

The Healing Capacity of Animal Assisted Counselling

by

Sylvia M. Keszthelyi

A capstone submitted in partial fulfillment

of the requirements for the Degree of

Master of Counselling (MC)

City University in Canada

Vancouver, BC

January 2026

APPROVED BY

Maria Stella, Ph.D., RCC, Capstone Supervisor, Master of Counselling Faculty

Jill Taggart, Ph.D., RCC-ACS, Faculty Reader, Master of Counselling Faculty

School of Health and Social Sciences

Abstract

Amid rising and increasingly complex mental health challenges, there is a growing demand for innovative therapeutic approaches that address both physiological and relational aspects of client care. While animals have long been used in the treatment of humans, the formal implementation of animals with the clinical treatment plan is still a newer, growing modality that is not well understood. The goal of this capstone is to provide counsellors, current and future, with a comprehensive understanding of animal-assisted counselling and how it can enhance their therapeutic practice. The human-animal bond has intrinsic attributes that support individuals to feel more connected with others and within themselves using the foundations of Polyvagal theory and the therapeutic alliance. This capstone will propose a workshop to educate any counsellors interested in using animals within their clinical work, to expand their capacity in addressing the evolving landscape of mental health care.

Keywords: animal assisted counselling, human-animal bond, Polyvagal theory, therapeutic alliance

Acknowledgement

I would like to thank my partner, Sheldon, for walking beside me throughout this journey. His endless encouragement, quiet strength, and unwavering support carried me through the most challenging moments. I could not have completed this work without you. Thank you.

I would also like to acknowledge my parents, who are no longer here. Their unwavering belief in me, the sacrifices they made for our family, and the deep value they placed on education continue to guide and inspire me. This work is carried by their love and faith in who I could become.

I would like to thank my sister, Eni, for her steadfast support and love throughout my life. Your presence has always meant more to me than words can express.

I extend my heartfelt thanks to my advisor, Dr. Maria Stella, whose thoughtful guidance, expertise, and steady support throughout this project were essential in bringing this work to fruition.

I would like to thank all my classmates at City U, I've learned so much from each one of you throughout our journey together. It fills me with gratitude that many of you have become close friends and trusted colleagues as we move forward in our work as counsellors.

Lastly, I am deeply grateful to my friends and family for their steadfast support and patience throughout the past few years, as my focus on my studies often limited my availability. Your understanding and encouragement did not go unnoticed.

Dedication

I would like to acknowledge my beloved dogs, Elvis and Marigold, whose boundless love, playful energy, and loyal companionship over the years have been a source of joy, comfort, and grounding in my life. You inspire me daily to be a better human, dog mom, and now counsellor. From offering comfort when I felt stressed, to nudging me with affection during my toughest moments, to quietly keeping me company through endless assignments, your presence has been a steady source of love and encouragement that words cannot fully express. You are my honorary counsellors, and no amount of treats, belly rubs, or playtime could ever repay you. Thank you for choosing me to be your human and for being the true inspiration behind this work.

Table of Contents

Abstract.....	2
Acknowledgement	3
Dedication.....	4
Table of Contents.....	5
Chapter 1: Introduction.....	7
Overview of the Topic	8
Purpose Statement.....	11
Contribution to the Field.....	12
Reflectivity and Positionality Statement.....	13
Definition of Terms.....	14
Outline of the Capstone Project Chapters.....	16
Chapter 2: Literature Review.....	18
Defining Animal-Assisted Counselling	18
Models of AAC Delivery.....	20
Therapeutic Adaptability and Applications of AAC	20
Historical Foundations of AAC	21
The Human-Animal Bond.....	24
Definition and Significance	24
Therapeutic Implications	24

Ethical Considerations	25
Animal Welfare, Safety and Risk Management	26
Cultural Considerations	29
Polyvagal Theory and Therapeutic Safety	31
Animals as Co-Regulators	32
Physiological Mechanisms.....	34
The Therapeutic Alliance in ACC	36
Importance of the Therapeutic Relationship.....	36
Summary	44
Chapter 3: Discussion and Application.....	46
Discussion.....	46
Application.....	47
Limitations to this Capstone	51
References.....	53

Chapter 1: Introduction

As the mental health needs of clients continue to rise, counsellors are increasingly seeking therapeutic approaches that extend beyond traditional talk therapy. No single modality can meet the diverse emotional and relational needs of all clients, particularly those who struggle with regulation, trust, or verbal processing. Animal-Assisted Counselling (AAC) has emerged as a supportive therapeutic approach that complements and enhances existing practices.

Human and animals already have a long history of reciprocal companionship, with almost 80% of Canadian households having at least one pet (Statista, 2025). For those who are pet owners, 89% reported that having a pet improved their mental health (Zoetis, 2023). Building further upon the unique qualities of the human–animal bond—such as nonjudgmental presence, warmth, and emotional attunement—AAC offers meaningful benefits for clients within the therapeutic process.

Working in community mental health for nearly a decade, I have supported many individuals diagnosed with mental health disorders with complex relational and regulation challenges. Many of these individuals have struggled with more traditional treatment models. It was through my work and organizing pet therapy visits and field trips to therapy farms for clients that I saw first-hand the immense contribution that animals make to people who are disconnected from themselves and the world. Fine (2019) describes therapy animals as beneficial to clients' emotional well-being, relationship connection, and comfort.

These programs were the mostly highly attended with individuals eagerly looking forward to the next session and it became an ice-breaker amongst normally quiet participants. It gave them something to look forward to as well as served as a conversational starter between residents. Additionally, the patients were comforted by the dogs' physical contact and connection

to them. When I witnessed how deeply the therapy animals enhanced the clients' sense of well-being, I began to wonder how their presence might be incorporated into a counseling setting to enhance the clinical experience—especially for clients navigating the complexities of mental health challenges.

In this chapter, I will explore the background behind my research question and the significance of this research. Additionally, I will define key terms that will be used throughout this capstone. In the next chapter, I will review the literature on animal assisted counselling including its history, the human-animal bond, and all the unique ethical, morale and cultural considerations. I will also review literature on nervous system regulation and therapeutic alliance and how they can be enhanced by this modality. In chapter 3, I will propose a workshop for counselling students who are interested in incorporating animal-assisted counselling into their therapeutic work with clients.

Overview of the Topic

Mental health has a direct impact on our wellbeing as individuals and as a country. In a Statistics Canada study released in 2022, almost one in five Canadians aged 12 and older reported that they needed some help with their mental health. The actual prevalence of distress, however, might be underestimated. A report published last year by the Canadian Mental Health Association found that the mental health of Canadians is three times worse in 2024 than prior to the pandemic (Lowe et al., 2024).

The mental wellbeing of individuals is also deeply impacted by the experience of trauma. According to Stats Can (2022), 63% of people in Canada have gone through a traumatic incident at some point in their lives. Nearly half of individuals who fit the criteria for likely PTSD have sought professional support related to the traumatic experience (Stats Can, 2022). For those

affected, trauma is “not the story of something that happened back then, but the current imprint of that pain, horror, and fear living inside people” (van der Kolk, 2015, p. 95). The impacts of adverse mental health and trauma can be subtle, gradual, or profoundly damaging, often disrupting emotional regulation, and the capacity to engage in stable relationships or daily functioning.

Despite widespread need, countless individuals struggle to engage in traditional talk therapy despite strong empirical support showing it to be effective (Cook et al., 2017; Roy & Tapader, 2025). Many clients report discomfort talking about personal issues (Cronin et al., 2020); this is especially true for those who have experienced trauma, as verbalizing traumatic memories can feel overwhelming or inaccessible (Levine, 2010). Additionally, many individuals - particularly young people with complex mental health issues – withdraw early or do not fully improve from conventional therapies (De Soet et al., 2023).

A growing body of research highlights that mental health challenges and trauma are closely tied to disruptions in autonomic nervous system (ANS) regulation. Numerous psychiatric illnesses are associated with impaired ANS regulation, such as anxiety, depression, PTSD, and suicidality (Kemp & Quintana, 2013; Beauchaine, 2015). Dysregulated sympathetic and parasympathetic responses can impair emotional regulation, interoception, and the felt sense of safety needed for therapeutic engagement (Porges, 2011; van der Kolk, 2015).

Clients’ ability to connect, regulate, and trust is shaped by these physiological patterns interacting with larger neurobiological systems, such as oxytocin pathways involved in bonding and stress buffering and cortisol responses linked to threat appraisal and coping. Oxytocin is a key neuromodulator, and its altered signaling has been implicated in the presence of several psychiatric disorders (Florea et al., 2022). Evidence also suggests that enhancing oxytocin

function may help improve symptoms in some conditions, such as anxiety and depression (Florea et al., 2022). Additionally, research indicates that abnormalities in the body's stress response system – the HPA axis – such as blunted or prolonged cortisol responses – are connected to major depressive disorder (Nandam et al., 2020), anxiety (Zorn et al., 2017), trauma (Flinn et al., 2025) and schizophrenia (Zorn et al., 2017). With cortisol disruptions indicative of symptom severity and poorer stress adaptation, this biomarker is an essential component to consider within therapeutic treatment.

Supporting both ANS functioning and these interconnected neurobiological systems has been acknowledged as the cornerstone of effective counselling since clients need sufficient safety and relational openness to participate meaningfully in therapy (Fogel, 2009; Porges & Dana, 2018). Beyond the physiological considerations, individuals seeking support for the challenges impacting their mental health, life, or relationships must be able to forge a supportive working relationship with their counsellor.

Client narratives on therapeutic failure highlight that clients themselves report that a weak or diminishing working alliance is central to why the therapy was not successful (Knox et al., 2023). Additionally, a weak alliance can hinder the therapist's capacity to provide meaningful interventions, indicating that therapeutic alliance is not only desirable but essential for effective treatment (Gazzola, 2022; Tschuschke et al., 2022). However, therapists cannot always provide the level of attunement, presence, and coregulation required to consistently support clients' shifting states. This creates gaps – especially for clients whose nervous systems are highly reactive, shut down, or slow to trust.

Increasingly, counsellors are exploring multi-modal approaches that help clients feel safer, more regulated, and more able to engage in therapy. Animal-Assisted Counselling (AAC)

is one such approach. The human–animal bond has been shown to support several areas in which clients commonly struggle, including emotional regulation, stress reduction, social comfort, and the ability to remain present during difficult therapeutic work (Handlin et al., 2011; Odendaal & Meintjes, 2003). The non-judgmental, calming, and relational qualities of therapy animals can enhance clients' felt sense of safety, increase engagement, and help them access the relational and regulatory capacities needed for effective counselling (Wesley et al., 2009). In this way, AAC may help address many of the barriers that prevent individuals from benefiting fully from traditional talk therapy.

Counselling remains a powerful pathway towards mental wellness, but it must offer a secure relational environment and support the client's physiological states. Given the limitations of therapist-only coregulation, this capstone proposes the integration of animals within counselling to enhance the therapist's multimodal toolbox and better meet the needs of clients struggling with mental health and trauma.

Purpose Statement

This capstone explores the healing capacities of the human-animal bond as described in existing literature within the counselling treatment. The research question is: How can leveraging the human-animal bond within the counselling treatment be beneficial to the client? There is extensive literature about the therapeutic use of animals; however, the implementation of animals within a formal treatment plan separate from activities or education is still a therapeutic intervention that is not fully understood. As an ever-growing modality within the field of therapy, there is still a lack of clear understanding of what animal-assisted counselling is and what mechanisms it leverages that enhance clinical experience. To address this need, in this capstone literature will provide an examination of animal-assisted counselling including its

history and all the considerations of this innovative intervention, including how it is enhanced by the human-animal bond. There will be particular attention to examining best practices related to ethical and cultural considerations when implementing this modality. The impact of this intervention on an individual's nervous system will be explored, including literature on polyvagal theory. Lastly, how this modality can impact the therapeutic alliance will be explored.

In the last chapter of this capstone, I will propose a workshop for counsellors, current and future, who are interested in incorporating animal-assisted counselling into their therapeutic work with clients. Therapists who have close connection to animals and are interested in utilising the human-animal bond to enhance their clinical work would be interested in this research. Therapists who work with clients who experience disrupted states of regulation as well as clients who experience challenges in interpersonal relationships will also benefit from this research. Additionally, any therapist who work with clients who find reassurance in the company of animals may also find this research particularly relevant. The research seeks to explain the mechanisms underlying animal-assisted counselling—particularly neurobiology and the therapeutic alliance—to clarify how animals can enhance clinical outcomes. Therapists who read this capstone will gain an enhanced understanding of how using animals can support clients feeling regulated and safe within therapeutic relationship.

Contribution to the Field

Through exploring the literature on the best practises and clinical mechanisms within animal assisted counselling, I will propose a workshop for future counsellors looking to work with animals to enhance their therapeutic toolkit. These findings aim to expand the knowledge around this modality for new and emerging counsellors who have received limited, if any, education around this modality, and how animals can enhance the clinical experience for both

clients and therapists. The human-animal bond fosters an attachment relationship that activates biological mechanisms supporting an individual's sense of security, social connectedness, nervous system regulation, and overall psychological health.

This capstone seeks to guide therapists in using animals to help clients anchor themselves in the therapeutic process, deepen relational connection, and gradually cultivate a greater sense of safety and security. This capstone is designed to assist therapists who work with clients whose nervous system patterns or relational experiences may make therapy more challenging, and to offer guidance for clinicians who are personally drawn to animals and hope to weave the human-animal bond meaningfully into their therapeutic practice.

Reflectivity and Positionality Statement

This research topic is meaningful to me as a counsellor-in-training because of how instrumental animals have been within my own healing journey, providing a sense of safety and calm when much of the world did not offer the same. Additionally, I have been shaped by the supportive and grounding relationships I have had with animals throughout my life. Animals have been meaningful companions to me, significant beings who provided safety with their presence when my own body and other human beings have not.

Because of my experiences, I associate animals with positive feelings of comfort, emotional grounding and security. Through my bonds with animals, I have also personally experienced their healing influence benefiting emotionally and mentally from the relationships I had with them.

As a middle-class, white Canadian woman of European descent, my family has a long history of having dogs, cats, chinchillas and hamsters as valued pets and family members. It is

important to acknowledge that for many individuals or families, their own personal history with animals may be otherwise due to trauma, religious or cultural narratives.

Lastly, I have integrated programs that capitalize on the human-animal bond within my prior work in community mental health; and witnessed the transformative power of animals on clients' wellbeing. It was the pet therapy programs that resonated most with clients, and they often asked, "When will we see the animals again"? At the same time, I have experienced and seen first-hand, the burnout that many helping professionals face as pressures on the system continue to increase. At the end of those long, emotionally heavy days, my own dogs Elvis and Marigold were always there, greeting me with their unconditional love and bring me their cuddles and kisses the moment they sensed my stress.

Together, these experiences fuel my passion for this subject and my dedication to expanding the understanding of how animals enhance therapeutic practice.

Definition of Terms

Animal Assisted Counselling (AAC): A goal oriented, planned and structured animal assisted intervention directed and/or delivered by professionals licensed counsellors (International Association of Human Animal Interaction Organizations [IAHAIO], 2018).

Animal Assisted Intervention (AAI): A goal oriented and structured intervention that intentionally includes or incorporates animals in health, education and human services (e.g., social work) for the purpose of therapeutic gains in humans (International Association of Human Animal Interaction Organizations (IAHAIO), 2018).

Animal Assisted Therapy (AAT): A goal oriented, planned and structured therapeutic intervention directed and/or delivered by health, education or human service professionals (IAHAIO, 2018)

Attunement: A process by where one focuses on the “internal world of the other”, providing them a sense of being of being “felt”, understood and connected (Siegel, 2012).

Autonomic Nervous System: Portion of the neural system responsible for controlling autonomic, unconscious physiological processes, plays an essential role in regulating emotional regulation, stress responses, and social interaction (Porges, 2011).

Biophilia Effect: The increased sense of connection, emotion regulation and overall wellbeing that comes from our innate, biological drive to be among animals and other forms of nature (Julius et al., 2012).

Biophilia Hypothesis: The evolutionary predisposition of humans to connect with nature and other forms of life (Wilson, 1984; as cited in Nieforth et al., 2021).

Coregulation: The process by which relationship partners form a dyadic emotional system involving an oscillating pattern of affective arousal and dampening that dynamically maintains an optimal emotional state (Butler & Randall, 2013).

Cortisol: The body’s primary stress hormone, and chronically high levels are linked to problems with mood, sleep, and overall emotional regulation (McEwen, 2007).

Human-Animal Bond: The profound connections between humans and animals characterized by physiological, psychological and social benefits (Walsh, 2009).

Hyperarousal: State of excessive sympathetic activation characterized by hypervigilance, anxiety, and difficulty regulating emotions, often arising when the nervous system becomes stuck in a defensive fight-or-flight response (van der Kolk, 2015).

Hyperarousal: State of diminished autonomic activation linked to dorsal vagal shutdown, presenting as dissociation, emotional numbing, low energy, and difficulty engaging with oneself or others (van der Kolk, 2015).

Neuroception: The nervous system's unconscious process of detecting cues of safety, danger, or threat and automatically shifting the body into defensive or socially engaged states (Porges, 2011).

Oxytocin: Neuropeptide that supports bonding, relaxation, and stress regulation by enhancing feelings of trust and emotional safety in supportive relationships (Sharma et al., 2020).

Polyvagal Theory: A theory that proposes that a state of safety is mediated by neuroception, a neural process that may occur without awareness, which constantly evaluates risk and triggers adaptive physiological responses that respond to features of safety, danger, or life threat. According to the theory, when safety is communicated via expressed markers of social engagement, defensiveness is down-regulated (Geller & Porges, 2014, p. 178).

Therapeutic Alliance: A collaborative relationship between therapist and patient that is influenced by the extent to which there is agreement on treatment goals, a defined set of therapeutic tasks or processes to achieve the stated goals, and the formation of a positive emotional bond (Baier et al., 2020).

Vagus Nerve: The primary pathway of the parasympathetic nervous system, helping regulate heart rate, digestion, and social engagement responses, and plays a central role in Polyvagal Theory (Porges, 2011).

Outline of the Capstone Project Chapters

In this chapter, I highlighted why counsellors require therapeutic approaches beyond talk based models to effectively support the increasing number of clients experiencing complex mental health and trauma. I then outlined the contribution of my research to the field, how I will propose a workshop for counselling students who want education about this uncommon

therapeutic modality and my positionality statement on the topic. Additionally, I included a list of definitions of key terms that will be used throughout the paper.

In chapter 2, I will review the literature around animal-assisted counselling, with particular focus on how this modality can impact an individual's nervous system and the therapeutic alliance. This capstone aims to answer the research question: How can leveraging the human-animal bond within the counselling treatment be beneficial to the client? I will apply Levinson's Animal Assisted Therapy, the human-animal bond as well as Polyvagal theory and neurobiology as theoretical frameworks. I will also explain the ethical and cultural considerations unique to specific to this therapeutic intervention, and finally explain some of the animal welfare, safety and risk management limitation and barriers that are important when considering bringing animals into clinical practise. In the finale chapter, I will provide an outline of workshop for counsellors, current and future, who would like to explore utilizing the human-animal bond within their clinical practice.

Chapter 2: Literature Review

Animal-assisted counselling (AAC) is a structured, goal-oriented approach in which trained animals are integrated into therapeutic processes to support clients' emotional, psychological, and relational well-being. Rooted in the broader field of animal-assisted interventions (AAI), AAC builds on historical practices and empirical research demonstrating the benefits of the human–animal bond. This literature review explores AAC from multiple perspectives, including its definition and models of delivery, therapeutic adaptability across frameworks and populations, historical foundations, ethical and cultural considerations, physiological mechanisms of nervous system regulation, and the role of animals in enhancing the therapeutic alliance. Together, these sections provide a comprehensive understanding of how AAC operates as a clinically effective and ethically informed intervention.

Overview of Animal-Assisted Counselling (AAC)

Animals have long supported human health and well-being. The term animal-assisted interventions (AAI) encompass the intentional and purposeful inclusion of animals in interventions designed to promote therapeutic gains within human health, well-being, or education (International Association of Human Animal Interaction Organizations [IAHAIO], 2018; Jones et al., 2019). Research on AAIs demonstrates positive effects on psychological and physiological well-being, with several theories proposed to explain these outcomes (Beetz, 2017).

Defining Animal-Assisted Counselling

This section outlines the definition and scope of Animal-Assisted Counseling (AAC) and presents the various models through which AAC can be delivered.

Definition and Scope. In the 1980s and 1990s, the Delta Society (now known as Pet Partners USA) was among the first to formally define interventions involving animals (Jones et al., 2019; Kruger & Serpell, 2010). Their widely cited distinctions differentiate animal-assisted therapy (AAT) as structured, goal-oriented interventions from animal-assisted activities (AAA), which are more informal and recreational in nature with the absence of any therapeutic goal setting (IAHAIO, 2018; Fine, 2019; Jones et al., 2019).

Animal-assisted therapy in counselling (AAC) is a specialized form of animal-assisted Therapy (AAT) practiced by qualified health professionals—such as clinical counsellors, counselling psychologists, and clinical social workers who integrate trained and certified animals into the counselling process (Canadian Counselling and Psychotherapy Association [CCPA], 2024; Jones et al., 2019; Pet Partners, 2012; as cited in Stewart et al., 2013). Dr. Elizabeth Kjellstrand Hartwig (2016) defines AAC as a “goal-directed process in which a trained mental health practitioner-animal team work together to help clients resolve mental health and behavioral challenges and achieve growth using the therapeutic capability of human-animal interaction” (p.1).

Animal-assisted counselling (AAC) is a deliberate, structured component of a client’s counselling treatment plan (Jones et al., 2019; Kruger & Serpell, 2010; IAHAIO, 2018). Although terms such as animal-assisted therapy in counselling or animal-assisted psychotherapy, or animal-assisted play therapy are often used interchangeably, this paper will use the term AAC for consistency (Jones et al., 2019; Fine, 2019; Stewart et al., 2013).

Dr. Cynthia Chandler (2024) author of the landmark *Animal Assisted Therapy in Counselling*, and Dr. Aubrey Fine (2024), author of the landmark *Handbook on Animal Assisted Therapy*, have played pivotal roles in shaping the field (Stewart et al., 2013). Their contributions

based on their own work with the intervention have been invaluable in terms of defining the practice, establishing practitioner and animal training standards, promoting formal education and training, key practical considerations for its implementation and expanded awareness of AAC (Stewart et al., 2013).

Models of AAC Delivery

AAC is provided using two main approaches: in the triangle model, the counselling professional acts as the animal handler; in the diamond model, the professional collaborates with both an animal and a handler as a team (CCPA, 2024; Stewart et al., 2013). While animals are integral to animal-assisted counselling, it is a misconception to view them as therapists. Animals do not possess an understanding of therapeutic objectives or methods. Instead, animals function as facilitators or change agents within the therapeutic relationship (Chandler, 2017). According to Bachi and Parish-Plass (2016), the animal serves as a means through which therapeutic processes occur, while the primary focus remains on the client and their treatment goals. The presence of the animal primarily helps to foster a supportive therapeutic atmosphere and encourages client engagement (Fine, 2019; Kruger & Serpell, 2010).

Therapeutic Adaptability and Applications of AAC

This section examines the integration of Animal-Assisted Counseling (AAC) across various theoretical frameworks, applications, and practice settings.

Integration Across Theoretical Frameworks. AAC is not a stand-alone intervention; rather, it is integrated with established therapeutic modalities such as Psychodynamic, Gestalt Therapy, Cognitive-Behavioural, Dialectical Behaviour, and Eye Movement Desensitization and Reprocessing (EMDR) (Bachi & Parish-Plass, 2016; Chandler, 2017; Compitus, 2019). It aligns well with Solution-focused Therapy emphasizing collaboration and inclusivity (Handley, 2021;

Pichot & Coulter 2007). Hybrid models such as Human–Animal Resilience Therapy (HART) also combine solution-focused and canine-assisted methods (Hartwig, 2017).

Applications and Populations. One of the benefits of AAC is that it can be adapted for a variety of populations and conditions and adapted to the clients’ specific needs, including within individual, family, and group contexts (Hartwig, 2021; Chandler, 2017). The adaptability of AAC makes it well-suited to trauma-informed and attachment-based approaches, particularly in working with clients who struggle with relational disruptions (Fine, 2019). Though dogs and horses are the most often employed, a range of other animals have also been used within these supplementary therapy treatments including cats, guinea pigs, birds, and dolphins (O’Haire et al., 2015).

Animal-assisted counselling (AAC) has been applied with various populations across the lifespan, including psychiatric patients (Pandey, 2024), war veterans (van Houtert et al., 2018), prison inmates (Villafaina-Domínguez et al., 2020), neurodiverse individuals (Nieforth et al., 2021), and at-risk children and youth (Hoagwood et al., 2016). Within health care, there is growing interest in the benefits of incorporating AAC in various settings, such as intensive care, pediatric, mental health, spinal cord injury, pain management, and aged care (White et al., 2015).

Historical Foundations of AAC

This section traces the historical development of Animal-Assisted Counseling (AAC), beginning with its early foundations, followed by the influence of psychoanalytic theory, and continuing through to the modern era and the expansion of empirical research.

Early Foundations. The earliest documented therapeutic use of first known use of animals occurred in the late 18th century at a York Retreat in England, where mentally ill patients interacted with small domestic animals to reduce anxiety, foster socialization and connection to

nature (McCulloch, 1983; as cited in Fine et al., 2019; Velde et al., 2005). In 1919, the U.S. military introduced dogs as a therapeutic intervention for patients with mental health conditions at the St. Elizabeths Hospital in Washington, D.C. (Velde et al., 2005). Florence Nightingale is widely recognized for her early use of animals in therapeutic settings, noting the calming effects of the human-animal bond on both children and adults—particularly in reducing anxiety and supporting recovery in psychiatric institutions (Fine et al., 2019; Jalongo, 2022; Markin, 2021).

Psychoanalytic Influence. Animal-Assisted Counselling (AAC) originally developed through the informal inclusion of practitioners' bringing their animals into therapy sessions, rather than the result of systematic research, and has been integrated into therapeutic practice since the inception of psychotherapy. Sigmund Freud described dogs as having an innate sense of humans and his chow chow, Jofi, played a meaningful role in Freud's psychoanalysis practice as he often relied on her presence to both ease and assess his patients' mental state (Coren, 1999). Freud frequently commented on Jofi's behavior and mood, suggesting they mirrored dynamics unfolding within the client (Coren, 1999; Grinker, 2013; as cited in Bachi & Parish-Plass, 2016). He is quoted as saying, "Dogs love their friends and bite their enemies, quite unlike people, who are incapable of pure love and always have to mix love and hate in their object-relations" (Raczkowska, 2019, para. 5) which relates directly to the concept of object relations. Object relations in psychoanalysis are the study of how early relationships with caregivers are internalized and shape a person's emotions, behavior, and later relationships.

The Modern Era: Dr. Boris Levinson. The modern conceptualization of Animal-Assisted Counselling (AAC) is widely credited to Dr. Boris Levinson, a child psychologist who observed in the 1950s that his pet dog Jingles helped a young client become more relaxed and willing to communicate during sessions (Hartwig, 2021). In an unplanned encounter, Levinson noticed that

the child, typically silent and withdrawn during therapy, began interacting and speaking to Jingles (Hartwig, 2021). This moment led Levinson to recognize the potential therapeutic benefits of incorporating dogs into counselling sessions (Fine, 2019).

Dr. Levinson first shared his observations on the positive impact of animals in the therapeutic process at the 1961 conference of the American Psychological Association, later expanding on these insights through several books and articles (Bachi & Parish-Plass, 2016). His seminal 1962 article, *The Dog as "Co-therapist*, was the first published work by a licensed mental health professional to explore the therapeutic potential of the human-animal bond which he coined "pet therapy" (Fine et al., 2019, para. 7, Fung et al, 2024). His initial lectures were received with skepticism and ridicule, and Levinson originally resisted engaging his dog in therapy as he feared including Jingles would be regarded too unconventional despite anecdotal experience and valuable outcome (Fine et al., 2019; Mallon, 1994). Levinson's observations were later proven to be correct, and he became known as the "Father of Animal Assisted Therapy" (Fine et al., 2019; Mallon, 1994).

Empirical Expansion. In the 1970s, Samuel and Elizabeth O'Leary Corson were among first researchers to conduct research on canine-assisted interventions in psychiatric settings (Fine et al., 2019; Fung et al., 2024). Corson's observations revealed that interactions with dogs facilitated communication among patients and staff, including individuals who were otherwise nonverbal, when integrated into daily programming (Fine et al., 2019; Fung et al., 2024). They coined the term "social lubricant" to describe how the presence of a therapy animal eased social barriers, promoting engagement and interpersonal connection (Fine et al., 2019; Fung et al., 2024). The warmth generated through human-animal interaction was seen as a crucial element in

establishing a therapeutic alliance, laying important groundwork for the integration of animal-assisted interventions within mental health care.

The Human-Animal Bond

This section explores the human-animal bond, outlining its definition and significance, and examines how animals are integrated into therapeutic interventions to support client wellbeing.

Definition and Significance

Animals and human relationships have been intertwined since the beginning of time. This is especially so with pets, who have long cohabited together with humans in a reciprocal relationship of companionship, loyalty and love. While initially pets were kept for pragmatic purposes, such as providing food and clothes, the advantages of the human-animal bond for health soon became widely recognized (Shipman, 2010). Leo Bustad and Michael McCulloch first used the phrase "human–animal bond" in the late 1970s (Hines, 2003). They used this word to represent its proximity to the mother-infant bond, a relationship that is also mutually essential and beneficial. According to American Veterinary Medical Association (2025), this bond is a dynamic relationship that is influenced by behaviors essential to the health and wellbeing of both animals and people. The characteristics of the human-animal bond parallel those observed in secure attachment, shaping an individual's capacity for social engagement and effective interpersonal functioning (Purewal et al., 2017).

Therapeutic Implications

Within therapeutic contexts, the human-animal bond promotes an attachment bond where the animals function as a "secure base", allowing clients to safely explore challenging emotions while acting a "safe haven" that offers reassurance and comfort in moments of distress (Fine et

al., 2019; Zilcha-Mano et al., 2012). The therapy pet may extend their “secure base” and “safe haven” to therapists, helping them to stay regulated and providing attunement beneficial to the client’s clinical experience (Zilcha-Mano et al., 2012).

AAC is also grounded in the “biophilia” hypothesis, which posits that humans have evolutionary predisposition to connect with nature and other forms of life (Wilson, 1984; as cited in Nieforth et al., 2021). Research has demonstrated that this innate drive can lessen psychological discomfort and foster a sense of calm (Charry-Sánchez, Pradilla, & Talero-Gutiérrez, 2018). According to a phenomenon called the "biophilia effect" being among animals and tranquil natural settings promotes a sense of security, which in turn enhances emotional regulation and overall wellbeing (Julius et al., 2013). Animals from a biological perspective help to cultivate therapeutic space where clients feel safe to engage more deeply in the counselling process.

Ethical Considerations

Incorporating animals into counselling sessions requires more than affinity for animals; it demands clinical training specific to AAC, adherence to ethical standards, and a commitment to ongoing professional development (Chandler, 2017). Counsellors planning to integrate animals into their practice must be recognize that “adding a sentient being into the therapeutic milieu requires a specialized skill set that includes the knowledge, skills, and attitudes expected to continuously provide and improve the safety and efficacy within the field of AAIs” (Stewart et al., 2013; VanFleet & Faa-Thompson, 2017; as cited in Human-Animal Interactions Ethics Workgroup, 2021, p.1).

Counsellors have a moral duty to work within one’s boundaries of competence and within one’s scope of practice and in alliance with their professional regulatory frameworks

(BCACC, 2023; CCPA, 2020). In Canada, those guidelines include those set out by the British Columbia Association of Clinical Counsellors (BCACC) and the Canadian Counselling and Psychotherapy Association (CCPA). Ethical AAC needs particular training for both people and animals, regular evaluations, and following the recommendations provided by professional groups like the IAHAIO and Association of Animal-Assisted Intervention Professionals (AAAIP) (Winkle et al. 2020; Fine & Griffin, 2022). Practitioners integrating AAC into their work must meet their certification standards while carefully managing issues of liability, including the need for additional insurance coverage, obtaining informed consent and ensuring the safety and welfare of all parties, both human and animal (Trevathan-Minnis et al., 2021). Integrating animals into therapy without this level of care can be risky for ethics, welfare, and professionalism (Chandler, 2017; Fine, 2019).

It is important to point out that there are no accrediting agencies to ensure that counsellors who work with animals practice competently and ethically (Trevathan-Minnis et al., 2021; Winkle et al., 2020). Disparities around terminology, language and standards within this ever-evolving field pose greater risk to the clients, providers, and animals involved for practitioners embarking on this work (Trevathan-Minnis et al., 2021).

Animal Welfare, Safety and Risk Management

Canada does not currently have any regulated standards, leaving it up to individual counsellors or organization to take appropriate action is taken to ensure their AAC competence, particularly in areas of animal behavior, welfare, and communication (CCPA, 2024). In 2022, a Canadian national committee introduced the “National Standard of Canada: Development of a Management System for Animal-Assisted Human Services”, which currently serves as a voluntary guideline rather than a mandatory regulation (CCPA, 2024). Despite the lack of

regulation, the CCPA has made tremendous efforts to standardize the practice through their Animal Assisted Therapy in Counselling Chapter including publishing “Suggested Guidelines for Practice” (CCPA, 2024). Nonetheless, the field is marred by inconsistencies due to a lack of universal guidelines which underscores the need for national regulated standards and consistent ethical frameworks (Collica-Cox & Day, 2021; Johnson et al., 2023).

Registration with a nationally recognized therapy animal organization is one way to uphold minimum standards for evaluating animal temperament and ensuring proper handler training. Hartwig (2021) emphasizes that both the therapy animal and handler require specialized training and evaluation to ensure their suitability for work in a counseling setting, with animal preparation including socialization, touch desensitization, and basic obedience. However, research suggests that many organizations still rely on limited evaluation protocols, such as basic obedience or temperament screenings, which may not capture the complexity of therapy work (Linder et al., 2017).

Without proper AAC training and supervision, practitioners risk harming clients and animals by using unprepared animals, neglecting client consent and animal stress, overlooking health precautions, and failing to integrate animals effectively into therapy (Hartwig, 2021; Trevathan-Minnis et al., 2021). Risk of harm to the client is also especially significant when incorporating AAC techniques into therapy. Counsellors have an ethical obligation to do no harm, bringing an animal into the therapy room brings additional risks including personal injury, allergies, zoonotic disease or infection, fears/phobia, traumatic memories and grief if the therapy animal passes away or ceases their participation (Bert et al, 2016; Dalton et al, 2020; Trevathan-Minnis et al., 2021).

Before including an animal in therapy, informed consent should fully detail any risks (e.g., damage, infection, allergies, contraindications) and be discussed with clients (Compitus, 2021; Bert et al., 2016; Johnson et al., 2023; Trevathan-Minnis et al., 2021). Since therapy dogs are often exposed to diverse environments and client needs, careful matching of animal temperament with handler awareness is essential to safeguard both animal welfare and therapeutic integrity (Winkle et al., 2020). It is important to carefully choose and match animals with a population based on their distinct traits, talents, and interests. Beyond screening for stress, it is equally important to evaluate positive indicators of animal well-being to ensure that therapy animals experience fulfillment in their roles (Miller et al., 2022). Robust models, such as the Delta Society's Pet Partners process, further strengthen ethical practice by assessing both handler education and the handler–animal relationship alongside animal suitability (Chandler, 2017).

The welfare of animal therapy should always be of primary concern (Compitus, 2021). Therapy animals should be regarded as sentient partners, not mere tools, and their welfare held with the same value as all humans (Compitus, 2021; Taylor et al., 2014; Wijnen & Martens, 2022). Ethical practice requires making roles clear (volunteer or professional) and keeping track of their motivation, stress, and well-being (Taylor et al., 2014; Wijnen & Martens, 2022).

If the animal is not well cared for, this will be reflected badly in the therapy sessions and raise the potential for humans or animals to be harmed (Dalton et al., 2020). Counsellors also want to be cautious with employing AAC for individuals who display traits of antisocial personality disorder and may pose a potential risk to the physical or emotional welfare of the therapy animal (Compitus, 2021). Of course, when thinking of animal welfare, we must remember how we speak about our therapy animals (Compitus, 2021). Animal-assisted therapists

will never say that they “use” an animal in therapy because the therapy animal is always considered a co-facilitator that works alongside the human.

Cultural Considerations

Despite the potential for AAC to provide a positive impact for clients with a diverse range of backgrounds regardless of race, sexual orientation or ability, counselors must consider cultural, religious and trauma-related perspective on an individual basis (Compitus, 2021; Fine, 2019; Evans, 2024). People’s experiences with animals are shaped by culture and history.

For some, animals may be linked to past trauma, making it harder to feel comfortable with AAC (Evans, 2024). For others, cultural or religious traditions—such as seeing animals as sacred, restricted, or part of rituals—can influence how they respond to working with animals in therapy (Evans, 2024). Counselors must understand each client’s personal and cultural views about interacting with animals before deciding to implement AAC techniques.

Nervous System Regulation Within AAC

This section examines the role of the nervous system in Animal-Assisted Counseling (AAC), highlighting how physiological processes influence therapeutic outcomes. It explores the application of polyvagal theory in understanding safety and social engagement within therapy, the ways animals act as co-regulators of client and therapist physiology, and the underlying mechanisms through which human-animal interactions support emotional regulation and overall wellbeing.

The Role of the Nervous System in Therapy

Advances in neuroscience over the past few decades have broadened and deepened our knowledge of emotion regulation. A client’s capacity to engage meaningfully in AAC therapy is deeply connected to the state of their nervous system. Through the interaction between the

sympathetic and parasympathetic branches of the autonomic nervous system (ANS), the body can maintain internal balance and respond adaptively to stress. This process is known as nervous system regulation (Porges, 2011; Siegel, 2012). People can participate in interpersonal relationships, manage stress, and preserve emotional stability thanks to this regulation.

As Siegel (2012) observes, “the capacity to regulate internal states is central to mental health” (p. 156). Clients may experience hyperarousal, emotional reactivity, dissociation, or shut down when this system is dysregulated because of ongoing stress, trauma, or early relationship disturbances. These symptoms can all negatively impact therapy participation and overall wellbeing (Siegel, 2012; van der Kolk, 2015).

Neuroscience research supports this connection. Long-term stress and trauma exposure weakens the hippocampus (memory integration), decreases prefrontal cortex function (executive control), and sensitizes the amygdala (fear response), according to research by Perry et al. (1995) and Schore (2002). These alterations make it harder for a person to control their emotions, feel safe, or self-regulate. Interestingly, mental health issues like anxiety, depression, and posttraumatic stress disorder (PTSD) have been connected to this type of dysregulation (Thayer et al., 2012; van der Kolk, 2015; Chrousos, 2009). One physiological marker of dysregulation is heart rate variability (HRV) - a measure of how flexibly the body transitions between activation and calm in response to internal and external (Shaffer & Ginsberg, 2017; Thayer et al., 2012). According to research, individuals with anxiety disorders and PTSD frequently have low HRV, which suggests a decreased ability to return to a regulated state following stress (Beauchaine & Thayer, 2015).

Supporting nervous system regulation is therefore an essential component for effective counselling. Restoring balance in the ANS helps clients feel grounded, improves emotional

control, and fosters readiness for therapeutic engagement. Clients' perceptions of safety, threat, and separation can be better understood by examining the role of the autonomic nerve system (ANS). The autonomic nervous system (ANS) controls involuntary bodily responses. It has two main parts: the sympathetic nervous system, which helps the body get ready for action when it thinks it is in danger, and the parasympathetic nervous system, which helps the body relax and heal (McCorry, 2007; Porges, 2011).

Polyvagal Theory and Therapeutic Safety

Expanding our understanding of the brain's function in social connections is Polyvagal Theory, which proposes that humans and other animals all share a neural circuit, the social engagement system, that is crucial for feeling secure and connected to others (Geller & Porges, 2014). This theory, named after the vagus nerve, distinguishes between two subsystems within the parasympathetic branch: the ventral vagal system, which supports social engagement, safety, and connection; and the dorsal vagal system, which triggers immobilization, collapse, and dissociation in response to danger or extreme stress (Dana, 2018; Porges, 2011).

The nervous system assesses environmental cues of safety, danger, or life threat through an unconscious process called neuroception (Porges, 2011). Neuroception takes place in the brain's more primitive areas, outside of conscious awareness, and initiates automatic physiological reactions that are beneficial in survival (Porges, 2011). Although a threat may not register at the conscious level, neurophysiological mechanisms are activated, priming the body for adaptive behaviors including fight, flight, or freeze (Porges, 2011). This neurobiological scanning system governs whether a person enters defensive or socially engaged states.

The vagus nerve plays a central role in neuroception and is often referred to as the "face-heart connection" (Dana, 2018, p. 21). It communicates signals of safety or threat through the

facial muscles, voice, and heart, shaping how we interact with others. When safety is detected, the parasympathetic branch of the vagus nerve supports calm states, enabling connection, regulation, and openness.

A solid grounding in nervous system control is crucial for clients to gain insight, build trustworthy connections, and participate in meaningful emotional processing (Porges, 2011; Siegel, 2012). Dana (2018) and van der Kolk (2015) found that when individuals feel safe within a ventral vagal state, their bodies can access the higher-order brain activities of reflection, empathy, and integration. This highlights the importance of therapeutic environments—and interventions—that support clients in achieving and sustaining regulations. By providing nonjudgmental presence, tactile comfort, and a sense of calm—all of which promote the physiological conditions necessary for therapeutic change—animals can play a crucial part in this process within AAC (Chandler, 2017; Kruger & Serpell, 2010).

Animals as Co-Regulators

Co-regulation, according to Polyvagal Theory, is a biological process in which one person's nervous system supports the stabilization of another's (Porges, 2011). In therapy, this process is critical for establishing safety, particularly for individuals with trauma histories who may have developed maladaptive emotion regulation strategies that hinder coregulation in human relationships (Schoore, 2002; Siegel, 2012). Creating a sense of safety within the therapeutic relationship is essential to activating the social and emotional brain systems. Within this framework, therapists—and in the case of AAC, therapy animals—can act as regulating partners, helping clients access calmer, more connected physiological states (Dana, 2018).

Therapy animals may function as nonverbal co-regulators, offering a consistent, emotionally safe, and attuned presence. An alternate source of relational support that is less

likely to elicit shame, criticism, or defensiveness may be offered by animals to clients for whom human connections are perceived as unpredictable or dangerous (Schlote, 2019; Tedeschi et al., 2010). Through their soothing physical closeness, relaxed posture, regular breathing, and friendly, gentle eye contact, animals can serve as co-regulators by providing calming cues that communicate 'you are safe here'.

Therapy animals and clients' nonverbal and tactile interactions are essential for fostering reciprocal physiological and emotional control, according to Ng et al. (2015). The ventral vagal system may be triggered by these interactions, which would support emotional stability and a return to a controlled state (Beetz et al., 2012). Yoo et al. (2024) provided neurophysiological evidence that playful, tactile interactions with a therapy dog promote co-regulation in AAC settings elicited distinct EEG patterns linked to relaxation and positive emotion. According to recent research by Koskela et al. (2024), synchronized changes in heart rate variability and activity levels show that emotional and physiological states are co-modulated during human–dog interactions. These findings offer empirical support for the concept of co-regulation in AAC, where both the client and the animal influence each other's nervous system states in real time.

Chandler (2017) highlights the special dynamic of the therapist-animal-client trio in the therapeutic process, where co-regulation is improved via rhythmic, relational engagement and shared emotional resonance. In ways that trauma survivors may otherwise feel uncomfortable, this triadic relationship enables the animal to buffer emotional distance and promote connection. Furthermore, Ng et al. (2021) stress the significance of reciprocal regulation in moral AAC practice, pointing out that attentiveness to the physiological and emotional states of both human and animal participants is necessary for efficient co-regulation.

The social engagement system (SES), a crucial neurophysiological process involved in co-regulation. The muscles of the face, head, and heart that provide reciprocal communication through body posture, voice tone, and facial expression are part of the SES, which is controlled by the ventral vagal complex (Porges, 2011).

Many domesticated animals - particularly dogs and horses, offer similar cues of safety through their body language, eye contact, and movement patterns. These cues may assist clients transition from protective states into receptivity, curiosity, and presence by activating the same brain pathways that underlie human-to-human interaction (Carter & Porges, 2016; Julius et al., 2013). In AAC, the animal's capacity to provide these regulatory cues in a steady, sensitive way may make it easier to reach the client's ventral vagal state, therefore promoting important therapeutic objectives including emotional processing, involvement, and anchoring.

However, while the concept of human-animal co-regulation is compelling, it has not yet been empirically validated (Schlote, 2019; Fine, 2019). This lack of definitive evidence does not suggest the absence of such a process - it simply points to the need for further research. Nonetheless, the consistent therapeutic value reported in human-animal relationships offers strong indication that animals can play a meaningful role in relational healing.

Physiological Mechanisms

The oxytocin system is another significant physiological mechanism relevant to Animal-Assisted Counselling (AAC). Oxytocin, often referred to as a “feel-good” hormone, plays a critical role in fostering relaxation, trust, emotional stability, and prosocial behavior. It also contributes to mitigating the effects of stress and trauma on the brain and body, while supporting resilience against future stressors (Sharma et al., 2020). For individuals with trauma histories—

who may have had limited access to safe touch and relational closeness—oxytocin release through safe connection can help regulate stress responses and promote healing.

Spending time with animals has been shown to increase oxytocin levels, contributing to an overall sense of well-being (Compitus, 2021). These effects may be amplified when therapeutic engagement involves physical contact, such as gentle touch or proximity. In a study by Odendaal and Meintjes (2003), participants experienced elevated oxytocin levels after stroking a dog for five to 24 minutes. Multiple studies reinforce oxytocin's role in AAC: stroking a familiar dog elevates human oxytocin (Handlin et al., 2011); mutual gaze initiates an oxytocin-positive feedback loop in both dog and human participants (Nagasawa et al., 2015); and touch-rich equine interventions promote oxytocin release and parasympathetic activation (Rigby, 2023). AAC can benefit a wide range of clients in this regard, but it may be particularly meaningful for individuals with trauma-related disruptions to the oxytocinergic system—a pattern observed in those with chronic stress or early relational wounds (Donadon et al., 2018).

In contrast to oxytocin, cortisol is a hormone associated with the body's stress response, released during states of threat or emotional dysregulation. While cortisol serves an important survival function, chronically elevated levels—common in individuals with trauma histories—can lead to impaired immune function, disrupted sleep, anxiety, and emotional dysregulation (McEwen, 2007). Research has shown that interaction with therapy animals may reduce cortisol levels, helping clients shift from a state of heightened arousal to one of calm and emotional safety as was also observed in the 2003 dog stroking study (Odendaal & Meintjes, 2003).

Further studies have supported the positive impact of therapy animal interventions on stress hormone; Pendry and Vandagriff (2019) reported that short sessions with therapy dogs led to a measurable reduction in salivary cortisol among university students, while Meints et al.

(2022) reported similar effects among school-aged children in a dog-assisted intervention. Additional research has reinforced how AAC can positively impact cortisol levels in special populations: older adults with Alzheimer’s disease experienced a progressive reduction in salivary cortisol when engaged in AAT sessions adapted from reality orientation therapy, indicating decreased neuroendocrine stress alongside improvements in mood and cognition although long term results are less clear (Menna et al., 2019); and children ages 7-9 with ADHD saw higher cortisol reductions during psychosocial intervention sessions when conducted alongside animal-assisted interventions indicating an impact on acute HPA axis reactivity and regulation (Schuck et al., 2024).

As outlined by Fine (2019), several controlled studies have demonstrated the impact of therapeutic animals in blood and salivary cortisol—highlighting the immediate impact of AAC on HPA axis activation. Compitus (2021) adds that subjective reports of calmer and better emotional states during animal engagement frequently correspond with such cortisol decreases.

The Therapeutic Alliance in ACC

This section explores the role of the therapeutic alliance in Animal-Assisted Counselling (AAC), emphasizing the central importance of the client-therapist relationship in achieving positive clinical outcomes. It examines how incorporating animals into therapy can strengthen the alliance by fostering affective attunement, supporting the development of a triadic relationship among clients, therapist, and animal, and providing additional relational resources for clients with disrupted attachment histories. The discussion highlights the ways AAC can enhance trust, engagement, and emotional connection within the therapeutic process.

Importance of the Therapeutic Relationship

The therapeutic alliance is broadly understood to be one of the most essential components of effective counselling process, and “refers to the holistic collaborative aspects of the therapist–client relationship” (Flückiger et al., 2018, p. 317). Although there are many different ways to conceptualize the therapeutic alliance, it is generally understood to be the working relationship between the client and the therapist that has three key features: the cooperative nature of the relationship, the affective connection between the patient and the therapist, and the ability of the patient and therapist to agree on therapy goals and interventions (Horvath, 2001; Flückiger et al., 2012; Martin, et al., 2000; Stubbe, 2018).

Within the therapeutic process, the working bond is “the cornerstone of the entire process” that is fundamental to achieving favorable results (Opland & Tarrico, 2024). The therapeutic relationship, also known as known as the rapport (Price, 2017), is built upon collaboration and trust between the client and therapist. By providing a secure environment that is based on mutual respect, empathy, and a nonjudgmental attitude, the relationship offers clients a safe space to environment for clients to freely explore and address their challenges, fostering personal growth and healing (Opland & Tarrico, 2024). Stubbe (2018) highlights this, pointing out that alliance quality and treatment results are consistently correlated across a range of modalities and demographics.

More recent research also shows that the alliance and symptom improvement are interrelated—early therapeutic gains can strengthen the alliance, which in turn supports continued progress (Flückiger et al., 2020). According to Baier et al. (2020), the therapeutic alliance often serves as a mediator of change, bolstering the idea that the therapeutic relationships quality is not only correlated with but also contributes actively to successful treatment outcomes.

How AAC Enhances the Alliance. The presence of a therapy animal can play an important role in building a strong alliance by fostering trust and openness within the therapeutic relationship. Companion animals are largely seen as friendly and dependable beings whose positive attributes benefit the client-therapist relationship and the establishment of the therapeutic alliance (Levy & Lancia, 2016).

While relational work with animals is not a good fit for all people or clients, studies have shown that, overall, engaging in a therapeutic relationship with animals supports mental and emotional well-being (Kesner & Pritzker, 2008, as cited in Trevathan-Minnis et al., 2021) and that clients are more likely to engage in therapeutic interactions when an animal is present (Trevathan-Minnis et al., 2021).

For many clients, especially those who find it difficult to connect in traditional talk therapy, a dog's warm and nonjudgmental presence can help create a sense of safety and comfort (Brodie & Biley, 1999; Wesley et al., 2009; Beetz et al., 2012). When compared to a group of clients who did not have a therapy animal present during treatment sessions, Wesley et al. (2009) discovered that integrating AAC enhanced the clients' assessment of the quality of the therapeutic alliance.

Schneider and Harley (2006) found that having a companion animal present during therapy can improve clients' overall perceptions of their therapist and make them more willing to open up about personal information, particularly when their initial impression of the therapist was less favorable and for individuals who may be apprehensive or uncomfortable with counselling. Their experimental study specifically looked at psychotherapists, with or without a therapy dog present, and found that participants' overall opinions about pets did not substantially influence their judgments of the therapist in the presence of a dog indicating that the positive

influence of a dog in the therapeutic setting is broadly applicable and not limited to pet enthusiasts. Additional research has generated mixed evidence, with the presence of an animal on therapeutic alliance unclear with no consistent positive result indicating this is an area warranting further research (Creary, 2017; Goldmann et al., 2015).

Clients may interpret the presence of a therapy animal as an indicator of the therapist's trustworthiness by association (i.e., *if the therapist can take excellent care of this animal, then they will take good care of me*) and the client may feel safer and secure in treatment with the counsellor (Compitus, 2021). Integrating a therapy animal into the therapeutic process may enhance the trust, warmth, and acceptance that are essential to effective treatment (Compitus, 2021).

A therapy animal can also serve as a shared focus of attention, which helps ease initial awkwardness, reduce anxiety, and encourage engagement in the session. These moments of connection—both with the animal and through the therapist—can deepen the client's sense of being understood and supported, which is at the heart of a strong therapeutic alliance (Parish-Plass, 2013).

Affective Attunement in Triadic Relationship. Geller and Greenberg (2012) contend that therapist attunement and presence are critical for establishing a strong therapeutic alliance, instilling a sense of safety and connection, and promoting effective therapeutic results. According to their findings, a therapist's capacity to be completely present with a client while simultaneously being aware of their own internal experiences and the intricacy of the therapeutic connection is critical to establishing a healing environment.

Attunement is a transactional, dynamic process that can take place in any relational dyad (Ostlund et al., 2017; Seligman, 2020) and entails two interrelated processes happening; first, sensing or perceiving the other's internal states; and then secondly, communicating that understanding – i.e. responding in alignment, often unconsciously, via non-verbal behaviour (Samuelsson & Rosberg, 2018). It is a two-way, unconscious connection between nervous systems (Geller & Porges, 2014) that provides the experience which Siegel (2007) described as "feeling felt" (p. 25).

Attunement facilitates relational experiences that feel safe, understood, and deeply connected, allowing clients to trust and engage with therapeutic work in a more authentic way (Håvås et al., 2015). When an individual feels understood in this way, their physiology calms and their nervous system becomes regulated (Geller & Porges, 2014).

Consistent with these ideas, Lac and Walton (2012) outline how animal assisted counselling can embody gestalt therapy principles through co-created interactions between client, therapist, and animal. In this process, the therapy animal serves an active participant who contributes present moment insight into the quality of relationship engagement. This allows clients to experience a natural synthesis of mind and body, thought and feeling, spontaneity and conscious self-regulation, which deepens their understanding of relationship patterns and responsibilities. By broadening the relational field and fostering a sense of connectedness that goes beyond the traditional dyad, the therapy animal can help attune and strengthen the therapeutic alliance.

Using an animal within counselling reshapes the essence of the therapeutic interaction itself, beyond the moment-to-moment attunement, including an animal in therapy reshapes the

nature of the therapeutic interaction itself. AAC entails an alliance that extends beyond the traditional therapist and client dyad model and introduces a triadic relational structure (Chandler, 2017; Parish-Plass, 2013). As an active participant in the session, the therapy animal helps create purpose and connection within the counselling process (Fine, 2019; Kruger & Serpell, 2010).

By projecting, confiding in, or seeking reassurance from the animal, new emotional communication channels open which provide valuable insights into the client's relational patterns and attachment needs (Parish-Plass, 2008; Tedeschi et al., 2015). In this way, the animal may serve as a bridge between the client and the therapist in this way, encouraging assurance and emotional openness, particularly for individuals overwhelmed with direct interpersonal relationships (Walsh, 2009; Wesley et al., 2009).

The triadic alliance also supports mutual regulation within the system: as the client connects with the animal, the therapist can attune to both and use the interaction as a point of reflection or intervention within the therapeutic process (Beetz et al., 2012; Geller & Porges, 2014).

ACC and Disrupted Attachment. The therapeutic alliance takes on particular importance for clients with histories of trauma. People who have gone through trauma, particularly in their early years, are more likely to have a disturbed attachment process, which can lead to insecure or disorganized attachment styles (Lahousen et al., 2019). Throughout an individual's life, these attachment patterns are strongly associated with the likelihood of more traumatic experiences and profound psychological trauma symptoms, especially for

individuals with disordered attachment (Barazzone et al., 2019, Woodhouse et al, 2015, Zvi & Rachimi, 2024).

Polyvagal theory states that trauma and attachment patterns have an enormous effect on an individual's capacity to feel safety within relationships and capacity for emotional regulation (Porges, 2011). Working with insecure and disorganized attachment throughout the counselling process necessitates a therapeutic alliance to ensure the client's desire to engage and the overall efficacy of the treatment.

From this perspective, the therapeutic relationship itself becomes a reparative experience—offering consistency, attunement, and the possibility of forming new relational patterns (Slade & Holmes, 2019). Animal-assisted counselling (AAC) may enhance this process through the animal co-facilitator, who functions as an accessible, nonjudgmental attachment figure that provides firm, unbiased support and help traumatized clients engage more fully in the therapeutic process (Compitus, 2021). Over time, this enriched alliance—between client, therapist, and animal—may contribute to rewiring neural pathways involved in attachment and regulation, potentially interrupting intergenerational cycles of trauma (Romano et al., 2021).

Counselling is grounded in exploring the client's emotional and relational needs through the therapeutic relationship. In AAC, multiple relational layers exist simultaneously; as Bachi & Parish-Plass (2016) observed, the inclusion of animals in therapy extends this process by offering opportunities, in the here-and-now, to process past relational wounds, recognize and modify maladaptive patterns, and practice more adaptive forms of connection.

Nonetheless, when supporting clients with significant attachment difficulties, it is important to use AAC carefully. A client may form an attachment to the therapy animal so strongly that termination or the animal's absence could evoke feelings of loss or abandonment. As Compitus (2021) emphasizes, it is important for counsellors to encourage the development of self-reliance and help clients generalize new relational capacities beyond the therapy context.

Enhancing Therapist Capacity for Regulation. The therapist's ability to regulate and be present is an essential but often dismissed aspect of the therapeutic alliance within AAC. The therapist's capacity to stay grounded, aware, and truly present establishes the framework for safety and connection, as stressed by Geller and Greenberg (2012).

Counsellors often note an animal's relaxed nature and fluid, tactile features enable them to remain composed, particularly when working with emotionally charged or trauma-focused clients (Chandler, 2017; Fine, 2019; Kruger & Serpell, 2010). The presence of the animal may serve as a quiet co-regulator that benefits the therapist in addition to the client (Kruger & Serpell, 2010; O'Haire, 2013) highlighting the therapeutic triad's reciprocal nature of regulation. This dynamic relationship illustrates embodied safety while strengthening the working alliance (McCardle et al., 2011).

The therapy animal can also mitigate the emotional burden placed on the professional counselor. By offering physical sympathy and comfort to the client that supports their relational and affective needs, the animal complements the therapist's role without compromising the professional boundaries and professional ethics (Fine, 2019; Parish-Plass, 2013).

Stewart et al. (2013) notes that nearly all the practitioners within their study reported that having a therapy animal in the room enhanced the counseling relationship and heightened the counselor's levels of empathy, congruence, and unconditional positive regard for the client. Additionally, by encouraging a sense of shared attunement and positive affect during the session, the animal may lessen counselor stress and compassion fatigue (Martinez, 2019; McCardle et al., 2011).

Summary

In this chapter I explored the literature surrounding several areas related to modality of animal assisted counselling: including an overview of AAC, therapeutic adaptability, history of AAC, the human-animal bond in addition to ethical and cultural considerations; neurobiology, including the nervous system regulation with AAC, polyvagal theory and therapeutic safety, animals as coregulators, oxytocin and therapeutic engagement and cortisol and stress regulation in AAC.

Lastly, I explored how the therapeutic relationship can be enhanced within the context of AAC; with specific consideration to the importance of the therapeutic relationship, how AAC impacts the therapeutic alliance, affect attunement within AAC, the triadic relationship within AAC and how AAC may enhance the therapist capacity was discussed.

This literature review indicates that AAC is versatile modality that provides an opportunity to significantly impact an individual's healing capacity on a physiological, social and emotional realms. Animals may provide more access to feeling good and engaging more within recovery work while also mitigating the impact on the counsellor.

In chapter three I will integrate the literature from this chapter to provide an outline of workshop for counsellors, current and future, who would like to explore utilizing the human-animal bond within their clinical practice.

Chapter 3: Discussion and Application

This capstone examined the healing potential of leveraging the human–animal bond within counselling and asked how animal-assisted counselling could benefit clients in meaningful clinical ways. While animals were increasingly used in therapeutic settings, their integration as a formal intervention remained insufficiently understood. In response, this project explored the history, mechanisms, and best practices of animal-assisted counselling, with particular attention to ethical and cultural considerations, neurobiological impacts informed by polyvagal theory, and the role of the human–animal bond in strengthening the therapeutic alliance. The capstone concluded with a proposed workshop for counsellors interested in incorporating this modality into practice, offering insight into how animals could enhance regulation, safety, and connection within the therapeutic relationship, particularly for clients experiencing nervous system dysregulation or relational challenges.

Discussion

Counsellors are increasingly adopting innovative modalities that go beyond standard talk therapy to better address clients experiencing complex mental health concerns, trauma, and disrupted nervous system regulation. While verbal psychotherapy is well supported empirically, many individuals struggle to engage fully due to difficulties with emotional regulation, safety, and trust (Cook et al., 2017; Cronin et al., 2020; Levine, 2010).

The literature reviewed highlights that therapeutic engagement is not solely a cognitive process but is deeply shaped by neurobiological states of safety and autonomic regulation. When clients experience chronic dysregulation, their capacity for reflection, connection, and emotional processing is significantly compromised (Porges, 2011; van der Kolk, 2015). Supporting nervous system regulation has therefore been identified as a cornerstone of effective counselling, as

clients must feel sufficiently safe to participate meaningfully in therapy (Fogel, 2009; Porges & Dana, 2018).

Animal-Assisted Counselling (AAC) has emerged as a promising modality that may enhance this sense of safety and engagement through the unique relational qualities of the human–animal bond. Research indicates that interactions with animals can support stress reduction, co-regulation, and emotional presence, while also strengthening the therapeutic alliance—particularly for clients who struggle with trust or relational vulnerability (Fine, 2019; Flückiger et al., 2020).

At the same time, the literature emphasizes that AAC requires careful ethical consideration, therapist competence, and attention to animal welfare. Without adequate training and structure, the integration of animals into counselling settings may pose risks related to boundaries, safety, and misattunement (IAHAIO, 2018). Despite increasing clinical interest, formal education on how to ethically and effectively implement AAC remains limited within counselling training programs.

Application

In response to this gap, this capstone proposes a structured workshop designed for counselling students and early-career counsellors who are interested in incorporating Animal-Assisted Counselling into their clinical work. The proposed workshop emphasizes not only how animals can be integrated into counselling, but why they may be therapeutically beneficial—grounding practice in an understanding of nervous system regulation, the therapeutic alliance, and ethical responsibility.

The goal of the workshop is to equip participants with a foundational understanding of AAC, including its clinical mechanisms, ethical considerations, and practical applications, while

encouraging reflective and relationally attuned practice. By translating research into accessible, practice-oriented learning, this chapter aims to support counsellors in thoughtfully expanding their therapeutic toolkit in ways that enhance safety, engagement, and healing for both clients and animals involved.

The proposed workshop is intentionally structured to reflect the core themes identified in the literature review. Each session corresponds to a key mechanism through which Animal-Assisted Counselling has been shown to support therapeutic engagement and outcomes, including conceptual clarity, the human–animal bond, nervous system regulation, therapeutic alliance, and ethical responsibility (Fine, 2019; Porges, 2011; Flückiger et al., 2020; IAHAIO, 2018). By organizing the workshop in this way, the training aims to bridge theory and practice while promoting safe, reflective, and ethically grounded clinical use of AAC.

The workshop will be broken into four distinct areas to ensure all essential information is provided adequate coverage and participants complete the workshop with the thorough understanding of the fundamentals of this nuanced modality. These areas include foundations and orientation; neurobiology and regulation; relational mechanisms and the therapeutic alliance; and ethics, culture, and professional responsibility. Each session is intentionally designed to mirror the key mechanisms identified in the literature review as central to effective Animal-Assisted Counselling. A complete breakdown of the workshop agenda is provided in Appendix A. Below is a short description of each theme:

Foundations & Orientation

This area of the workshop sets out to provide both a conceptual clarity and scope regarding AAC and then expanding upon the establishing clear terminology and historical grounding by establishing a theoretical framework through examination of the human-animal

bond as the primary mechanism. To adequately cover all the essential literature, this area is divided into two sessions.

Neurobiology & Regulation

This session of the workshop examines the neurobiological justification of AAC and how physiological safety and autonomic regulation is essential for therapeutic engagement, and how these mechanisms are embodied within AAC.

Relational Mechanisms & Alliance

This session of the workshop examines the relational mechanisms within AAC and the ways in which it may enhance alliance formation while simultaneously providing enhanced regulation for the therapist.

Ethics, Culture, & Responsibility

This session of the workshop examines the professional responsibility & risk management within AAC, which are central to ensuring that this modality is practised with ethically and responsibly for all parties involved.

Considerations

For participants to experience the benefits of AAC directly—particularly the human–animal bond—it is important that experiential activities are woven into the workshop to complement the academic literature. Incorporating experiential components allows participants to engage with AAC in a meaningful way and to reflect on how the presence of an animal may influence felt safety, regulation, and relational connection.

To support this experiential learning, it is recommended that the workshop be facilitated by an experienced AAC practitioner who is well-established in the field and has access to a trained therapeutic animal. The Canadian Counselling and Psychotherapy Association's *Animal-*

Assisted Therapy in Counselling chapter may serve as a useful resource for identifying qualified AAC practitioners who not only practise the modality but are also engaged in advancing ethical and legal standards within this still largely unregulated area of practice.

While the BCACC “Find a Counsellor” search tool indicates that numerous practitioners identify Animal-Assisted Therapy as a modality they offer, there is currently no regulatory body ensuring consistent training in the mechanisms, ethics, and legal considerations unique to AAC. As such, it is recommended that due diligence be exercised when selecting an instructor for this workshop.

Experiential Activities

Given the academic nature of the workshop, the experiential activities are designed to be observational, reflective and choice-based while also mirroring some of the core mechanisms within AAC rather than solely therapeutic in nature. Activities are intended to strengthen participants’ understanding of regulation, relational dynamics and ethical responsibility specifically within AAC while ensuring both their and the animal’s safety.

Choice-Based Animal Interaction Exercise. This activity focuses on the consent and choice for human and animals by facilitator explaining these concepts and then providing participants the choice (if they agree) to sit near the animal, observe the animal’s behaviours and gently interact if the animal initiates. The activity is then followed up with a discussion on boundaries, respecting an animal’s cues and how these parallels to the client’s life in terms of choice, agency and pacing. Session fit within Human-Animal Bond (could also work within Ethics’ session).

Observing Felt Sense in the Presence of Animal. This activity invites participants to sit quietly in the same room as the animal to build awareness of regulation, neuroception and safety

without forcing interaction in the way of touch or engagement with the animal. Reflection prompts include: What do you notice in your body? Any shifts in your breathing, tension, or attention? How do they show affection to you and how do you like it? How does that compare with humans? What feels different compared to a human-only learning space? Session fit within Nervous System Regulation (could also work within Human-Animal Bond session).

Triadic Relationship Mapping. This activity focuses on exploration of the therapeutic triad relationship unique to AAC by having the participants gather in small groups of therapist, client and animal. The activity is then followed up with a discussion on boundaries, respecting an animal's cues and how these parallels to the client's life in terms of choice, agency and pacing. Reflection prompts include: Where regulation might flow? Where misattunement could occur? How the therapist's own regulation matters? Session fit within Therapeutic Alliance.

Limitations to this Capstone

There is considerable potential in utilizing the human–animal bond for therapeutic benefit within clinical practice; however, as an evolving field, much of the existing research remains limited in scope and lacks standardized research methodologies. As noted by Fine (2019) and Chandler (2017), research in animal-assisted interventions remains methodologically diverse, with inconsistencies in terminology, ethical standards, and training requirements, which presents challenges in drawing definitive conclusions about the efficacy and mechanisms of animal-assisted counselling (AAC).

Additionally, much of the available research on the human–animal bond and AAC as a distinct modality is concentrated in the United States, with comparatively limited Canadian-based literature. This geographic concentration may limit the applicability of findings to the

Canadian counselling context, particularly given differences in professional regulation, ethical guidelines, and healthcare systems.

While efforts were made to include literature involving a range of animals, the majority of existing research focuses primarily on dogs and horses, highlighting a gap in the literature related to other species used in therapeutic contexts. Finally, although care was taken to approach the literature with as much impartiality as possible, I acknowledge a personal bias toward therapy dogs, informed by my own experience as a dog owner. Researcher reflexivity is essential in scholarly inquiry, and this awareness is important to acknowledge when interpreting and synthesizing the literature.

Conclusions

We are living in a time where individuals mental health needs are becoming increasingly complex and call for more nuanced approaches to working with distress. Since the beginning of time, man and animals have existed in an advantageous relationship with one another. For many individuals, animals provide a sense of embodied safety and safety within the relationship that is often not accessible in the outside world.

This capstone provides therapists with insight into the modality of animal-assisted counselling and how it leverages the human-animal bond, drawing upon foundations of Polyvagal theory and the therapeutic alliance. Through this exploration, therapists are invited to consider how thoughtfully integrating animals may help address the mental health needs of their clients.

References

- AVMA. (2025). *The human-animal interaction and human-animal bond*. American Veterinary Medical Association. <https://www.avma.org/resources-tools/avma-policies/human-animal-interaction-and-human-animal-bond>
- Bachi, K., & Parish-Plass, N. (2016). Animal-assisted psychotherapy: a unique relational therapy for children and adolescents. *Clinical Child Psychology and Psychiatry*, 22(1), 3-8. <https://doi.org/10.1177/1359104516672549>
- B.C. Association of Clinical Counsellors. (2023). *Code of Ethical Conduct*. <https://bcacc.ca/code-of-ethical-conduct-and-standards-of-clinical-practice>
- Baier, A. L., Kline, A. C., & Feeny, N. C. (2020). Therapeutic alliance as a mediator of change: A systematic review and evaluation of research. *Clinical Psychology Review*, 82(1), 101921. <https://doi.org/10.1016/j.cpr.2020.101921>
- Barazzone, N., Santos, I., McGowan, J., & Donaghay-Spire, E. (2018). The links between adult attachment and post-traumatic stress: A systematic review. *Psychology and Psychotherapy: Theory, Research and Practice*, 92(1), 131–147. <https://doi.org/10.1111/papt.12181>
- Beauchaine, T. P. (2015). Respiratory sinus arrhythmia: A transdiagnostic biomarker of emotion dysregulation and psychopathology. *Current Opinion in Psychology*, 3, 43–47. <https://doi.org/10.1016/j.copsy.2015.01.017>

- Beauchaine, T. P., & Thayer, J. F. (2015). Heart rate variability as a transdiagnostic biomarker of psychopathology. *International Journal of Psychophysiology*, *98*(2), 338–350.
<https://doi.org/10.1016/j.ijpsycho.2015.08.004>
- Beetz, A. M. (2017). Theories and possible processes of action in animal assisted interventions. *Applied Developmental Science*, *21*(2), 139–149.
<https://doi.org/10.1080/10888691.2016.1262263>
- Beetz, A., Uvnäs-Moberg, K., Julius, H., & Kotrschal, K. (2012). Psychosocial and psychophysiological effects of human-animal interactions: The possible role of oxytocin. *Frontiers in Psychology*, *3*(234). <https://doi.org/10.3389/fpsyg.2012.00234>
- Bert, F., Gualano, M. R., Camussi, E., Pieve, G., Voglino, G., & Siliquini, R. (2016). Animal assisted intervention: A systematic review of benefits and risks. *European Journal of Integrative Medicine*, *8*(5), 695–706. <https://doi.org/10.1016/j.eujim.2016.05.005>
- Brodie, S. J., & Biley, F. C. (1999). An exploration of the potential benefits of pet-facilitated therapy. *Journal of Clinical Nursing*, *8*(4), 329–337. <https://doi.org/10.1046/j.1365-2702.1999.00255.x>
- Butler, E. A., & Randall, A. K. (2012). Emotional coregulation in close relationships. *Emotion Review*, *5*(2), 202–210. <https://doi.org/10.1177/1754073912451630>
- Canadian Counselling and Psychotherapy Association. (2020). *CCPA 2020 code of ethics (PDF)*. <https://www.ccpa-accp.ca/wp-content/uploads/2020/05/CCPA-2020-Code-of-Ethics-E-Book-EN.pdf>
- Canadian Counselling and Psychotherapy Association. (2024). *CCPA AAT-C Suggested Guidelines for Practice (Animal-Assisted Therapy in Counselling Chapter) [PDF]*. <https://www.ccpa-accp.ca/wp-content/uploads/2024/12/CCPA-AAT-C-Guidelines-for->

Practice-English.pdf

- Carter, C. S., & Porges, S. W. (2013). The biochemistry of love: An oxytocin hypothesis. *EMBO Reports*, *14*(1), 12–16. <https://doi.org/10.1038/embor.2012.191>
- Chandler, C. K. (2017). *Animal-Assisted therapy in counseling* (3rd ed.). Routledge.
- Chandler, C. K. (2024). *Animal-Assisted therapy in counseling* (4th ed.). Routledge.
- Charry-Sánchez, J. D., Pradilla, I., & Talero-Gutiérrez, C. (2018). Animal-assisted therapy in adults: A systematic review. *Complementary Therapies in Clinical Practice*, *32*(32), 169–180. <https://doi.org/10.1016/j.ctcp.2018.06.011>
- Chrousos, G. P. (2009). Stress and disorders of the stress system. *Nature Reviews Endocrinology*, *5*(7), 374–381. <https://doi.org/10.1038/nrendo.2009.106>
- Collica-Cox, K., & Day, G. J. (2021). Dogs as therapeutic partners, not therapeutic tools: Ethical considerations for AAT in the correctional setting. *Social Sciences*, *10*(11), 432. <https://doi.org/10.3390/socsci10110432>
- Compitus, K. (2021). The process of integrating animal-assisted therapy into clinical social work practice. *Clinical Social Work Journal*, *49*(1), 1–9. <https://doi.org/10.1007/s10615-019-00721-3>
- Cook, S. C., Schwartz, A. C., & Kaslow, N. J. (2017). Evidence-based psychotherapy: Advantages and challenges. *Neurotherapeutics*, *14*(3), 537–545. <https://doi.org/10.1007/s13311-017-0549-4>
- Coren, S. (1999). *Sigmund dog – Excerpt from What do dogs know?* https://www.stanleycoren.com/e_sigmund.htm
- Creary, P. (2017, March). *The influence of the presence of a dog or cat on perceptions of a psychotherapist*. <http://hdl.handle.net/1807/77778>

- Cronin, C., Forsstrom, M., & Papageorge, N. (2020). What good are treatment effects without treatment? Mental health and the reluctance to use talk therapy. *National Bureau of Economic Research*. <https://doi.org/10.3386/w27711>
- Dalton, K. R., Waite, K. B., Ruble, K., Carroll, K. C., DeLone, A., Frankenfield, P., Serpell, J. A., Thorpe, R. J., Morris, D. O., Agnew, J., Rubenstein, R. C., & Davis, M. F. (2020). Risks associated with animal-assisted intervention programs: A literature review. *Complementary Therapies in Clinical Practice*, *39*, 101145. <https://doi.org/10.1016/j.ctcp.2020.101145>
- Dana, D. (2018). *The polyvagal theory in therapy: Engaging the rhythm of regulation*. W.W. Norton & Company.
- de Soet, R., Vermeiren, R. R. J. M., Bansema, C. H., van Ewijk, H., Nijland, L., & Nootboom, L. A. (2023). Drop-out and ineffective treatment in youth with severe and enduring mental health problems: A systematic review. *European Child & Adolescent Psychiatry*, *33*(10). <https://doi.org/10.1007/s00787-023-02182-z>
- Donadon, M. F., Martin-Santos, R., & Osório, F. de L. (2018). The associations between oxytocin and trauma in humans: A systematic review. *Frontiers in Pharmacology*, *9*. <https://doi.org/10.3389/fphar.2018.00154>
- Evans, J. J. (2024). Assessing cultural, religious, and trauma influences in human-animal interactions for effective animal-assisted counseling. *Animals*, *14*(17), 2496. <https://doi.org/10.3390/ani14172496>
- Fine, A. (2024). *Handbook on animal-assisted therapy* (A. Fine, M. Mueller, Z. Ng, T. Chastain Griffin, & P. Tedeschi, Eds.; 6th ed.). Academic Press.
- Fine, A. H., Beck, A. M., & Ng, Z. (2019). The state of animal-assisted interventions:

- Addressing the contemporary issues that will shape the future. *International Journal of Environmental Research and Public Health*, 16(20), 3997.
<https://doi.org/10.3390/ijerph16203997>
- Fine, A. H. (Ed.). (2019). *Handbook on animal-assisted therapy: Foundations and guidelines for animal-assisted interventions* (5th ed.). Academic Press.
- Fine, A. H., & Griffin, T. C. (2022). Protecting animal welfare in animal-assisted intervention: Our ethical obligation. *Seminars in Speech and Language*, 43(01), 008-023.
<https://doi.org/10.1055/s-0041-1742099>
- Flinn, M. V., Thum, E., Lau, I., Srinivasan, S., Kanchwala, Z., Varghese, C., Ang, K., & Schweiger, B. C. (2025). Cortisol and psychological responses to natural disasters. *Psychoneuroendocrinology*, 177, 107474.
<https://doi.org/10.1016/j.psyneuen.2025.107474>
- Florea, T., Palimariciuc, M., Cristofor, A. C., Dobrin, I., Chiriță, R., Bîrsan, M., Dobrin, R. P., & Pădurariu, M. (2022). Oxytocin: Narrative expert review of current perspectives on the relationship with other neurotransmitters and the impact on the main psychiatric disorders. *Medicina*, 58(7), 923. <https://doi.org/10.3390/medicina58070923>
- Flückiger, C., Del Re, A. C., Wampold, B. E., & Horvath, A. O. (2018). The alliance in adult psychotherapy: A meta-analytic synthesis. *Psychotherapy*, 55(4), 316–340.
<https://doi.org/10.1037/pst0000172>
- Flückiger, C., Del Re, A. C., Wampold, B. E., Symonds, D., & Horvath, A. O. (2012). How central is the alliance in psychotherapy? A multilevel longitudinal meta-analysis. *Journal of Counseling Psychology*, 59(1), 10–17. <https://doi.org/10.1037/a0025749>
- Flückiger, C., Rubel, J., Del Re, A. C., Horvath, A. O., Wampold, B. E., Crits-Christoph, P.,

- Atzil-Slonim, D., Compare, A., Falkenström, F., Ekeblad, A., Errázuriz, P., Fisher, H., Hoffart, A., Huppert, J. D., Kivity, Y., Kumar, M., Lutz, W., Muran, J. C., Strunk, D. R., & Tasca, G. A. (2020). The reciprocal relationship between alliance and early treatment symptoms: A two-stage individual participant data meta-analysis. *Journal of Consulting and Clinical Psychology, 88*(9), 829–843. <https://doi.org/10.1037/ccp0000594>
- Fogel, A. (2009). *The psychophysiology of self-awareness: Rediscovering the lost art of body sense*. W.W. Norton & Company.
- Fung, A., Mok, P., & Fung, W. K. (2024). The rich history and evolution of animal-assisted therapy. *Journal of Alternative, Complementary & Integrative Medicine, 10*(1), Article 443. <https://doi.org/10.24966/ACIM-7562/100443>
- Gazzola, N., & Iwakabe, S. (2022). Psychotherapy failures: To err is human. *Counselling Psychology Quarterly, 35*(4), 719–723. <https://doi.org/10.1080/09515070.2022.2142383>
- Geller, S. M., & Greenberg, L. S. (2012). *Therapeutic presence: A mindful approach to effective therapy*. American Psychological Association. <https://doi.org/10.1037/13485-000>
- Geller, S. M., & Porges, S. W. (2014). Therapeutic presence: Neurophysiological mechanisms mediating feeling safe in therapeutic relationships. *Journal of Psychotherapy Integration, 24*(3), 178–192. <https://doi.org/10.1037/a0037511>
- Goldmann, K. M., Hatfield, D. R., & Terepka, A. (2015). The potential influence of a companion-animal's presence on aspects of the therapeutic alliance. *Anthrozoös, 28*(4), 661–672. <https://doi.org/10.1080/08927936.2015.1070009>
- Handley, V. A. (2021). *Using solution-focused brief therapy and animal-assisted therapy with sexual minorities: A pilot microanalysis study*. *Journal of Systemic Therapies, 40*(4), 67–80. <https://doi.org/10.1521/jsyt.2021.40.4.67>

- Handley, V., Jordan, S., Fife, S., & Turns, B. (2021). Using solution-focused brief therapy and animal-assisted therapy with sexual minorities: A pilot microanalysis study. *Journal of Systemic Therapies, 40*(4), 67–87. <https://doi.org/10.1521/jsyt.2021.40.4.67>
- Handlin, L., Hydbring-Sandberg, E., Nilsson, A., Ejdebäck, M., Jansson, A., & Uvnäs-Moberg, K. (2011). Short-term interaction between dogs and their owners: Effects on oxytocin, cortisol, insulin and heart rate—an exploratory study. *Anthrozoös, 24*(3), 301–315. <https://doi.org/10.2752/175303711x13045914865385>
- Hartwig, E. K. (2016). Animal-Assisted counseling academy: Frequently asked questions. Texas State University Animal-Assisted Counseling Academy. <https://aac-academy.clas.txstate.edu/faq.htm>
- Hartwig, E. K. (2017). Building solutions in youth: Evaluation of the human-animal resilience therapy intervention. *Journal of Creativity in Mental Health, 12*(4), 468-481. <https://doi.org/10.1080/15401383.2017.1283281>
- Hartwig, E. K. (2021). Advancing the practice of animal-assisted counseling through measurable standards. *Journal of Creativity in Mental Health, 16*(4), 482–498. <https://doi.org/10.1080/15401383.2020.1792382>
- Håvås, E., Svartberg, M., & Ulvenes, P. (2015). Attuning to the unspoken: The relationship between therapist nonverbal attunement and attachment security in adult psychotherapy. *Psychoanalytic Psychology, 32*(2), 235–254. <https://doi.org/10.1037/a0038517>
- Hines, L. M. (2003). Historical perspectives on the human-animal bond. *American Behavioral Scientist, 47*(1), 7–15. <https://doi.org/10.1177/0002764203255206>
- Hoagwood, K. E., Acri, M., Morrissey, M., & Peth-Pierce, R. (2016). Animal-assisted therapies for youth with or at risk for mental health problems: A systematic review. *Applied*

- Developmental Science*, 21(1), 1–13. <https://doi.org/10.1080/10888691.2015.1134267>
- Horvath, A. O. (2001). The therapeutic alliance: Concepts, research and training. *Australian Psychologist*, 36(2), 170–176. <https://doi.org/10.1080/00050060108259650>
- Human–Animal Interactions Ethics Workgroup. (2021). *Summary of Considerations for APA Ethical Standards Competencies in Animal-Assisted Interventions*. Human-Animal Interaction APA Division 17, Section 13. <https://www.human-animal-interaction.org/wp-content/uploads/2021/01/Summary-of-Considerations-for-APA-Ethical-Standards-.pdf>
- International Association of Human-Animal Interaction Organizations (IAHAIO). (2018). *The IAHAIO definitions for animal assisted intervention and guidelines for wellness of animals involved in AAI* (White Paper, 2014 updated for 2018) [PDF]. <https://iahaio.org/wp/wp-content/uploads/2021/01/iahaio-white-paper-2018-english.pdf>
- Jalongo, M. R., & Guth, L. J. (2022). Animal-Assisted counseling for young children: Evidence base, best practices, and future prospects. *Early Childhood Education Journal*, 51. <https://doi.org/10.1007/s10643-022-01368-5>
- Johnson, A., Cameron, P., & Trevathan-Minnis, M. (2023). Determining consistency in the attitudes and actions of providers of animal-assisted services regarding their alignment with standards and ethical practice. *Human-Animal Interactions*. <https://doi.org/10.1079/hai.2023.0026>
- Jones, M. G., Rice, S. M., & Cotton, S. M. (2019). Incorporating animal-assisted therapy in mental health treatments for adolescents: A systematic review of canine assisted psychotherapy. *PLOS ONE*, 14(1). <https://doi.org/10.1371/journal.pone.0210761>
- Julius, H., Beetz, A., Kotrschal, K., Turner, D., & Uvnäs-MobergK. (2012). *An integrative view of human-animal relationships with implications for therapeutic practice*. Hogrefe

Publishing.

- Kemp, A. H., & Quintana, D. S. (2013). The relationship between mental and physical health: Insights from the study of heart rate variability. *International Journal of Psychophysiology*, *89*(3), 288–296. <https://doi.org/10.1016/j.ijpsycho.2013.06.018>
- Knox, S., Miller, C., Twidwell, R. E., & Knowlton, G. (2022). Client perspectives on psychotherapy failure. *Psychotherapy Research*, *33*(3), 298–315. <https://doi.org/10.1080/10503307.2022.2110020>
- Koskela, A., Törnqvist, H., Somppi, S., Tiira, K., Kykyri, V.-L., Hänninen, L., Kujala, J., Nagasawa, M., Kikusui, T., & Kujala, M. V. (2024). Behavioral and emotional co-modulation during dog–owner interaction measured by heart rate variability and activity. *Scientific Reports*, *14*(1). <https://doi.org/10.1038/s41598-024-76831-x>
- Kruger, K. A., & Serpell, J. A. (2010). Animal-assisted interventions in mental health: Definitions and theoretical foundations. In A. H. Fine (Ed.), *Handbook on animal-assisted therapy: Theoretical foundations and guidelines for practice* (3rd ed., pp. 33–48). Academic Press.
- Lac, V., & Walton, R. (2012). Companion animals as assistant therapists: embodying our animal selves. *British Gestalt Journal*, *21*(1), 32–39. <https://www.britishgestaltjournal.com/shop/volume-21-1-2012-1>
- Levine, P. A. (2010). *In an unspoken voice: How the body releases trauma and restores goodness*. North Atlantic Books.
- Levinson, B. M. (1969). *Pet-oriented child psychotherapy*. Charles C Thomas.
- Levy, T. A., & Lancia, J. (2016). Why do therapists partner with animals in the psychotherapeutic process? A theoretical exploration. In A. Höing & A. Matamona

- Bennett (Eds.), *Humans and Animals: Intersecting Lives and Worlds* (pp. 135–146). Brill.
https://doi.org/10.1163/9781848884090_013
- Linder, D. E., Siebens, H. C., Mueller, M. K., Gibbs, D. M., & Freeman, L. M. (2017). Animal-assisted interventions: A national survey of health and safety policies in hospitals, eldercare facilities, and therapy animal organizations. *American Journal of Infection Control, 45*(8), 883–887. <https://doi.org/10.1016/j.ajic.2017.04.287>
- Lowe, L., Fearon, D., Adenwala, A., & Wise Harris, D. (2024). *The state of mental health in Canada 2024: Mapping the landscape of mental health, addictions and substance use*. Canadian Mental Health Association. <https://cmha.ca/wp-content/uploads/2024/11/CMHA-State-of-Mental-Health-2024-report.pdf>
- Mallon, G. P. (1994). A generous spirit: the work and life of Boris Levinson. *Anthrozoös, 7*(4), 224–231. <https://doi.org/10.2752/089279394787001790>
- Markin, H. (2021). Animals as a therapeutic modality in psychiatry. *WRIT: Journal of First-Year Writing, 4*(1). <https://doi.org/10.25035/writ.04.01.03>
- Martinez, M. (2019). *The impact of traditional therapies, creative therapies, and canine-assisted psychotherapy on counselor burnout in mental health counseling* [Doctoral Dissertation, University of Nevada]. <https://scholarwolf.unr.edu/items/23138d11-98cd-4497-ae33-cbbee0de32f6>
- McCardle, P., McCune, S., Griffin, J. A., & Maholmes, V. (Eds.). (2011). *How animals affect us: Examining the influences of human–animal interaction on child development and human health*. American Psychological Association.
- McCorry, L. K. (2007). Physiology of the autonomic nervous system. *American Journal of Pharmaceutical Education, 71*(4), 78. <https://doi.org/10.5688/aj710478>

- McEwen, B. S. (2007). Physiology and neurobiology of stress and adaptation: Central role of the brain. *Physiological Reviews*, *87*(3), 873–904.
<https://doi.org/10.1152/physrev.00041.2006>
- Meints, K., Brelsford, V. L., Dimolareva, M., Maréchal, L., Pennington, K., Rowan, E., & Gee, N. R. (2022). Can dogs reduce stress levels in school children? Effects of dog-assisted interventions on salivary cortisol in children with and without special educational needs using randomized controlled trials. *PLOS ONE*, *17*(6), e0269333.
<https://doi.org/10.1371/journal.pone.0269333>
- Menna, L. F., Santaniello, A., Gerardi, F., Sansone, M., Di Maggio, A., Di Palma, A., Perruolo, G., D'Esposito, V., & Formisano, P. (2019). Efficacy of animal-assisted therapy adapted to reality orientation therapy: Measurement of salivary cortisol. *Psychogeriatrics*, *19*(5), 510–512. <https://doi.org/10.1111/psyg.12418>
- Miller, S. L., Serpell, J. A., Dalton, K. R., Waite, K. B., Morris, D. O., Redding, L. E., Dreschel, N. A., & Davis, M. F. (2022). The importance of evaluating positive welfare characteristics and temperament in working therapy dogs. *Frontiers in Veterinary Science*, *9*. <https://doi.org/10.3389/fvets.2022.844252>
- Nagasawa, M., Mitsui, S., En, S., Ohtani, N., Ohta, M., Sakuma, Y., Onaka, T., Mogi, K., & Kikusui, T. (2015). Oxytocin-gaze positive loop and the coevolution of human-dog bonds. *Science*, *348*(6232), 333–336. <https://doi.org/10.1126/science.1261022>
- Nandam, L. S., Brazel, M., Zhou, M., & Jhaveri, D. J. (2020). Cortisol and major depressive disorder—translating findings from humans to animal models and back. *Frontiers in Psychiatry*, *10*(10). <https://doi.org/10.3389/fpsy.2019.00974>
- Ng, Z., Albright, J., Fine, A. H., & Peralta, J. (2015). Our ethical and moral responsibility:

- Ensuring the welfare of therapy animals. In A. H. Fine (Ed.), *Handbook on animal-assisted therapy: Theoretical foundations and guidelines for animal-assisted interventions (4th ed., pp. 357–376)*. Academic Press. <https://doi.org/10.1016/B978-0-12-801292-5.00026-2>
- Nieforth, L. O., et al. (2021). *Animal-assisted interventions for autism spectrum disorder: A systematic review*. *Journal of Autism and Developmental Disorders*, 51(4), 1234–1247. <https://doi.org/10.1007/s10803-020-04694-2>
- Odendaal, J. S. J., & Meintjes, R. A. (2003). Neurophysiological correlates of affiliative behaviour between humans and dogs. *The Veterinary Journal*, 165(3), 296–301. [https://doi.org/10.1016/s1090-0233\(02\)00237-x](https://doi.org/10.1016/s1090-0233(02)00237-x)
- O’Haire, M. E., Guérin, N. A., & Kirkham, A. C. (2015). Animal-assisted intervention for trauma: A systematic literature review. *Frontiers in Psychology*, 6. <https://doi.org/10.3389/fpsyg.2015.01121>
- Opland, C., & Torrico, T. J. (2024, October 6). *Psychotherapy and therapeutic relationships*. National Library of Medicine; StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK608012/>
- Ostlund, B. D., Measelle, J. R., Laurent, H. K., Conrads, E., & Ablow, J. C. (2016). Shaping emotion regulation: Attunement, symptomatology, and stress recovery within mother-infant dyads. *Developmental Psychobiology*, 59(1), 15–25. <https://doi.org/10.1002/dev.21448>
- Pandey, R. P. (2024). *The Role of Animal-Assisted Therapy in Enhancing Patients' Well-being*. *JMIRx Med*, 5, e51787. <https://doi.org/10.2196/51787>
- Parish-Plass, N. (2013). *Animal-assisted psychotherapy: Theory, issues, and practice*. Purdue

University Press.

Pendry, P., & Vandagriff, J. L. (2019). Animal visitation program (AVP) reduces cortisol levels of university students: A randomized controlled trial. *AERA Open*, 5(2), 233285841985259. <https://doi.org/10.1177/2332858419852592>

Perry, B. D., Pollard, R. A., Blakley, T. L., Baker, W. L., & Vigilante, D. (1995). Childhood trauma, the neurobiology of adaptation, and “use-dependent” development of the brain: How “states” become “traits.” *Infant Mental Health Journal*, 16(4), 271–291. [https://doi.org/10.1002/1097-0355\(199524\)16:4<271::aid-imhj2280160404>3.0.co;2-b](https://doi.org/10.1002/1097-0355(199524)16:4<271::aid-imhj2280160404>3.0.co;2-b)

Pichot, T., & Coulter, M. (2007). *Animal-assisted brief therapy: A solution-focused approach*. Routledge.

Porges, S. W. (2011). *The Polyvagal theory: Neurophysiological foundations of emotions, attachment, communication, and self-regulation*. W. W. Norton & Company.

Porges, S. W., & Dana, D. (2018). *Clinical applications of the polyvagal theory: The emergence of polyvagal-informed therapies*. W. W. Norton & Company.

Price, B. (2017). Developing patient rapport, trust and therapeutic relationships. *Nursing Standard*, 31(50), 52–63. <https://doi.org/10.7748/ns.2017.e10909>

Purewal, R., Christley, R., Kordas, K., Joinson, C., Meints, K., Gee, N., & Westgarth, C. (2017). Companion animals and child/adolescent development: A systematic review of the evidence. *International Journal of Environmental Research and Public Health*, 14(3), 234. <https://doi.org/10.3390/ijerph14030234>

Rackowska, E. (2019, October 14). *Was Freud more of a dog person than a cat person?* Freud Museum London. <https://www.freud.org.uk/2019/10/14/was-freud-more-of-a-dog-person-than-a-cat-person/>

- Rigby, B. R. (2023). Characterizing stress during animal interaction: A focus on the human endocrine response during equine-assisted services. *Frontiers in Veterinary Science, 10*. <https://doi.org/10.3389/fvets.2023.1303354>
- Romano, G., Patrascu, D., Priyanka Tharian, & Burbridge-James, W. (2021). The neurobiology of attachment and the influence of psychotherapy: a literature review. *British Journal of Psychiatry Open, 7*(S1), S285–S285. <https://doi.org/10.1192/bjo.2021.759>
- Roy, D. D., & Dey Tapader, A. (2025). A narrative literature review on the effectiveness of psychotherapy. *Mind and Society, 13*(04), 7–14. <https://doi.org/10.56011/mind-mri-134-20242>
- Samuelsson, B., & Rosberg, S. (2018). Nonverbal affect attunement in mentalization-based treatment for patients with borderline personality disorder. *Body, Movement and Dance in Psychotherapy, 13*(2), 100–113. <https://doi.org/10.1080/17432979.2018.1447015>
- Schlote, S. M. (2019). Neuroception and the role of the therapy animal as a social buffer in animal-assisted therapy: Exploration of a polyvagal perspective. In *Handbook on animal-assisted therapy: Foundations and guidelines for animal-assisted interventions* (pp. 5th ed., 57-63). Academic Press.
- Schneider, M. S., & Harley, L. P. (2006). How dogs influence the evaluation of psychotherapists. *Anthrozoös, 19*(2), 128–142. <https://doi.org/10.2752/089279306785593784>
- Schore, A. N. (2002). Dysregulation of the right brain: A fundamental mechanism of traumatic attachment and the psychopathogenesis of posttraumatic stress disorder. *Australian & New Zealand Journal of Psychiatry, 36*(1), 9–30. <https://doi.org/10.1046/j.1440-1614.2002.00996.x>
- Schuck, S. E. B., Zeiler, C. N., Stehli, A., Steinhoff, L. A., Stokes, R. Y., Jeffrey, S. E., &

- Granger, D. A. (2024). Acute salivary cortisol response in children with ADHD during psychosocial intervention with and without therapy dogs. *Frontiers in Psychiatry, 15*, 1476522. <https://doi.org/10.3389/fpsyt.2024.1476522>
- Serpell, J. A. (2017). The historical and cultural significance of the human–animal bond. In L. Kogan & A. Blazina (Eds.), *Clinician’s guide to treating companion animal issues* (pp. 9–20). Academic Press.
- Seligman, S. (2020). Affects, attunements and the intersubjective self: Perspectives from early development. *Ricerca Psicoanalitica, 31*. <https://doi.org/10.4081/rp.2020.211>
- Shaffer, F., & Ginsberg, J. P. (2017). An overview of heart rate variability metrics and norms. *Frontiers in Public Health, 5*, 258. <https://doi.org/10.3389/fpubh.2017.00258>
- Sharma, S. R., Gonda, X., Dome, P., & Tarazi, F. I. (2020). What’s love got to do with it: Role of oxytocin in trauma, attachment and resilience. *Pharmacology & Therapeutics, 214*, 107602. <https://doi.org/10.1016/j.pharmthera.2020.107602>
- Shipman, P. (2010). The animal connection and human evolution. *Current Anthropology, 51*(4), 519–538. <https://doi.org/10.1086/653816>
- Siegel, D. J. (2012). *The developing mind: How relationships and the brain interact to shape who we are* (2nd ed.). Guilford Press.
- Slade, A., & Holmes, J. (2019). Attachment and psychotherapy. *Current Opinion in Psychology, 25*(25), 152–156. <https://doi.org/10.1016/j.copsyc.2018.06.008>
- Statista. (2025). Household pets in Canada [Forecast]. Statista. Retrieved November 24, 2025, from <https://www.statista.com/forecasts/1466531/household-pets-in-canada>
- Statistics Canada. (2022, May 20). Survey on mental health and stressful events, August to December 2021. <https://www150.statcan.gc.ca/n1/daily-quotidien/220520/dq220520b->

eng.htm

- Stewart, L. A., Chang, C. Y., & Rice, R. (2013). Emergent theory and model of practice in animal-assisted therapy in counseling. *Journal of Creativity in Mental Health, 8*(4), 329–348. <https://doi.org/10.1080/15401383.2013.844657>
- Stubbe, D. E. (2018). The therapeutic alliance: The fundamental element of psychotherapy. *Focus, 16*(4), 402–403. <https://doi.org/10.1176/appi.focus.20180022>
- Taylor, N., Fraser, H., Signal, T., & Prentice, K. (2014). Social work, animal-assisted therapies and ethical considerations: A programme example from Central Queensland, Australia. *British Journal of Social Work, 46*(1), 135–152. <https://doi.org/10.1093/bjsw/bcu115>
- Tedeschi, P. J., Fine, A. H., & Helgeson, J. I. (2010). Assistance animals: Their evolving role in psychiatric service applications. In *Handbook on animal-assisted therapy: Theoretical foundations and guidelines for practice (3rd. ed)* (pp. 315–330). Academic Press.
- Thayer, J. F., Åhs, F., Fredrikson, M., Sollers, J. J., & Wager, T. D. (2012). A meta-analysis of heart rate variability and neuroimaging studies: Implications for heart rate variability as a marker of stress and health. *Neuroscience & Biobehavioral Reviews, 36*(2), 747–756. <https://doi.org/10.1016/j.neubiorev.2011.11.009>
- Trevathan-Minnis, M., Johnson, A., & Howie, A. R. (2021). Recommendations for transdisciplinary professional competencies and ethics for animal-assisted therapies and interventions. *Veterinary Sciences, 8*(12), 303. <https://doi.org/10.3390/vetsci8120303>
- Tschuschke, V., Koemeda-Lutz, M., von Wyl, A., Cramer, A., & Schulthess, P. (2021). The impact of clients' and therapists' characteristics on therapeutic alliance and outcome. *Journal of Contemporary Psychotherapy, 52*(52). <https://doi.org/10.1007/s10879-021-09527-2>

- van der Kolk, B. (2015). *The body keeps the score: Brain, mind and body in the healing of trauma*. Penguin Books.
- van Houtert, E. A. E., Endenburg, N., Wijnker, J. J., Rodenburg, B., & Vermetten, E. (2018). The study of service dogs for veterans with Post-Traumatic Stress Disorder: a scoping literature review. *European Journal of Psychotraumatology*, 9(3), 1503523. <https://doi.org/10.1080/20008198.2018.1503523>
- Velde, B. P., Cipriani, J., & Fisher, G. (2005). Resident and therapist views of animal-assisted therapy: Implications for occupational therapy practice. *Australian Occupational Therapy Journal*, 52(1), 43–50. <https://doi.org/10.1111/j.1440-1630.2004.00442.x>
- Villafaina-Domínguez, B., Collado-Mateo, D., Merellano-Navarro, E., & Villafaina, S. (2020). Effects of dog-based animal-assisted interventions in prison population: A systematic review. *Animals*, 10(11). <https://doi.org/10.3390/ani10112129>
- Walsh, F. (2009). Human-Animal bonds I: The relational significance of companion animals. *Family Process*, 48(4), 462–480. <https://doi.org/10.1111/j.1545-5300.2009.01296.x>
- Wesley, M. C., Minatrea, N. B., & Watson, J. C. (2009). Animal-Assisted therapy in the treatment of substance dependence. *Anthrozoös*, 22(2), 137–148. <https://doi.org/10.2752/175303709x434167>
- White, J. H., Quinn, M., Garland, S., Dirkse, D., Wiebe, P., Hermann, M., & Carlson, L. E. (2015). Animal-assisted therapy and counseling support for women with breast cancer: An exploration of patient's perceptions. *Integrative Cancer Therapies*, 14(5), 460–467. <https://doi.org/10.1177/1534735415580678>
- Wijnen, B., & Martens, P. (2022). Animals in animal-assisted services: Are they volunteers or professionals? *Animals*, 12(19), 2564. <https://doi.org/10.3390/ani12192564>

- Winkle, M., Johnson, A., & Mills, D. (2020). Dog welfare, well-being and behavior: Considerations for selection, evaluation and suitability for animal-assisted therapy. *Animals*, *10*(11), 2188. <https://doi.org/10.3390/ani10112188>
- Woodhouse, S., Ayers, S., & Field, A. P. (2015). The relationship between adult attachment style and post-traumatic stress symptoms: A meta-analysis. *Journal of Anxiety Disorders*, *35*(1), 103–117. <https://doi.org/10.1016/j.janxdis.2015.07.002>
- Yoo, O., Wu, Y., Jin Soo Han, & Park, S.-A. (2024). Psychophysiological and emotional effects of human–dog interactions by activity type: An electroencephalogram study. *PLOS ONE*, *19*(3), e0298384–e0298384. <https://doi.org/10.1371/journal.pone.0298384>
- Zilcha-Mano, S., Mikulincer, M., & Shaver, P. R. (2012). Pets as safe havens and secure bases: The moderating role of pet attachment orientations. *Journal of Research in Personality*, *46*(5), 571–580. <https://doi.org/10.1016/j.jrp.2012.06.005>
- Zoetis. (2023, October 17). *The human–animal bond stretches across the globe* [Video]. YouTube. <https://youtu.be/TNZnOKGatE4>
- Zorn, J. V., Schür, R. R., Boks, M. P., Kahn, R. S., Joëls, M., & Vinkers, C. H. (2017). Cortisol stress reactivity across psychiatric disorders: A systematic review and meta-analysis. *Psychoneuroendocrinology*, *77*, 25–36. <https://doi.org/10.1016/j.psyneuen.2016.11.036>
- Zvi, L., & Rachimi, A. (2024). Adult attachment style perceived social support, and post-traumatic stress among female victims of sexual assault. *International Journal of Clinical and Health Psychology*, *24*(3), 100481. <https://doi.org/10.1016/j.ijchp.2024.100481>

Appendix A

SESSION	THEME & TOPIC	MATERIAL COVERED
Session 1 (Part A)	Foundations & Orientation Introduction to Animal-Assisted Counselling	<ul style="list-style-type: none"> • Defining Animal-Assisted Counselling • Therapeutic Adaptability & Applications of AAC • Historical Foundations of AAC
Session 1 (Part B)	Foundations & Orientation Human Animal Bond	<ul style="list-style-type: none"> • Definition and significance • Theoretical Implications • Biophilia Hypothesis • Experiential Activity: <i>Choice-Based Animal Interaction Exercise</i>
Session 2	Neurobiology & Regulation Nervous System Regulation Within AAC	<ul style="list-style-type: none"> • The Role of the Nervous System in Therapy • Polyvagal Theory & Therapeutic Safety • Animals as co-regulators • Physiological Mechanisms • Experiential Activity: <i>Observing Felt Sense in the Presence of Animal</i>
Session 3	Relational Mechanisms & Alliance Therapeutic Alliance Within AAC	<ul style="list-style-type: none"> • The Importance of the Therapeutic Relationship • How AAC Enhances the Alliance • Affect Attunement in Triadic Relationship • AAC and Disrupted Attachment • How AAC Enhances Therapist Regulation • Experiential Activity: <i>Triadic Relationship Mapping</i>
Session 4	Ethics, Culture, and Responsibility Ethical Considerations Unique to AAC	<ul style="list-style-type: none"> • Ethical Considerations • Animal Welfare, Safety and Risk Management • Cultural Considerations