal of trust and loss of safety often extends past the relationship with the perpetrator, and can present as difficulty forming and maintaining relationships with peers (Kendall-Tackett et al., 1993; Maniglio, 2009; Milot et al., 2010; Putnam, 2003). Especially during teenage years, the formation of strong relationships with peers is a crucial part of healthy adolescent development and contributes to psychological well-being

long-term (Delgado et al., 2022). Thus, it is encouraging that 41.67% of articles reviewed cited improvements in relational functioning and skills for participants.

Benefits Associated with the Therapy Animal

The second part of RQ2 included nine articles (75%) reporting therapeutic benefits directly connected to the therapy animal. All nine articles indicated that the addition of a therapy animal resulted in positive changes in participants. This section was broken into three categories: benefits in treatment process, positive changes both in and out of therapy, and post-treatment outcomes.

Benefits in Treatment Process

Themes detected in the articles related to ways the therapy animal provides support in therapy sessions that positively impact and facilitate the treatment process. The findings include: increased engagement/adherence to the treatment, promotion of safety/therapeutic alliance, disclosure facilitated through the animal, general positive impact, and increased insight.

Notably, 55.56% of articles discussed participants' increased engagement and adherence to treatment in the presence of the therapy animal. Eggiman (2006) described how her client was having difficulty participating in therapy as she was not following the rules in the therapy room (respecting personal space, etc.), constantly moving her body, talking disjointedly and constantly, or holding attention, all of which improved once the therapy canine joined sessions. In fact, her desire to meet the therapy dog provided motivation to learn the rules of therapy space and the boundaries needed to interact with the therapy dog, after which her body calmed and she was able to engage in sessions more effectively (Eggiman, 2006). Further, increased engagement/adherence to treatment may relate to participating more in the sessions and having higher rates of attendance which result in superior treatment effectiveness (Theimer et al., 2020).

Potentially, these factors help to account for moderate to strong effect sizes and augmentation of treatment outcomes in comparison to therapy alone (Dietz et al., 2012; Kemp et al., 2014; Signal et al., 2013).

Importantly, the therapy animal was found to promote a sense of safety and assist in building the therapeutic alliance with the therapist in 44.44% of articles. This finding, paired with higher levels of engagement, may help to explain the lower levels of attrition captured in these studies, as discontinuation of treatment typically occurs in the first stages of treatment (Capella et al., 2022), which tend to focus on building rapport, forming a therapeutic alliance, and establishing safety (Cohen & Mannarino, 2008; Naste et al., 2018; Reeson et al., 2020, 2022; Silverstone et al., 2016). Capella et al. (2022) gathered information around treatment from the perspectives of youth undergoing trauma-treatment for CSA. The authors found that the first stage of treatment is the most difficult and scary, and poses the most barriers to attending and engaging in therapy (Capella et al., 2022). It is possible the therapy animal, through creating safety and laying the foundation for a therapeutic alliance, allows for the youth to remain in therapy past the beginning stages and be more engaged in the primary form of therapy treatment. The hope is that with early, effective interventions youths can avoid some of the long-term symptoms, suffering, and impairment in functioning seen in 47-56% of adults with a history of CSA (Cutajar et al., 2010; Martin et al., 2004).

Similarly, 44.44% of articles cited ways the therapy animal facilitated and supported participants' disclosure in session. Stories told from the therapy animal's perspective helped to encourage disclosure of the participants' trauma narrative. These stories illustrated how after the therapy animal shared their story and expressed their feelings, the child felt safer. Not only was the therapy animal's disclosure through the story and calming presence helpful, but articles

explained how the children would often tell their trauma directly to the animal, or while holding the animal's paw or petting the animal's back (Eggiman, 2006; Naste et al., 2018; Reichert, 1998; Parish-Plass, 2008). It is possible that the presence of the therapy animal helped to reduce some of the avoidance associated with trauma reminders for participants allowing for the formulation of the trauma narrative to more comfortably occur.

Positive Changes Both in and out of Therapy

Themes detected in the articles indicated a positive change related to the therapy animal that was helpful in the therapy context and carried over as benefits seen outside of therapy. These themes include: behavior towards animals, emotional expression/awareness, kindness and empathy, emotional/bodily regulation, and the formation of emotional bond/secure attachment.

All nine of the articles reviewed for RQ2, part 2, indicated positive changes in the way the participants behaved around and treated animals. In fact, Eggiman (2006) spoke of how a participant, who had a history of abusing animals, learned gentle ways to interact with the therapy dog, which was generalized to interactions with animals outside of session. An example provided was when the participant was introduced to a friend's pet dog, she directed others on where to softly pet the dog, which was exactly how she treated the therapy dog (Eggiman, 2006).

Further, 55.56% of articles discussed how the participants increased their awareness of their emotions and their ability to express their emotions. This process was assisted by the therapy animals: as participants learned to recognize emotions in the therapy animals and themselves, they became more comfortable identifying and expressing their feelings both to therapists and caregivers (Eggiman, 2006; Naste et al., 2018; Parish-Plass, 2008; Reichert, 1998; Signal et al., 2017). Signal et al. (2017) reported on caregivers' feedback of how at the

completion of the AAT program their children were better able to express and communicate their emotions within the family.

Additionally, 44.44% of articles revealed that participants had an increase in kindness and empathy. One finding seen across these studies is how the therapist modeled empathy and expressed kindness towards the therapy animal and the participant. The participant observed these interactions and by the end of treatment was demonstrating empathy towards the therapy animal which also extended to interactions with animals outside of treatment and to human interactions with the therapist and with siblings/peers/caregivers. It is possible that seeing the therapist express kindness and empathy to the therapy animal helped the participant to reinforce the trustworthiness of the therapist as they witnessed consistency not just in how the therapist approached them but in other relationships too (Parish-Plass, 2008; Reichert, 1998).

Along the same reasoning, it is noteworthy that 44.44% of articles described how the participant formed a strong bond or secure attachment first to the therapy animal, which then extended to therapist and was echoed in a strengthening of relationships with their caregivers. It makes sense that youth who have had their trust betrayed by other humans might see a therapy animal as less threatening than a new therapist. As the therapy animals are unable to verbally communicate, they offer their presence to children in gentle and consistent manners that signal safety and build attachment. Indeed, as seen in Eggiman (2006), Naste et al. (2018), and Parish-Plass (2008), when participants' attachment had been disrupted due to a sexual abuse history of offending-caregivers, it created difficulties in attaching to new caregivers. Naste et al. (2018) discusses how one of their three case studies, an 11-year-old female, struggled with forming trust and bonds with her adoptive parents and relationships with peers after a history of severe sexual abuse by previous caretakers. However, she was able to form a strong attachment to the horse,

and her therapist worked with her to extend the safety of this bond and interpersonal skills to her adoptive parents and relationships (Naste et al., 2018). As illustrated in this case study, through the safety of the bond formed with the therapy animal first and then the therapist, the therapist was able to assist participants in connecting with their new caregivers and appreciating the safety they offered. Further, the formation of these caregiver attachments is essential as secure caregiver attachments in childhood are necessary to form strong peer relationships (Delgado et al., 2022; Godbout et al., 2014). These findings connect back to the difficulties in forming and maintaining interpersonal connections seen in youth with CSA (Kendall-Tackett et al., 1993; Maniglio, 2009; Milot et al., 2010; Putnam, 2003), and the importance of the formation of peer relationships in adolescence for adaptive emotional health (Delgado et al., 2022). Thus, bonding with the therapy animal could be the first step in a sequence of crucial bonds essential to long-term healthy social and emotional functioning.

Finally, 33.33% of articles reported how participants demonstrated improved emotional regulation and bodily/somatic regulation when in the presence of the therapy animal, which then extended to contexts outside of therapy. Eggiman's (2006) case study described how a 10-year-old female had hyperactivity, inattention, inability to relax/calm her body, and anxiety, all of which made it difficult to fall asleep. She showed vast improvements only after the therapy dog was added into her treatment, demonstrating improved emotional regulation, attention, and a calmer body in session, at school, and at home. Her foster mother reported how she was less anxious at night when she imagined the calm she felt with therapy dog by her side, and remarkably, her sleep improved (Eggiman, 2006). Naste et al. (2018) cited the regulating impact of the therapy horses in the case studies, as the EFT-CT program specifically targets bodily dysregulation. The participants learned that calm movements allow the horse to relax, and co-

regulation was achieved through syncing their bodies to the horse's natural rhythms and learning ways to downregulate their own internal emotional states. With the therapist, the participants practiced accessing these calmer states while off the horse and when in contexts external to therapy. This practice coincided with a heightened level of bodily awareness and a reduction in dissociation-related symptoms for the participants (Naste et al., 2018). Further, these findings correspond with authors who emphasized the importance of first establishing bodily and emotional regulation in order to later engage in the cognitive-dominant aspects of therapy, such as the expression of their trauma narrative (Naste et al., 2018; Reeson et al., 2020, 2022; Silverstone et al., 2016).

Post-Treatment Outcomes

Throughout the reviewed articles, themes indicate that the addition of a therapy animal positively impacts participants and has the potential to augment treatment outcomes. In fact, 33% of the nine articles that reported benefits related to therapy animals separated the therapy animal from the treatment modality and assessed symptom changes before adding in the therapy animal to determine the impact of the therapy animal component. Statistically significant reductions in PTSD/trauma-related symptoms, anger, depression, anxiety, dissociation, problematic behavior, and sexual concerns were discovered.

Dietz et al. (2012) study, in comparison of outcomes of three treatment groups (group treatment with no dogs, group treatment with dogs, and group treatment with dogs and stories), found that the group treatment with dogs and stories was the most effective for PTSD symptoms, dissociation, anxiety, and depression, and the only group that reduced anger and sexual concerns. The group treatment with dogs with no stories was also more effective than the group with no dogs for PTSD/trauma-related symptoms, anxiety, depression, and dissociation. These findings

demonstrate how the mere inclusion of therapy dogs augmented treatment outcomes. However, the group that provided structure through stories which related the therapy dogs' presence to the topics of the group had the most augmented treatment outcomes, as the stories paired with the therapy dogs directed the children's attention to the most important aspects of treatment. It follows that when integrating therapy animals, providing structure and connecting the animal to the treatment goals may enhance treatment outcomes. Further, thoughtful utilization of the therapy animal may direct the child to engage with the most crucial aspects of treatment.

Kemp et al. (2014) study included child and adolescent participant groups. They compared participants' sexual trauma-related symptoms before and after 6 weeks of in-clinic counseling as well as after completing approximately 10 weeks of EFT. The child group had non-significant improvements after 6 weeks of counseling but had statistically significant improvements in post-traumatic stress, dissociation, depression, anxiety, internalized behavior, externalized behavior, and sexual concerns after the EFT program, with effect sizes ranging from .58 to .88 (Kemp et al., 2014). The adolescent participants had significant reductions in post-traumatic stress, dissociation, anxiety, and sexual concerns both after the 6 weeks of counseling and after the 10 weeks of EFT. However, there were significantly greater reductions after the completion of the EFT program, with effect sizes ranging from .70 to .91, and interestingly, depressive symptoms were only reduced after the EFT program (Kemp et al., 2014). Further, as reported in Sanchez-Meca et al. (2011) meta-analysis, most counseling treatments have effect sizes that range from small to moderate for sexual concerns. Kemp et al. (2014) echoed similar findings for their participants after completing counseling only, while in contrast, the effect size for reduction in sexualized behavior for adolescents was significantly larger after completion of the EFT program (.40 vs .90). These findings suggest that animal-assisted therapies, such as

EFT, may be uniquely suited to the developmental level of younger children in a way that cognitive-based counseling is not (this is further discussed below in the section on age and developmental level). However, regardless of age, depressive symptoms were only reduced after EFT and treatment effects appear to have been augmented with the addition of EFT. This study supports EFT as providing additional benefits to cognitive counseling across age groups.

Finally, Signal et al. (2013) study conveyed that the children participant group, after six weeks of counseling alone, had depressive symptoms that still fell above the cut-off for clinical depression. However, after the EFT program, the children group's depression scores fell well below the cut-off. Similarly, the adolescent group's depressive symptoms were categorized as moderate before and after six weeks of counseling but fell into the mild depressive range at the end of the EFT program (Signal et al., 2013). Signal et al. (2013) study also demonstrated large effect sizes, greater than the small to medium effect sizes reported in Trask et al. (2011) meta-analysis for depressive symptoms.

Thus, the impact of integrating a therapy animal includes benefits that specifically enhance the treatment process and extend outside of the treatment context, targeting treatment-resistant symptoms and augmenting treatment outcomes.

Considerations in the Integration of Therapy Animals

RQ3 examined, in the 12 articles reviewed, themes around when the utilization of a therapy animal is most and least beneficial for youth survivors of CSA and has been separated into two sections: Characteristics of the Clinical Population and Considerations for Integrating a Therapy Animal.

Characteristics of the Clinical Population

Themes were detected in the articles reviewed around participants' age and developmental level, the impact of the COVID-19 pandemic, gender, cultural background, clinical presentation/symptoms, and contraindications.

Age, Developmental Level, and the Impact of COVID

The articles reviewed included youth between the ages of 5 to 17, and 25% of articles compared differences in treatment outcomes between the child and adolescent age groups (Kemp et al., 2014; Signal et al., 2013; Reeson et al., 2022). Kemp et al. (2014) reported that both the adolescent and child treatment groups benefitted from the EFT program, as both groups reported statistically significant reductions in depression, anxiety, trauma-related symptoms, and maladaptive behavior. However, a notable difference between the age groups is that the adolescent group showed significant reductions in anxiety, trauma-related symptoms, and maladaptive behavior from 6 weeks of counseling, while the child group did not show significant improvements from the same time period spent in counseling (Kemp et al., 2014). Signal et al. (2013) described how both the child and adolescent treatment groups experienced statistically significant reductions in depression after the EFT program, with no significant change in either group after 6 weeks of therapy sessions. While both the child and adolescent treatment groups reported large effect sizes, the child group reported the largest average effect size (Signal et al., 2013). Given that Trask et al. (2011) meta-analysis found that older adolescents tend to have stronger effect sizes for cognitive-focused trauma therapy, AAT may present a solution to the WHO (2017) guidelines around adapting available treatments to meet younger children's developmental levels. Informed by the impact of trauma on neurobiology, the NMT offers an approach to treatment that focuses on matching the treatment modality to the individual youth's

developmental level (Perry & Dobson, 2013). Thus, an approach that attempts to lead with cognitive approaches could be experienced as a mismatch to a child who cannot engage in high-order executive processing due to chronological age or trauma causing developmental disruption, which can present as behavioral dysregulation and inattention. Thus, treatment modalities that focus on bottom-up regulation approaches may be more developmentally suited for younger children or youth with developmental differences due to trauma (Perry & Dobson, 2013). Reeson et al. (2020, 2022) and Silverstone et al. (2016) based the sequence of their treatment on NMT theory, as the treatment started with therapy modalities that utilize "patterned rhythmic experiences" to access lower brain structures that build the ability for regulation, including AAT (Perry & Dobson, 2013, p. 257). The petting of therapy dogs, the grooming and riding of therapy horses, and co-regulation through the calming presence of the therapy animal are ways to access these bottom-up forms of regulation. Establishing regulation first may later allow the youth to benefit from crucial components of trauma-informed therapy treatments, such as the trauma narrative (Cohen et al., 2010; Kooij et al., 2022; Tichelaar et al., 2020), allowing for augmentation of treatment benefits. Importantly, in the articles reviewed, these AAT techniques were part of the early stages of therapy which resulted in clinically meaningful changes for both children and adolescents when paired with various treatment modalities. These findings call attention to the importance of furthering research in this area.

Reeson et al. (2022) recorded improvements for both the child and adolescent groups for PTSD symptoms, depression, anxiety, quality of life, and self-esteem after the initial round of treatment. Reeson et al. (2022) also examined the impact of the COVID pandemic on the children and adolescent participants who underwent treatment during this time, administering a questionnaire that asked about various areas of impact and perceived stress. They found a

notable difference in the level of impact from the COVID-19 pandemic, with more stressors negatively impacting the adolescent group than the child group. Additionally, when Reeson et al. (2022) compared outcomes from child and adolescent groups pre- and post-COVID, the child and adolescent groups who began treatment after the COVID pandemic recorded fewer positive changes in participants' symptoms in all areas. For youth who are survivors of sexual abuse and the COVID pandemic, it is important to keep in mind the negative impact of compounded traumas as reported in the ACE studies (Cronholm et al., 2015; Felitti et al., 1998). Reeson et al. (2022) findings coincide with other emerging research on the pandemic's negative impact on mental health and its association with increased trauma-related symptoms for adolescents (Millner et al., 2022; Palmer et al., 2022; Parker et al., 2021). It is evident that there is a need for further investigation into the impact of intersecting traumas for youth survivors of CSA and a higher need for trauma-informed care for adolescents in this post-pandemic context.

Gender

In regards to gender, 42% of articles reported only female participants. The majority of articles included male and female participants, with one article including male, female, and non-binary participants. Four articles (33.33%) reported no differences between male and female participants regardless of whether the participant was a child or adolescent, with Reeson et al. (2022) finding no differences among male, female, and non-binary participants. While the reasons behind this are unclear, only Reeson et al. (2022) included participants who identify as non-binary. While Reeson et al. (2022) study gives hope for treatment efficacy across the gender spectrum, more research is needed to support effective forms of treatment for youth who identify across the gender spectrum. Only Taylor et al. (2016) study on canine-assisted therapy noted a difference in outcomes between genders, as female participants had a greater reduction in cruelty

towards animals when compared to male participants. However, this finding is in contrast with Kemp et al. (2014) which found no gender differences in reductions in sexual concerns for participants after completing their EFT program. Further research is needed to determine if gender differences may have been a fluke for Taylor et al. (2016) or if there could be another variable, such as differences in the type of therapy animal (dog vs. horse), or differences within the population studied besides gender, that could account for the disparate outcomes.

Cultural Background

Among the 12 articles reviewed, 67% compared outcomes between participants' cultural backgrounds, and all reported similar efficacy regardless of cultural/ethnic background (e.g., Hispanic, Latinx, Caucasian, African American, Native American, Indigenous). Notably, six articles compared outcomes between indigenous and non-indigenous youth found AAT had equivalent outcomes for both groups. The importance of the decolonization of mental healthcare for Indigenous people is reflective of trauma-informed care, as approaches should align with cultural healing practices in the context of historical trauma and current societal factors (Nadeau, 2020; Kimber, 2022). As a clinician, it is important to not cause more traumatization through applying Westernized treatment modalities to indigenous people who have been oppressed by Western colonization both historically and currently through repeated experiences of racism and marginalization (Reeves & Stewart, 2014). Sexual abuse (among other forms of abuse) has been reported by the survivors of residential schools, which indigenous youth were forced to assimilate to and attend from the 1860s to the 1990s throughout the United States and Canada (Reeves & Stewart, 2014). Experiences of this historical trauma and the impact of colonialism have been associated with various factors (e.g., sexual abuse at residential schools, disruption in family functioning, lower SES) that contribute to higher rates of sexual trauma among

Aboriginal and Indigenous youth in the United States and Canada (Devries et al., 2009; Gameon & Skewes, 2020; Farley et al., 2005; Pearce et al., 2008). Given that Kenney & Singh (2016) found that indigenous youth are more likely than non-indigenous youth to report experiencing five or more ACES in their childhood, and non-culturally adapted cognitive therapies are less effective for indigenous youth (Westerman, 2010), effective culturally-matched and trauma-informed healing is needed to reduce the long-term impact of CSA for indigenous youth. EFT has been understood as a culturally congruent treatment for indigenous people, as horses are powerful symbols of healing and offer connection to nature (Coffin, 2019; Kimber, 2022; Reardon, 2010), and demonstrated equal efficacy for indigenous and non-indigenous youth in the articles reviewed (Dietz et al., 2012; Kemp et al., 2014; Signal et al., 2013, 2017; Reeson et al., 2020, 2022). Reeson et al. (2022) study emphasized the use of the traditional healing practices (e.g., drumming circles, AAT, smudging, story-telling) to provide cultural adaptations of TF-CBT for participants who are indigenous. However, the use of EFT or AAT should not be generalized to any group of people, as this perpetuates the trauma of colonization, which may be amplified if the clinician is not of a similar cultural background. Thus, culturally-congruent therapy involves collaboration with individual clients and their families and communities that they have identified to learn what forms of healing are most congruent to their unique intersecting identities and cultural experiences (Nadeau, 2020; Kimber, 2022).

Clinical Presentation, Symptoms, and Contraindications

The AAT studies reviewed appeared to improve a wide range of trauma symptoms resulting from sexual abuse including PTSD symptoms, internalizing and externalizing symptoms, depression, suicidal ideation, low self-esteem, anger, anxiety, bodily/emotional dysregulation, difficulties with emotional expression, oppositional/impulsive behavior,

inappropriate or cruel behavior towards animals, sexual concerns, and interpersonal relationship struggles. Given the heterogeneous nature of symptoms resulting from CSA, it is hopeful that the articles in this review reduced symptoms associated with a broad presentation of trauma-related symptoms for youth with various cultural backgrounds, genders, and ages.

All five articles that gathered information regarding the participants' sexual abuse history reported a high prevalence of participants that have had a history of multiple or chronic sexual abuse. Dietz et al. (2012) compared participants who reported one or two incidences of sexual abuse and participants who reported over five and found no differences in treatment outcomes and efficacy. Thus, these treatments appear helpful regardless of the number of incidences of abuse.

In consideration of contraindications for the use of AAT, Reichert (1998) and Signal et al. (2017) cautioned against AAT for children who have a history of aggression or cruelty towards animals and used these factors as reasons to exclude clients from AAT. In contrast, 25% of articles specifically reported improvements in participants who had a history of cruelty towards animals and/or inappropriate sexual behavior towards animals (Eggiman, 2006; Parish-Plass, 2008; Taylor et al., 2016). Parish-Plass (2008) discussed how AAT is especially beneficial in teaching children who have abused animals adaptive ways of interacting through the therapy animal. Parish-Plass (2008) theorized that when a child who has been abused then abuses an animal, it is likely the child is re-enacting their trauma in an attempt to resolve the pain, and the therapist can help the child to learn to interact with all animals in a healthy manner through highly mediated interactions that prevent harm to the therapy animal. Further, long-term protection of animals may be a positive outcome of treating a child who behaves in cruel ways

towards animals, as future animals are protected from harm as the child gains empathy for animals through AAT (Taylor et al., 2016).

Given that it is common for youth who have been abused to develop fears (Kendall-Tackett et al., 1993), if the child has a fear of animals, AAT is not recommended for the treatment (Parish-Plass, 2008). This recommendation makes sense as the therapy animal is meant to create safety, provide a calming presence, and foster connection, not increase stress, which is the likely outcome if the child has a fear of the therapy animal. While graduated exposure could reduce the youth's reactivity to the animal, as seen in TF-CBT, the child must first be relaxed and have the skills necessary to cope (Cohen & Mannarino, 2008).

Considerations When Integrating a Therapy Animal

It is of utmost importance to only integrate an animal that has been properly trained into therapy. This point is highlighted in this review as all articles included a trained therapy animal, and a majority of articles highlighted that both the animal and clinician should complete training or utilize a handler with a trained therapy animal.

From the perspective of the clinician, the safety of both the therapy animal and the client needs to be considered when incorporating therapy animals into treatment. It is important to ensure that the child has a positive and safe experience in order for the therapy animal to help bridge therapy and not act as a therapeutic barrier. Equally important, clinicians must take steps to ensure the safety and well-being of the animal. A majority of articles (~67%) specifically emphasized the need for the clinician to establish clear rules and boundaries before the client meets the therapy animal around the ways that the client can and cannot interact with the therapy animal to best prevent harm to the client or the animal. Indeed, Taylor et al. (2016) specifically warns against the "use" of therapy animals as this characterizes therapy animals as "tools,"

risking their exploitation as the needs of the human are prioritized (p.146). Instead, Taylor et al. (2016) advocates for the coexistence of animal and human needs in AAT programs, including limiting contact to prevent overuse and considerations around an animal's trauma history before deciding if the intensity of a therapy animal training program and work is appropriate for an animal's needs. For instance, a rescue dog with a history of abuse may not be a good fit for working with a population of children who have also been abused, as the dog may have a higher need for support and may not be able to offer an effective level of support to others.

Naste et al. (2018) discusses how EFT may offer unique benefits of increasing empowerment and sense of self-efficacy as participants learn to direct, set boundaries, connect, and care for an animal much larger than them. However, the integration of horses into therapy also presents unique challenges, as horses' care is expensive, requiring boarding at a barn, adequate space, and, often, a more rural environment to thrive. Also, EFT training programs for clinicians are often costly and not readily accessible (Naste et al., 2018). While these factors may impact the ability of the clinician to utilize EFT, the nature of EFT may pose additional barriers for clients, as if not conveniently located, they must have access to reliable transportation.

In contrast, canine-assisted therapy offers a lower-cost AAT alternative to equine therapy, as therapy dog trainings are usually less expensive, therapy dogs often live with the clinician, and the cost of food and care tends to be much lower than caring for a horse. Additionally, therapy dogs can be a range of sizes, allowing the clinician more flexibility if in an urban setting (Signal et al., 2017). Importantly, one must keep in mind that just like horses, dogs are fundamentally animals, and if their needs are not being met there is a potential for them to become reactive or unpredictable (Wenthold & Savage, 2007). Basic requirements, as detailed in the *Handbook on Animal Assisted Therapy*, include the animal having excellent temperament,

meaning it is calm and obedient to its handler even when exposed to novel stimuli (i.e., an excited or scared child; Fine, 2015). Additionally, the animal needs to be able to stay controlled and lay or sit for extended periods of time and be up to date on all vaccinations (Fine, 2015). It is recommended that dogs first complete the American Kennel Association's Good Citizen training and testing before becoming certified through a nationally recognized therapy pet training program such as those offered through Pet Partner (Fine, 2015). These sentiments are echoed in the articles, as all advised that therapy animals and clinicians are properly trained or that a clinician collaborates with a professional handler to ensure the safety of all involved. The clinician must be proficient at reading the therapy animal's body language, and the therapy animal's time spent assisting therapy should be limited to avoid exhaustion or overuse (Signal et al. 2017; Taylor et al., 2016).

Research Implications and Recommendations

The information gathered in this review has implications for various groups impacted by the trauma of child sexual abuse. There are a wide range of heterogenous symptoms that youth can develop after CSA, which can have immediate and severe physical, behavioral, and psychological impacts that can be resistant to cognitive forms of treatment, as well as long-term consequences. As evidenced in this review, animal-assisted therapy has been integrated into various treatment modalities in a variety of ways, supporting and augmenting treatment outcomes across age, developmental level, gender, and cultural background. AAT was found to provide additional benefits to treatment specifically associated with the presence of the therapy animal. In recognition of these findings, the next sections detail recommendations for clinicians, parents and caregivers, governing officials, and survivors.

Clinicians

As discussed above, clinicians must balance the needs of the animal and the client and prioritize the safety of both in order for the AAT to be mutually beneficial. Clinicians must complete proper training alongside the animal and establish clear rules and boundaries with the client around ways to interact before introducing the therapy animal into treatment. When selecting the type of therapy animal, clinicians should consider the cost associated with training and care for different animals, alongside the practicality and accessibility for the clinician and for their clinical population.

As this systematic review detailed various benefits from different ways therapy animals have been incorporated into a range of treatment modalities, there remains a question of what treatment modality best combines with AAT and necessitates a call for further research into this matter. However, there are guidelines for practicing trauma-informed care. As described by the Substance Abuse and Mental Health Services Administration (SAMHSA) 2014, *trauma-informed approach* or *trauma-informed care* understands the impact of trauma on individuals and systems, recognizes the diverse and wide-range of symptoms resulting from trauma, utilizes trauma assessments to properly screen for trauma-related symptoms in acknowledgement of differences due to age, gender, culture, and developmental level, "responds" using the most effective treatment modalities, and "actively resists re-traumatization" through following six key principles (SAMHSA, 2014, pp. 9-10). SAMHSA's six principles of a *trauma-informed approach* include

1. Establishing physical and psychological safety.
2. Creating trust with clients.
3. Connecting trauma survivors for peer support.

4. Reducing power differentials through collaborative care.

5. Recognizing and fostering individual's self-advocacy skills through empowerment, voice, and shared decision-making.

6. Provides anti-racist and culturally-congruent care, that recognizes the impact of historical trauma and integrates cultural healing traditions.

Furthermore, the following components were found to overlap in evidence-supported trauma treatment for children and adolescents: collaborative creation of a safe environment, psychoeducation, recollection of the trauma, exposure to the trauma, formation of a trauma narrative, and building coping skills for resiliency (Cohen et al., 2010; Kooij et al., 2022). Tichelaar et al. (2020) systematic review found that the inclusion of a trauma narrative, as well as adjunctive psychopharmacology treatment, increased the efficacy of therapy treatments for youth survivors of CSA. Also, trauma-focused treatment should directly target the trauma symptoms, include non-offending caregivers when appropriate, and build resiliency and enhance functioning to improve developmental trajectory (Cohen et al., 2010; Lucio & Nelson, 2016). Thus, the integration of AAT is best advised in combination with trauma-informed treatment and the components detailed above, including collaboration with individual clients and their families to determine the appropriateness of AAT in consideration of their cultural backgrounds and unique factors which may impact the decision (e.g., fear of animals).

Finally, as corroborated by the findings in this review, when incorporating AAT into practice, the clinician should consider how to structure the session that optimizes the integration of the therapy animal through both protecting the therapy animal's well-being and directing the child's heightened engagement with the therapy animal to the most crucial components of treatment.

Parents and Caregivers

For caregivers with children who have been sexually abused, this systematic review allows for consideration of the potential benefits and the fit of AAT as an adjunctive to trauma-focused treatment. Non-offending caregivers and parents are essential in supporting their children's treatment for CSA by believing their child, initiating and consenting to treatment, providing transportation, and encouraging therapy (Theimer et al., 2020). In order to support children in healing, parents can attend psychoeducational groups to learn a trauma-informed approach to parenting, as a child's behavior must be understood in the context of the impact of trauma (SAMHSA, 2014; van Toledo & Seymour, 2013). While a child with disrupted attachment due to trauma may increase their capacity for attachment through AAT, caregivers who provide direct support in helping their child cope with CSA build stronger attachments, which act as a protective factor against long-term interpersonal struggles (Godbout et al., 2014). Parent-coaching with a trauma therapist may assist caregivers in learning ways to respond to their child's behavior that encourages secure attachment and co-regulation through providing emotional validation and safety in a consistent manner.

While treatment that involves non-offending caregiver components, such as TF-CBT, can be helpful for children who have been sexually abused, the focus should remain on supporting the child in their healing (Theimer et al., 2020; van Toledo & Seymour, 2013). However, in consideration that disclosure of sexual abuse can be extremely distressing for caregivers, individual therapy and/or group therapy for non-offending caregivers of children who have been sexually abused is recommended to provide caregivers with community care and space to process their feelings (van Toledo & Seymour, 2013).

Caregivers must continue to advocate for their child's healing, through finding treatment that is most importantly accessible and, if needed, seeking treatment that assesses for and matches their child's developmental level, provides creative approaches to better engage their child, and collaborates to cultivate an individualized treatment that integrates their culture.

Governing Bodies and Policymakers

The information gathered in this review directs attention to the need for further support around the prevention of child sexual abuse and the need for wider dissemination of trauma-informed educational programs at the community level. With the hope of assisting teachers, healthcare workers, and caretakers to recognize the signs and symptoms of CSA, children can be protected from further harm and benefit from early intervention with trauma-informed treatment programs, not only in the United States but on a global level. One recommendation, in light of this review, is for policymakers to delegate funding towards researching the impact of AAT and supporting trauma-informed treatment programs that integrate creative adjunctive interventions, such as AAT, to potentially enhance engagement and completion of treatment programs, and better meet the developmental needs of children. Through funding these types of programs, accessibility can be increased for those who are most vulnerable and most in need of alternative approaches to treatment to augment outcomes and reduce suffering. Finally, governing bodies within the field of psychology, such as the American Psychological Association (APA) for the United States or the World Health Organization, could further these efforts to provide effective and individualized care by expanding research focus beyond RCTs and diagnosis (e.g., PTSD) and invest in studies that focus on cultural adaptations and integrate adjunctive interventions to trauma-informed treatments. Given the heterogeneous nature of symptoms associated with CSA and its high rate of prevalence, concentrating on formulating guidelines around ways to enhance

the trauma treatments that are already widely in use (e.g., TF-CBT) with the focus on early intervention benefits the greater good of society by reducing the burden of later socioemotional and healthcare costs associated with untreated and compounded trauma.

Survivors

For adult survivors who may have come across this review, perhaps you are looking for a way to reduce the suffering from child sexual abuse, to process the unimaginable, or to resolve symptoms that you have learned to live with from a young age. You are not alone. This was not your fault, and there is hope for healing your past and finding a new way forward. Seek healing that provides safety and regulation, aligns with your culture, connects you with other survivors, and allows you to share your trauma story while incorporating a new narrative for your future: one that honors your pain and your resiliency.

Strengths and Limitations

This systematic review has both strengths and limitations that are discussed concurrently in this final section. One limitation is the lack of research and literature available for review on the topic of the integration of AAT into trauma-informed treatment for survivors of CSA. Given that there were only 12 articles reviewed, which were limited to the United States, Canada, Israel, and Australia, paired with the inclusion of studies with small and large sample sizes, the findings cannot be generalized. A strength of this review is the studies' inclusion of diversity in symptomology, age, gender, and culture. The relative heterogeneity of the studies can also be considered a weakness. As differences in articles include the type of therapy animal, diverse participant characteristics, the therapeutic interventions, the format of therapy delivery (group/individual), the setting (resident in-patient, community clinic, etc.), and the form of assessment (observatory v. formal assessments), the benefits from AAT are not able to be

isolated from the other variables in a way that offers conclusive evidence. Yet, remarkably, consistent themes emerged across the studies, which offer preliminary support for AAT providing additional benefits to trauma-informed treatment. Further, this review contributes to the growing body of literature investigating the benefits and risks of including animal-assisted interventions, sparking conversation around ways to adapt trauma-informed treatment to best meet the needs of those most vulnerable while acknowledging the need for further research on these topics.

A weakness of this review may include its integrative approach, as qualitative data and case studies are often smaller and not randomized, increasing the chance for researchers' bias (Whittemore & Knafl, 2005). However, while statistical significance was the focus of the quantitative studies, clinically meaningful change was emphasized in the qualitative data. In recognition of the value in all forms of information that support and enhance treatment outcomes for youth who have been sexually abused, this review's integrative approach provided a more comprehensive understanding of the ways, benefits, and considerations around animal-assisted therapy and the integration into trauma-informed treatment. Given that youths who have been sexually abused suffer from a wide range of treatment-resistant symptoms that can have lifelong impacts, it is important to increase awareness around treatment options, such as AAT, that might not be able to be generalized to the masses but have the potential to help youth who are less responsive to traditional forms of treatment. Thus, the value of this review is firmly grounded in the belief that each and every child who has been sexually abused is worthy of treatment that is responsive to their individual needs and that prevents future suffering by providing the highest chance for meaningful change.

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APPENDIX A

Search Terms

Search Term ID#	Primary Term	Synonyms/ Alternate Forms	
01	Sexual Trauma	"CSA" "child sexual abuse" "sexual abuse" "molestation" "sexual assault" "rape" "sexual violation" "sexual violence" "survivors of sexual trauma"	
02	Child	"adolescent" "youth" "children" "teenagers" "kids" "kids therapy" "child therapy" "childhood trauma" "child survivors of sexual trauma"	
03	Trauma Treatment	"trauma-focused treatment" "sexual trauma treatment" "sexual abuse treatment" "psychotherapy for trauma" "trauma-focused therapy" "trauma-informed treatment" "trauma-informed practice" "trauma-focused CBT" "trauma-focused cognitive behavioral therapy" "trauma interventions"	
04	Trauma symptoms	"PTSD" "post-traumatic stress disorder" "stress response" "trauma-related symptoms" "trauma response" "trauma-response in children"	
05	Animal-assisted therapy	"animal-assisted intervention" "Equine therapy" "animal therapy" "service animals" "service dogs" "therapy dog" "therapeutic animal' "animal-adjacent therapy" "therapy animal" "therapy (dog/cat/bird/horse etc) " "equine-assisted therapy"	

APPENDIX B

Search Documentation

Search Date	FULL SEARCH ID# initials	TYPE OF SEARCH	DATABASE/SOURCE	SEARCH TERM ID#

SEARCH SYNTAX OR OTHER GUIDELINES FOR THE SEARCH	FIELDS SEARCHED	SEARCH SPECIFIER: Publication Type	# of Records	NOTES

APPENDIX C

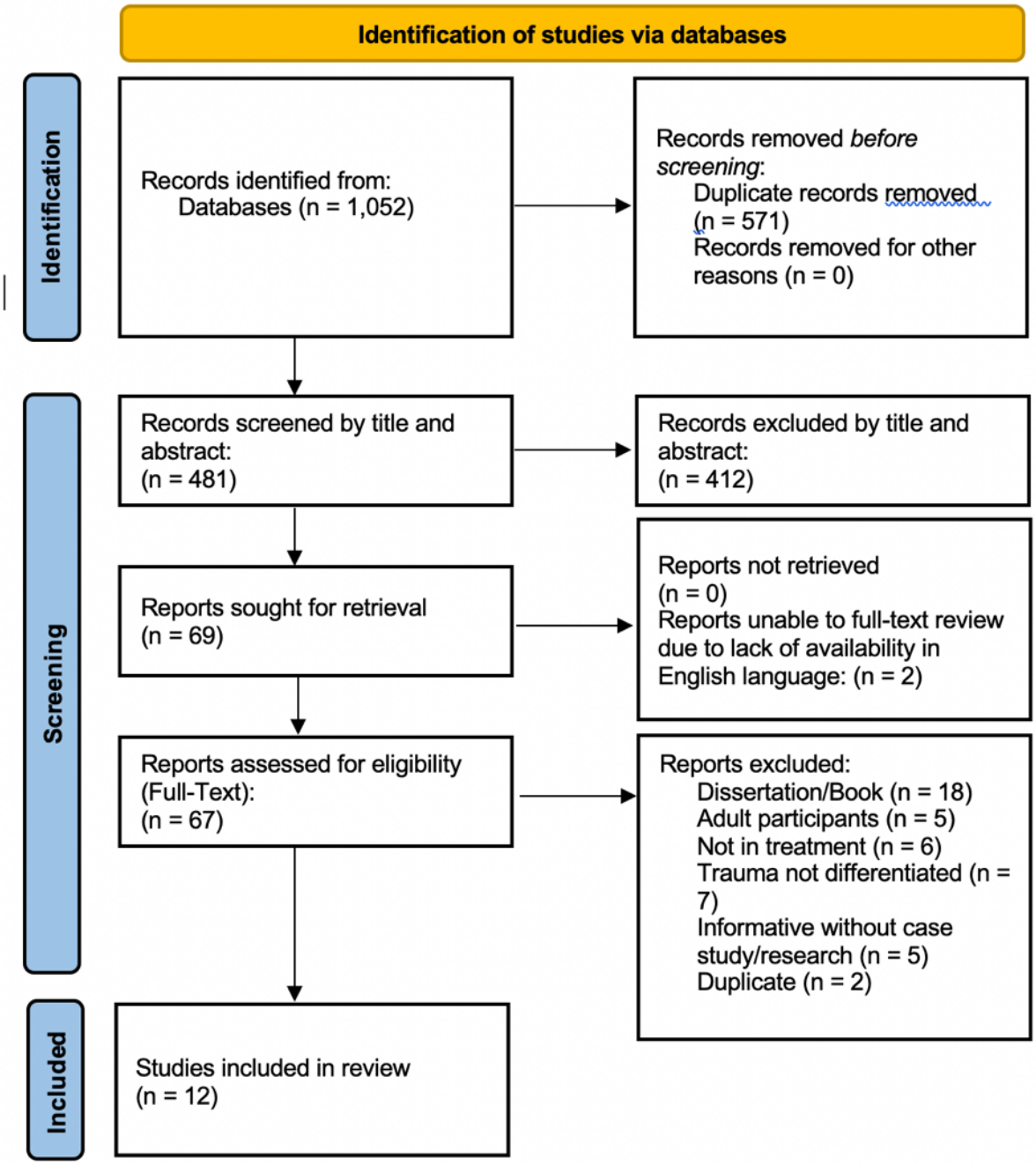
Screening and Selection Record

SCREENING AND SELECTION RECORD														
AUTHOR	Code	YEAR	ABBREVIATED TITLE	DATABASES/ SOURCES	TITLE AND/OR KEYWORD SCREEN: DECISION - DATE	ABSTRACT SCREEN: DECISION - DATE	FULL-TEXT SCREEN?	INCL (SO): *Published Peer-reviewed Study*	INCI: participant has trauma-related symptoms for which	INCL (SO): study available in English	INCL(RV): trauma TX	INCL (RV): Animal-assisted therapy/ Interventions	INCL(PAR): Age: Under 18	INCL(PAR): Participant in TX for SX related to sexual trauma

INCL (M): SX were assessed before and after TX	EXCL: Participant is an adult w/ hx of CSA** PLACE INTO FOLDER ON DRIVE IF ALL OTHER CRITERIA IS MET	EXCL: Therapist is not a trained clinician	PLEASE NOTE: if animal is called a pet/ it is clear animal is not therapeutic animal ***do	REVIEWER DECISION INITIALS - DATE	SECONDARY/ CONFIMATORY DECISION	FINAL DECISION	FINAL DECISION DATE	DECISION NOTES

APPENDIX D

PRISMA Flow Diagram


Identification of studies via databases
Identification
Records identified from:
Databases (n = 1,052)
Records removed *before screening*:
Duplicate records removed (n = 571)
Records removed for other reasons (n = 0)
Screening
Records screened by title and abstract:
(n = 481)
Records excluded by title and abstract:
(n = 412)
Reports sought for retrieval
(n = 69)
Reports not retrieved
(n = 0)
Reports unable to full-text review due to lack of availability in English language: (n = 2)
Reports assessed for eligibility (Full-Text):
(n = 67)
Reports excluded:
Dissertation/Book (n = 18)
Adult participants (n = 5)
Not in treatment (n = 6)
Trauma not differentiated (n = 7)
Informative without case study/research (n = 5)
Duplicate (n = 2)
Included
Studies included in review
(n = 12)

APPENDIX E

Data Collection and Extraction Form

Modified from: *Effective Practice and Organization of Care (EPOC). Data collection form. EPOC Resources for review authors. Oslo: Norwegian Knowledge Centre for the Health Services; 2013. Available at: http://epoc.cochrane.org/epoc-specific-resources-review-authors*

Study/Document Identification

Document name for citation *(e.g. Smith, 2011)*	
Document ID *(4-digit number assigned to each document)*	
Full Document Title	

General Info

Date form completed and initials *(dd/mm/yyyy), Z. T.*	
Source Name/Publication Type *(Name of journal/ journal, book)*	
APA Format Citation of Source *(include doi link)*	
Document Country of Origin	
Database used *(PsychInfo)*	

Methodological Information

Component	Description as Stated in Document	Location in Text *(pg. & ¶/fig/table)*
Aim of Study *(e.g. efficacy, equivalence, pragmatic, etc.)*		
Methods: General Design	[ ] Quantitative [ ] Qualitative [ ] Mixed [ ] Other:	
Methods: Specific Design/Approach		
Study Start Date *(dd/mm/yyyy)*		
Study End Date *(dd/mm/yyyy)*		
Duration of Participation *(from recruitment to last follow-up)*		
Control group description	[] Yes []No If Yes description:	
Notes:		

Setting Information

Component	Description as Stated in Document	Location in Text *(pg & ¶/fig/table)*
Study Location *(geographical data)*		
Data Collection Setting		
Notes:		

Participant Information

Component	Description as Stated in Document	Location in Text *(pg & ¶/fig/table)*
Population Description		
Inclusion Criteria		
Exclusion Criteria		
Recruitment Methods		
Sample Size		
Participant Gender		
Participant Age		
Participant Race/Ethnicity		
Participant Caregiver Marital Status *(married, divorced, cohabitating, single)*		
Participant SES		
Participant Grade Level		
Family Type *(Intact, co-parenting, single- parent, foster, etc.)*		
Primary Diagnosis *(PTSD, trauma symptoms, anxiety, depression, etc)*		
Comorbidities		
Confirmed CSA history	[] Yes [] No [] N/A	
Knew perpetrator	[] Yes [] No [] N/A	
Single incident or multiple	[] Single [] Multiple [] N/A	
Notes:		

Animal Information

Component	Description as Stated in Document	Location in Text
Animal type *(i.e. canine, horse etc)*		
Animal categorization *(i.e. therapy animal)*		
Description of level of participation in therapy/contact with participants		
Notes:		

Treatment Information

Component	Description as Stated in Document	Location in Text
Treatment type *(i.e. TF-CBT, narrative therapy, etc)*		
Format and frequency *(i.e. therapy animal)*		
Duration of treatment		
How were symptoms assessed	[]before tx []after tx	
when were symptoms assessed:		

Assessment of Research Variables

RESEARCH VARIABLES	How Assessed *Measure, Observation, Interview Question, etc*	Reliability/Validity/Utility	Location in text
1. **Variable 1**			
2. **Variable 2**			
3. **Variable 3**			
4. **Variable 4**			
5. **Variable 5**			
6. **Notes:**			

Analyses Conducted

	Description as stated in report/paper	Location in text
7. **Descriptive Statistics used**		
8. **Inferential Statistics used**		
9. **Qualitative Analyses conducted**		
10. **Quantitative Analyses conducted**		

Results

	Description as stated in report/paper	Location
11. **Key Result #1**		
12. **Key Result #2**		
13. **Key Result #3**		
14. **Key Result #4**		
15. **Key Result #5**		
16. **Notes:**	***were there additional benefits with a therapy animal [] yes []no, if yes, details:** ***counterindications for use of therapy animals:**	

Conclusions and Follow-up

	Description as stated in report/paper
17. **Key conclusions of study authors**	
18. **Study Author's Recommendations for Future Research**	
19. **Does the study directly address your review question?**	
20. **Your Take-Aways: General**	
21. **Your Take-Aways: Implications for Practice**	
22. **Salient Study Limitations (to inform Quality Appraisal)**	

APPENDIX F

Individual Study Quality Appraisal Form

INDIVIDUAL STUDY QUALITY APPRAISAL FORM FOR SYSTEMATIC REVIEWS
Developed by Shelly P. Harrell, Ph.D., Pepperdine University

Author(s) and Year: _____ **Study ID#**_____

1. Methodology: Quantitative Qualitative Mixed Methods

2. Specific Design/Inquiry Approach: _____

RATINGSCALE: Strong=3 Good/Adequate=2 Weak=1 Missing=0 N/A

3. Strength of Literature Foundation and Rationale for Study: _____
(POSSIBLE CONSIDERATIONS: current and relevant references, background literature sufficiently comprehensive, Need/Rationale for study clearly stated, etc.)

4. Clarity and specificity of Research Aims/Objectives/Questions/Hypotheses: _____

5. Quality of research design or methodological approach: _____
GENERAL CONSIDERATIONS: provides rationale for design chosen, appropriateness for research questions, clear description of design and methodological approach, strength of design characteristics utilized

QUANTITATIVE CONSIDERATIONS: internal and external validity considered in design; potential confounds identified and addressed in some way, specific design-based "risk of bias" criteria considered such as randomization, blinding

QUALITATIVE CONSIDERATIONS: consistent with specific practices relevant to the inquiry strategy (e.g., phenomenological study, case study, grounded theory, etc.), triangulation, audit trail

6. Sample Selection and Characteristics: _____
GENERAL CONSIDERATIONS: 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

QUANTITATIVE CONSIDERATIONS: representativeness of sample, adequacy of sample size in context of design, extent of selection or sample bias
QUALITATIVE CONSIDERATIONS: sample size appropriate for inquiry strategy; rationale for purposeful sample characteristics

7. Data Collection Tools (Scales, Observation, Interviews, etc.): _____

GENERAL CONSIDERATIONS: rationale for selection, appropriateness for assessing variables, development of study-specific tool or process clearly described, piloting, pretesting;

QUANTITATIVE CONSIDERATIONS: psychometric properties (reliability, validity, utility) reported, adequacy of psychometric properties, normative or standardization data described

QUALITATIVE CONSIDERATIONS: appropriateness for inquiry strategy and purpose; interview or other data collection process described clearly and comprehensively

8. Data Collection Processes: _____

(POSSIBLE CONSIDERATIONS: data collection procedures clearly described in sufficient detail, intervention strategies and implementation described in detail, quality of data collected, design-specific considerations such as attrition in RCTs, saturation in grounded theory, etc.)

9. Analysis and Presentation of Data: _____

GENERAL CONSIDERATIONS: appropriateness of analysis for research questions and type of data; results presented clearly and comprehensively; usefulness and clarity of any tables, graphs, and charts

QUANTITATIVE CONSIDERATIONS: power and effect size reported; relevant statistics reported clearly; effective use of tables

QUALITATIVE CONSIDERATIONS: textual data and/or direct quotes reported and used effectively; transparent description of the development of themes from raw data

10. **Discussion of Study Limitations:** _____

GENERAL CONSIDERATIONS: identifies and discusses limitations in the context of design/strategy utilized

QUANTITATIVE CONSIDERATIONS: addresses various forms of bias, internal validity, external validity (generalizability), ecological validity

QUALITATIVE CONSIDERATIONS: transferability, credibility, transparency,

11. Consideration of culture and diversity: _____

(POSSIBLE CONSIDERATIONS: attention to diversity within sample, includes culturally appropriate methods and tools, avoids biased language, uses appropriate terminology, etc.)

12.

OVERALL RATING:	**EXEMPLARY** (e.g., all “3”s)	**STRONG** (e.g., mostly “3”s)	**GOOD/ADEQUATE** (e.g., mostly “2”s)	**WEAK** (e.g., mostly “1”s)

APPENDIX G

Main Evidence Tables

ID	Authors/ pub year	Full Document Title	Publication Source	Database	RV3: Country of Origin	Methodology	Study Characteristics/ Design Study/Approach	Study Aim	RV3: Setting	RV3: Participant Characteristics (PC): Sample Size	RV3: PC: Gender	RV3: PC: Age	RV3: PC: Race/ Ethnicity	PC: Grade Level

RV3: info around CSA hx	RV3: PC: Family Type 1- Intact 2- Co-parenting 3- Single-Parent 4- Foster 5- adoptive 6 other	RV2: PC: previous treatment info if relevant	Research Variables (RV1): Types of symptoms reported	RV1: AAT info: Type of animal reported and categorization: 1: Canine, 2: Equine, 3: other (specify)	RV1: AAT info: description of participation of animal/ contact with participants	RV1: Treatment Type and description	RV1: Treatment type: format/ frequency/ duration of treatment	Assessment of Research Variables	Analysis and Statistical Info. 1- Descriptive 2- Inferential 3- Qualitative Analysis Conducted 4- Other	Research Variables: Benefits (RV2): Rate of attrition	Results/Outcomes (Key Result 1):	Results/Outcomes (KR2):

Results/Outcomes (KR3):	Results/Outcomes (KR4):	Results/Outcomes (additional)	RV2: were there additional benefits with a therapy animal? detail what they were:	RV3: Counterindications for AAT	future research/ limitations	Take Aways: Implications for Practice	Any additional notes*