THE ROLE OF COUNSELOR TRAINEES' CO-REGULATED MINDFULNESS: A CLUSTER-RANDOMIZED CONTROLLED STUDY

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Mindfulness is a practice that has the potential to help counseling students build a variety of skills that are necessary for clinical efficacy, including therapeutic presence, attunement, empathy, cognitive flexibility, and non-reactivity. However, mindfulness is rarely taught to students in mental health training programs, which makes it an untapped possibility to improve counselor education. Additionally, rarely do researchers explore the role of counselor mindfulness and counselor trauma on clients' perceptions of therapeutic presence. Therefore, the purpose of this study is to explore the effects of a 15-week mindfulness training program for counseling students to understand its effect on client's perceptions of therapeutic presence, counselor state mindfulness development, and counselor trauma symptoms. Participants in this cluster-randomized controlled intervention were masters counseling students currently enrolled in clinical practicum accredited by the Counsel for the Accreditation of Counseling and Related Educational Programs (CACREP). Counselors provided data at three timepoints on their state mindfulness, trauma symptoms, and therapeutic presence. Clients provided data at three timepoints on their perceptions of their counselor's therapeutic presence. We analyzed data through repeated measures ANOVA and two-level longitudinal hierarchical linear models. Implications for counselor education, professional counselor development, and future research are offered and limitations are discussed.

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CHAPTER 1

INTRODUCTION

The purpose of this study is to explore how integrating mindfulness training into a master's counseling student practicum class influences client's perceptions of therapeutic presence, counseling student mindfulness, and counseling student trauma. Researchers continue to strive to understand characteristics of effective counselors (Avera, 2017; Allen, 1967; Freud, 1923/1961; Fauth & Williams, 2005; Genç & Şahin, 2020; Granello, 2010; Little et al., 2005; Perls, 1973; Pieterse et al., 2013; Rogers, 1957; 1961; Scott, 1962; Wilkinson et al., 2020). The most commonly referenced characteristics are empathy (Elliott et al., 2018; Lambert, 1992; Rogers, 1957;1961; Wampold, 2001; 2005), congruence/genuineness (Klein et al., 2001; Kolden et al., 2011; 2018; Rogers 1957; 1961;), unconditional positive regard (Ridge et al., 2003; Rogers, 1957; 1961; Wilkins, 2000), psychological openness (Allen, 1967; Freud, 1923/1961), cognitive flexibility (Dajani & Uddin, 2015; Dennis & Vander Wal, 2010; Genç & Şahin, 2020), cognitive complexity (Choate & Granello, 2006; Granello, 2010; Little et al., 2005; Martinez & Dong, 2020; Simmons, 2008; Spengler & Strohmer, 1994; Wilkinson & Dewell, 2019; Wilkinson et al., 2020), self-awareness (Abney, 2002; Baştemur & Uçar, 2022; Campbell & Christopher, 2012; Fauth & Williams, 2005; Glenn et al., 2015; Hernández et al., 2010; Pieterse et al., 2013; Şimşir, 2021; Yontef, 1993), presence (Geller, 2003; Geller & Greenberg, 2002), and attunement (Coyne et al., 2021; Feiner-Homer, 2016; Macaulay et al. 2007; Siegel, 2010). These traits appear to moderate the efficacy of the therapeutic relationship.

The importance of exploring characteristics of effective counselors cannot be overstated given the implications on therapeutic presence and client outcomes. For example, Greason and Welfare (2013) argue that scholars in counselor education overfocus on teaching students theory

and skill development to the detriment of more introspective techniques that are fundamental in building quality therapeutic relationships, relational presence, and client outcomes. The links between counselor personal development and the capacity to build effective therapeutic relationships and maintain presence are more clearly outlined in neurobiological models of psychotherapy that directly address the function of relational attunement in therapeutic outcomes, such as the research on intersubjectivity (Schore, 2021). Researchers describe intersubjectivity as the brain science of human interaction (Schore, 2021), most specifically in parent/infant interactions. Intersubjectivity is the right-brain to right-brain connection between parent and child that involves parental attunement and response to the infant's nonverbal cues to promote healthy neural development and subsequent emotional regulation. Schore (and others) describe intersubjectivity as a neuroscience-backed justification of attachment theory – a concept introduced by Bowlby (1988) to explain various infant responses to parents (e.g., anxious, avoidant, secure, disorganized), which relate to relational safety. Building from the paradigm shift offered by intersubjectivity, interpersonal neurobiology (IPNB) is a neuroscience-backed conceptualization of human relationships that hinges on the importance of presence, self-awareness, and relational attunement in facilitating co-regulation and is considered a primary factor in therapeutic relationships (Siegel, 2010). Interpersonal neurobiology is pan-theoretical, meaning it can be applied to various approaches such as child development, family/romantic relationships, workplace interactions, or counseling relationships. What intersubjectivity and interpersonal neurobiology have in common are the links between presence, non-verbal attunement, and stronger relationships via the process of co-regulation, making this model a useful strategy for improving counselor training.

Standard ways of measuring the efficacy of counselor training include clinical assessments such as the counselor competencies scale (e.g., Lambie et al., 2018), academic criteria such as the skilled counselor training model (e.g., Little et al., 2005) and accreditation standards such as those outlined by the Council for the Accreditation of Counseling and Related Educational Programs (CACREP, 2016). However, Greason and Welfare (2013) argue that these assessment methods rarely if ever include assessment of personal development characteristics such as presence, attunement, or co-regulation strategies and typically lean toward theoretical and practical skills development (e.g., reflecting, paraphrasing, openness to feedback) and academic criteria (e.g., multicultural competence, professionalism, etc.). Thus, more research is needed in assessment methods that directly link personal development to effective counselor strategies and their role in maintaining therapeutic presence.

When considering what promotes effective counselor characteristics, it is also vital to explore barriers to effective trait development and how counselor education programs can work to better understand limitations and mitigate deficiencies. Barriers include anything that interferes with the development of effective characteristics, particularly struggles with empathy (Decety & Lamm, 2006), genuineness (Kolden et al., 2018), cognitive flexibility (Dennis & Vander Wal, 2010), cognitive complexity (Wilkinson & Dewell, 2019), self-awareness (Fauth & Williams, 2005), presence (Siegel, 2010), and attunement (Siegel 2019). While myriad circumstances may influence the rate and development (or impairment) of these characteristics, researchers consistently identify trauma and attachment disorders as stymying factors (e.g., Siegel, 2010). Thus, counselor educators may explore strategies to improve counselor efficacy by understanding the rates and impact of trauma and attachment disorders in their students and its potential impact clinical skills, the working relationship, and therapeutic presence.

One option for developing effective counselor traits may be through mindfulness training. Mindfulness is considered both a way of being in the world and a specific practice of conscious skills development (Shapiro & Carlson, 2017). Skills developed through mindfulness mirror nearly every characteristic identified in effective counselors (Barner & Barner, 2011; Bohecker & Horn, 2016; Bourgault & Dionne, 2019; Fauth & Williams, 2005; Feiner-Homer, 2016; Goonetilleke, 2017; Joseph et al., 2016; Koole et al., 2009; Martinez & Dong, 2020; Siegel, 2010), and can be easily integrated into counselor education through theoretical and practical instruction of interpersonal neurobiology (IPNB: Siegel, 2010). Bridging theory and practice of mindfulness may be necessary to better highlight its value in counselor education. Additionally, mindfulness may also reduce barriers to effective counselor trait development, such as counselor trauma (Kachadourian et al. 2021), and attachment disorders (Shaver et al., 2007; Stevenson et al., 2017). At first glance, concerns about counseling student trauma history or symptoms may appear to be a fringe issue; yet Black and colleagues (1993) explored rates of trauma in graduate students entering the helping professions (e.g., social work, psychology, counseling), and found that 30-50% of them had markers for developmental trauma, including history of physical and sexual abuse, family mental illness and suicide, substance abuse, and others. These numbers are striking and point to the need to address rates of trauma in counseling students due to the way trauma may impair presence and attunement (Siegel, 2010). Therefore, the purpose of this study is to explore how mindfulness training may improve traits of effective counseling, reduce barriers to trait development, and improve therapeutic presence to establish co-regulation.

Statement of the Problem

Training effective counselors is the goal of counselor education, as can be seen from myriad assessments of counselor effectiveness (Eriksen & McAuliffe, 2011), models of training

(Pieterse et al., 2013), and accreditation standards (CACREP, 2016). However, these methods do not adequately assess counselor personal development (e.g., Greason & Welfare, 2013), which means that more strategies are needed to fully understand the development of traits of effective counselors and their function in cultivating therapeutic relationships through presence, attunement, and co-regulation (Schore, 2021; Siegel, 2010). Co-regulation within psychological contact situates the counselor in a position of power as the neuroarchitect (Baldini et al., 2014), responsible for establishing client safety through verbal and nonverbal relational attunement (Schore & Schore, 2008). Additionally, relational attunement requires a great degree of therapeutic presence (Geller et al., 2010; Siegel, 2010), which that can be developed with mindfulness training (Baker, 2015). Barriers to adequate therapeutic presence, attunement, and co-regulation include trauma and attachment disorders, which are also improved through mindfulness training (Siegel, 2010). Thus, it is hypothesized that more mindful counselors will have better strategies for facilitating attunement and engaging in co-regulation via improved therapeutic presence. Thus far, very little experimental research exists on the relationship between counselor mindfulness and therapeutic presence as a factor in client outcomes with the exception of Avera (2017), Grepmair and colleagues (2007), and Swift and colleagues (2017) – who had varying levels of success and several limitations. Therefore, more research is needed to explore the direct effects of counselor mindfulness on therapeutic presence and its role in client outcomes with counseling students working with outpatient clients. One way to do this is to incorporate mindfulness training into counseling clinical practicum courses.

Need for the Study

A small but impactful body of literature exists on the value of integrating mindfulness into counselor education (Bohecker & Horn, 2016; Bohecker et al., 2016; Banker & Goldenson,

2021; Bohecker et al., 2014; Buser et al., 2012; Butts & Gutierrez, 2017; Campbell & Christopher, 2012; Christopher et al., 2006; 2011; Christopher & Maris, 2010; Dong et al., 2017; Duffy et al., 2017; Friedman, 2017; Fulton & Cashwell, 2015; Hillert & Tirado, 2019; Ivers et al., 2016; McCollum & Gehart, 2010; Reilly, 2016; Schure et al., 2008; Stella, 2016; Tannen et al., 2019; Testa & Sangganjanavanich, 2016; Turner, 2009). However, rarely do studies focus specifically on how counselor mindfulness directly translates to therapeutic presence and its role in client outcomes. Instead, researchers typically focused on how mindfulness assists in counselor self-efficacy (Bohecker & Horn, 2016; Butts & Gutierrez, 2018), ambiguity tolerance (Bohecker et al., 2016), personal development (Banker & Goldenson, 2021), professional identity development (Dong et al, 2017), self-care (Friedman, 2017; Schure et al., 2008), anxiety management (Fulton & Cashwell, 2015), multicultural competence (Hillert & Tirado, 2019; Ivers et al., 2016), empathy (Fulton & Cashwell, 2015), self-awareness (Stella, 2016), and reducing burnout (Testa & Sangganjanavanich, 2016). Thus, more research is needed to understand how counselor mindfulness improves therapeutic presence.

Additionally, more research is needed to understand the influence of counselor trauma on client outcomes. There are direct links between increased rates of trauma in counseling students (e.g., Black et al. 1993) and impaired presence and relational attunement (Siegel, 2010; Schore, 2008, 2021), yet there continues to be a dearth of research on the influence of counselor trauma on client outcomes despite the benefits of mindfulness in reducing trauma symptoms . (e.g., Briere et al., 2008; Vujanovic et al., 2011; Vujanovic et al., 2009). Therefore, infusing mindfulness training into clinical practicum has implications for how to improve counselor education, student wellness, and client outcomes.

Purpose of the Study

The main purpose of this study is to explore the effects of a 15-week mindfulness training protocol integrated into a counseling master's practicum course to understand its effect on clients' perceptions of therapeutic presence. The second purpose of this study is to explore whether the 15-week mindfulness training protocol improves counseling student's self-reported mindfulness traits as measured by the Five Facet Mindfulness Questionnaire (FFMQ: Baer et al., 2008). Finally, the third purpose of this study is to understand whether a 15-week mindfulness training protocol reduces counselor trauma symptoms as measured by the Global Psychotrauma Screen (GPS: Schnyder et al., 2017).

Research Questions

RQ1: Do master's counseling students who participate in a 15-week mindfulness training intervention have better client-reported therapeutic presence than those who receive no mindfulness training?

RQ2: Do master's counseling students who participate in a 15-week mindfulness training intervention have greater self-reported mindfulness traits than those who receive no mindfulness training?

RQ3: Do master's counseling students who participate in a 15-week mindfulness training intervention have a reduction in self-reported trauma symptoms than those who receive no mindfulness training?

Definition of Terms

The terms utilized throughout this study are operationalized for coherency and consistency.

Mindfulness

Mindfulness is operationalized as "the awareness that emerges through paying attention on purpose, in the present moment, and non-judgmentally to the unfolding of experience moment

to moment" (Kabat-Zinn, 2003, p. 144). Mindfulness, therefore, is the practice of focused attention to the present moment while maintaining equanimity by allowing experiences to arise and fall away without desire or aversion. Mindfulness intervention consists of training in the capacity to become and remain mindful.

Therapeutic Presence

Therapeutic presence is operationalized as bringing one's whole self into the therapeutic encounter with clients by being completely in the moment on multiple levels: physically, emotionally, cognitively, and spiritually (Geller & Greenberg, 2002). Within this study, therapeutic presence is explored as a fundamental aspect of effective counseling and a primary facilitator of the therapeutic relationship and subsequent client outcomes.

Counselor Trauma

Within this study, counselor trauma is viewed as any experience that may be viewed through the lens of the expanded adverse childhood experiences literature (PHL ACEs: Cronholm et al., 2015; Will et al., 2016) or the developmental trauma disorder literature (DTD: van der Kolk, 2011). Expanded ACEs are a modified version of the original ACEs research (Felitti et al., 1998) on early childhood adversity and its influences on adult emotional, behavioral, and physical health. While the conventional ACEs questionnaire measures multiple types of trauma, including physical/sexual abuse, neglect, domestic violence, substance abuse, mental illness, or incarceration, the expanded ACEs also includes a subscale for violence within communities, discrimination, bullying, or being in foster care.

Different from ACEs, developmental trauma disorder (DTD: van der Kolk, 2011) includes various historical events of physical, sexual, and relational trauma as experienced in relationship with the child's mother and father. DTD is a proposed model to expand the

understanding of childhood trauma and its effect on emotional-regulation and psychological functioning throughout the lifespan, particularly considering the identified limitations of the current definitions of posttraumatic stress disorder as offered by the *Diagnostic and Statistical Manual of Mental Disorders*, 5th Ed (DSM-5: American Psychiatric Association, 2013). For the purpose of this study, the Global Psychotrauma Screen (GPS: Schnyder et al., 2017) is used to measure trauma symptomology.

CHAPTER 2

REVIEW OF THE LITERATURE

In this chapter, I provide an overview of the current literature on the topics relevant for understanding the purpose of this study.

Literature Overview

This literature review is comprised of five sections. The first section is an overview of characteristics of effective counselors, factors that interfere with effective trait development, and ways to reduce this interference. The second section is an overview of counselor training, including accreditation criteria, clinical standards, program requirements, and practicum guidelines. The third section is a brief overview of mindfulness, including its history, definition, benefits, and uses in clinical work. The fourth section is an overview of mindfulness within counselor education, including current methods, benefits, barriers, and suggestions for improvement. A brief summary is also provided.

What Makes an Effective Counselor

Researchers continue to explore characteristics of effective counselors (Allen, 1967; Baştemur & Uçar, 2022; Campbell & Christopher, 2012; Carkhuff, 1968; 1969; Freud, 1923/1961; Glenn et al., 2015; Jackson & Thompson, 1971; Perls, 1973; Perls & Andreas, 1969; Rogers, 1957; 1961; Yalom, 1980; Yontef, 1993). Many early theorists offered their views on the most notable traits, such as respect, concreteness, confrontation, immediacy, and self-disclosure (Carkhuff, 1968). Others stressed the value of psychological openness (Allen, 1967; Freud, 1923/1961), and self-awareness (Fauth & Williams, 2005; Perls, 1973; Pieterse et al., 2013; Wilkinson, 2011; Yontef, 1993). Additionally, the core conditions of person-centered therapy, such as empathy, genuineness, and unconditional positive regard (UPR), are well established

common factors for effective counseling (Lambert, 1992; Laska, et al., 2014; Norcross & Wampold, 2011; Wampold, 2001; 2015; Wampold & Imel, 2015).

As the field of psychology moved closer to cognitive theories, researchers began to recognize the value of cognitive complexity (Granello, 2010; Little et al., 2005; Scott, 1962; Wilkinson et al., 2020; Wilkinson & Dewell, 2019), and cognitive flexibility (Genç & Şahin, 2020; Jackson & Thompson, 1971) in effective practice. Finally, with the advent of neuroscience, additional traits of effective counselors are being prioritized, such as presence (Geller & Greenberg, 2002, 2012; Geller & Porges, 2014), attunement (Baldini et al., 2014; Håvås et al., 2015; Day, 2016; Siegel, 2010), and counselor-client co-regulation (Schore, 2021).

While a thorough review of every characteristic of effective counselors is beyond the scope of this study, an overview of the evolving views of counselor efficacy is presented. Additionally, in alignment with common factors, traits of effective counselors will be provided through the lens of the therapeutic relationship. The therapeutic relationship is an emotional, cognitive, and embodied experience, meaning counselors that develop traits to improve their capacity to attend to all three of these experiences will provide more well-rounded care to their clients (Siegel, 2010).

The Humanistic Perspective

Philosophers that subscribe to humanistic theory believe in the inherent worth of the individual and their ability to move toward self-actualization and overcome hardship when provided with the right environment, and humanistic counselors considers the therapeutic relationship to be facilitative of this environment (Rogers, 1957). Early humanistic psychology theorists viewed the therapeutic relationship as primarily based on connection (Rogers, 1957; Perls, 1973; Yalom, 1980). Rogers stressed that psychological change is not possible unless it is

within the context of a supportive therapeutic relationship based on the core conditions of change, such as empathy, genuineness, and unconditional positive regard. Perls (1973) stressed that true connection in gestalt therapy occurs within the dialogic process, which requires counselors to enter the therapeutic relationship with their entire selves – fully present and authentic – to forge psychological contact. Perls stressed that this process requires great self-awareness and attunement to the client. Finally, Yalom (1980) asserted that the therapeutic relationship in existential therapy is the primary healing factor for clients because it evokes unmet needs from the client's childhood which might be stymied or denied as a way to confront the anxiety of existence.

The Cognitive Perspective

Cognitive theorists emerged in critical response to the humanistic perspective, asserting that the way people think contributes more strongly to emotional arousal and behavioral responses, and the way to remedy psychological suffering is to replace unhelpful thoughts with more adaptive ones (Beck, 1979). As an aspect of clinical training, cognitive theorists assert that strong executive functioning translates to effective counseling, such as the ability to rapidly process information and establish coherence while also being adaptable to change (Choate & Granello, 2006; Dennis & Vander Wal, 2010). Of particular importance are cognitive flexibility and cognitive complexity, which assist with problem solving, case conceptualization, crisis intervention, and treatment planning (Dennis & Vander Wal, 2010). Cognitive flexibility is the ability to switch between different concepts or consider multiple concepts simultaneously, whereas cognitive complexity is the ability to assimilate large amounts of information at one time with more depth and nuance. These two functions are also strongly linked to perspective taking, an important aspect of counseling and an essential criterion of empathy.

The Embodied Perspective

With the advent of neuroscience, emerging thinkers are better able to bridge the emotional, cognitive, and biological world with concepts such as interpersonal neurobiology and intersubjectivity (Porges, 2011; Schore, 2021; Siegel, 2010). This is supported by the emergent construct of embodied cognition, or the idea that the mind is connected to the body and the environment in which the individual is immersed (Wilson & Golonka, 2013) – including clients in a counseling environment. The relationship among mind, body, and brain highlights the cruciality of counselor self-awareness and presence in the process of relational attunement via a neurobiological process of co-regulation (e.g., brainwave synchronization; Zhang, 2020). The neuroscience of co-regulation also confirms much of attachment theory (Bowlby, 1988) and humanistic theory via the process of human connection as the primary healing mechanism.

Common Factors and the Therapeutic Relationship

What the humanistic, cognitive, and embodied characteristics have in common is their role in the development of the therapeutic relationship – making them the focus of this study. The importance of the therapeutic relationship is transtheoretical and is identified as one of the most vital contributors to positive client outcomes (Wampold, 2001; 2015). Through meta-analyses, researchers consistently find that the therapeutic relationship accounts for nearly 30% of the variance in client outcomes (Flückiger et al., 2018; Lambert; 1992). For example, Flückiger et al. conducted a meta-analysis of therapeutic alliance in adult psychotherapy with 295 studies spanning over 30,000 clients between 1978 and 2017 found that the overall alliance-outcome association for in person psychotherapy was r = .278 (95% confidence intervals [.256, .299], p .0001; equivalent of d = .579), which is a medium effect size. The correlation for internet-based psychotherapy was approximately the same (r = .275). These results confirm the

function of the therapeutic relationship in facilitating client outcomes. Additionally, this relationship remained consistent across assessors, alliance and outcome measures, treatment approaches, patient characteristics, and countries. Thus, developing characteristics that improve the therapeutic relationship is directly related to counselor efficacy as measured by client outcomes.

Characteristics of Effective Counselors

The following constructs provide a broad but concise overview of the current literature on characteristics of effective counselors through the lens of the therapeutic relationship.

Empathy

Empathy is defined as the ability to put oneself into another's world, to understand and experience what others feel, while simultaneously maintaining clarity about the boundaries of self and other (Decety & Lamm, 2006). Theorists across counseling paradigms tend to agree that empathy is the core component in all effective counseling due to its role in the development of positive therapeutic relationships and client outcomes (Elliott et al., 2018; Lambert, 1992; Perls, 1973; Rogers, 1957; 1961; Wampold, 2001; 2015; Wampold & Imel, 2015; Yalom, 1980). This is also supported in experimental research by Elliott and colleagues (2018), who demonstrated the value of empathy on client outcomes through meta-analysis of 82 studies representing 6138 clients. The results indicated that empathy was a moderately strong predictor of counseling outcomes ($r = .28$, $p < .001$, $d = .58$), which held across different theoretical orientations and client presenting problems.

Exploring empathy through the lens of social neuroscience also points to the value of empathy in the therapeutic relationship. Decety and Lamm (2006) offered a neurobiological definition of empathy as "a complex form of psychological inference in which observation,

memory, knowledge, and reasoning are combined to yield insights into the thoughts and feelings of others" (p. 1147). Decety and Lamm suggested that empathy facilitates "synchronizing representations of self and other" (p. 1149) via the process of somatic mimicry. They defined somatic mimicry as the ability to mimic others' facial expressions, postures, vocalizations, and movements, which triggers the mirror neuron system and contributes to the ability to perceive and understand other peoples' pain. Somatic mimicry allows self-and-other mental state understanding, often called perspective taking, which facilitates counselor-client co-regulation.

Genuineness

Genuineness is one of the core conditions of person-centered counseling (Rogers, 1961) and is also referred to as congruence (Klein et al., 2001; Kolden et al., 2011; Kolden et al., 2018). Rogers defined genuineness/congruence as the willingness and ability to be authentic toward oneself and others. Kolden and colleagues (2018) offered distinction between congruence and genuineness, suggesting that congruence is a meta-perspective of the therapeutic relationship with an intrapersonal and an interpersonal facet. Kolden and colleagues suggested that the intrapersonal facet of congruence includes mindful genuineness, self-awareness, and authenticity as aspects of the counselor, whereas the interpersonal facet of congruence includes the counselor's capacity to be respectful and transparent in giving voice to the client's experience within the dialogical process.

Results of two meta-analyses exploring the effects of genuineness/congruence on client outcomes highlight the value of this construct as a quality of effective counselors (Kolden et al., 2011a; 2018). Kolden and colleagues (2011a) presented the results of 16 studies that explored the effect of genuineness on treatment outcome and found a moderately strong relationship (r = .24, p = .003, d = .48), with genuineness accounting for 6% of the variance in client outcomes.

An updated meta-analysis by Kolden and colleagues (2018) explored the effects of congruence/genuineness on therapeutic outcomes in 21 studies representing 1192 clients and results indicated a moderately strong effect size (r = .23, CI = [.13-.32]), d = .46, 95% with genuineness/congruence accounting for 5.3% of the variance in treatment outcome. Kolden and colleagues (2011b) also explored moderators of the genuineness-outcome association by examining measurement-related variables, counselor variables, client variables, and treatment variables. They found that client-rated outcome (r = .29, p <.05) produced a significantly higher effect size than therapist-rated improvement (r =.07, p <.05), suggesting the need to prioritize client-report for more accurate outcome measurement.

Genuineness is also strongly linked to empathy (Rogers, 1961), though they have separate but related functions. Empathy requires genuineness, but genuineness is not always empathetic (Nienhuis et al., 2018). Nienhuis and colleagues conducted a meta-analysis of 53 studies to determine the effects of empathy and genuineness on the therapeutic alliance. Results from 46 of the 53 studies found a moderately strong relationship between therapist empathy and therapeutic alliance (r = .50, SE = .05, 95% CI = [.42-.57]) and results from 16 of the 53 studies found a strong relationship between therapist genuineness and therapeutic alliance (r = .59, SE = .103, 95% CI = [.45-.71]). Interestingly, race and ethnicity significantly moderated the alliance/empathy relationship in a positive direction, which Nienhuis and colleagues suggested had two specific implications: 1) that racial/ethnic minority clients require their counselor to display greater degrees of empathy to trust that the relationship will be beneficial and 2) that multicultural competency may be a relational skill entwined within the therapeutic relationship, suggesting that counselors with better cultural humility present as more empathic, which may translate to stronger therapeutic relationships and better client outcomes.

The links between multicultural competency and genuineness may be understood through the egalitarian relationship (Brown et al., 2007). Brown and colleagues argued that genuineness is a core aspect of multicultural competence, particularly when the counselor is willing to address their own limitations and invite the client to be an expert or authority on their own experience. Brown and colleagues argued that genuineness is an essential component in overcoming aversive bias, covert bias, and disowned bias, particularly when the counselor is willing to bring conversations about this into the room and acknowledge where they are situated in relation to the client in a way that appears genuine and committed to fostering connection. Brown and colleagues concluded that this process of bias awareness is more likely to convey empathy and facilitate therapeutic connection, particularly with cross-cultural counseling.

Unconditional Positive Regard

Unconditional positive regard (UPR) is also a core condition and a major curative factor in therapy (Rogers, 1957, 1961; Wilkins, 2000). Rogers (1957) defined UPR as a feeling of acceptance and caring by the counselor for the client in all aspects of their life, whether they express positive, negative, consistent, or inconsistent aspects of themselves. Wilkins (2000) argued that the counselor who conveys UPR expresses deep value for the humanity of the client, which is necessary for healthy psychological development. Ridge and colleagues (2003) considered the unconditionality of UPR to be a vital process in contradicting the conditions of worth that clients bring to therapy that influence their distress. Rogers (1957) defined conditions of worth as a feeling that deservingness of love and respect hinges on the approval of others and contributes to psychological suffering.

It is recommended that UPR not be understood in a vacuum but as part of the core conditions of person-centered therapy in combination with empathy and genuineness (Wilkins,

2000). Wilkins argues that empathy and genuineness provide the context that make UPR "credible" (p. 23). Frankel and colleagues (2012) claimed that UPR and empathy are the vehicle for therapeutic change because they allow for a restructuring of the client's narrative, which enables clients to develop unconditional positive self-regard as they learn to view their own narrative through the lens of the counselor's UPR. Finally, Ridge and colleagues (2003) stressed that counselors develop their own UPR for themselves to improve inner congruence, model this for clients, and overcome their own conditions of worth, a process that they called "conscious identification" (p. 275). Despite these claims, little experimental research directly measures the effects of UPR on client outcomes, however, research on Rogerian core conditions typically includes UPR with empathy and genuineness.

Psychological Openness

Effective counselors are also thought to possess traits such as psychological openness (Allen, 1967). Allen defined psychological openness as a person with a high degree of self-communication who is more connected to others due to a better integration of the various aspects of themselves. Allen described the psychologically closed person as having more isolation among the varieties of self-experience, which translates to ongoing struggle with relational connection. Allen stressed that the degree to which a person is psychologically open or closed depends on the degree of self-awareness they have, particularly of their own feelings, impulses, imaginings, and yearnings. Additionally, Allen draws the link between psychological openness and the counselor's ability to understand the client, as well as to facilitate an atmosphere conductive to client openness. Freudian theory also stresses the importance of psychological openness, claiming that a counselor's lack of insight into their own psychological process contributes to a distorted perception of clients (Freud, 1923/1961). Rogers (1957) also valued

psychological openness as a function of genuineness, highlighting that counselors should be fully in touch with the truth of themselves as a means of being congruent within the therapeutic relationship.

Cognitive Flexibility

As research into characteristics of effective counselors has evolved, other factors regularly emerge beyond the core humanistic conditions, such as cognitive flexibility (Dennis & Vander Wal, 2010; Genç & Şahin, 2020). Cognitive flexibility is defined as the readiness to intentionally shift between mental processes to produce appropriate behavioral responses (Dajani & Uddin, 2015). Cognitive flexibility is a necessary component for various social skills and behavioral regulation strategies because it allows openness to change, adaptation to difficulty, and the ability to solve problems (Stevens, 2009), however, research on cognitive flexibly with counselors is still in its infancy. Genç & Şahin (2020) explored the relationship between cognitive flexibility and effective practice in 521 counselors in Turkey using the Effective Counselor Characteristic Scale (ECCS) and found that cognitive flexibility was statistically significantly related to effective counseling (R=.45, R2= .20; F=120.84, p <.001).

Other researchers using different populations also demonstrate the utility of cognitive flexibility in various characteristics that may be important in a counselor role. For example, Stevens (2009) conducted correlational research on cognitive flexibility and social problem solving in children and found that cognitive flexibility is more strongly associated with social problem-solving skills, $R^2 = .13$, $F(3, 78) = 3.89$, $p < .01$, which may be useful in the role as a counselor. Additionally, Dennis and Vander Wal (2010) developed the Cognitive Flexibility Inventory (CFI, 2010) and found that cognitive flexibility allows people to perceive situations with more depth and nuance, maintain control, explore alternatives, and generate various

solutions to difficult situations. As a characteristic of effective counselors, cognitive flexibility may also translate to improvement in the social skills necessary for building therapeutic rapport, the ability to integrate rapidly changing information with depth and nuance, the capacity to remain regulated during heightened emotional interactions, the insight to form coherent case conceptualizations and treatment plans, and the ability to help clients problem solve.

Cognitive Complexity

Related to but different than cognitive flexibility, cognitive complexity is also a characteristic of effective counseling (Choate & Granello, 2006; Granello, 2010; Little et al., 2005; Martinez & Dong, 2020; Simmons, 2008; Spengler & Strohmer, 1994; Wilkinson & Dewell, 2018; Wilkinson et al., 2020). Cognitive complexity within the context of counseling is defined as the ability to assimilate, integrate, and use various perspectives while taking in a wide variety of information to develop an understanding of a person (Granello, 2010). If cognitive flexibility is the capacity to rapidly adapt to a changing environment and switch between tasks, cognitive complexity is the process of establishing coherency during this rapid process. Blocher (1983) argued that cognitive complexity is linked to more effective performance in counseling students because it allows for improvement in perspective-taking, information differentiation, and collaboration. Borders (1989) argued that cognitive complexity assists counselors with better client conceptualization, while Granello (2010) found that cognitive complexity of counselors is related to more open-mindedness, multicultural humility, empathy, and self-awareness. Wilkinson and Dewell (2019) offered a theoretical conceptualization of cognitive complexity through the lens of differentiation and integration. Wilkinson and Dewell argued that differentiation and integration are distinct but interdependent aspects of cognitive complexity in clinical problem-solving. They suggested that differentiation is related to the mental ability to

capture more client data to develop a thorough conceptualization of client experiences, concerns, and characteristics. In contrast, integration involves translating this data into a solution by perceiving thematic connections across the data and merging themes into a more refined case conceptualization that can inform the decision-making process. Wilkinson and Dewell argued that this differentiation is vital to ensure that cognitive complexity is a "well-articulated construct" (p. 97), arguing that poorly articulated constructs impair adequate understanding of counselor effectiveness.

Research into the features of accurate clinical judgement also highlight the value of counselor cognitive complexity (Spengler & Strohmer, 1994). Spengler and Strohmer used an experimental questionnaire on a randomized sample of 119 counseling psychologists to explore features of counselor clinical judgement and found that those with lower cognitive complexity were more likely to form biased clinical judgements to client vignettes than those with higher complexity (F(l, 113) = 4.72, R^2 change = .04, p =.032). These findings suggest that greater cognitive complexity is associated with more accurate and fair clinical decision-making and diagnosis. Welfare and Borders (2010) also found that counselors with low cognitive complexity struggle with nuances in clients' stories, view clients more superficially, engage in more dichotomous thinking, and subsequently miss important clinically relevant information.

Experimental researchers also support the value of cognitive complexity in counselor effectiveness. Little and colleagues (2005) conducted a randomized controlled trial exploring the utility of the Skilled Counselor Training Model (SCTM: Smaby et al., 1999) in teaching counseling skills and fostering cognitive complexity. Little and colleagues found that early counseling students tended to overestimate their skills performance; however, after the intervention using the SCTM, the treatment group demonstrated greater cognitive complexity

and conducted more accurate self-assessment than those in the control group. This study also points to the importance of self-awareness in self-assessment.

Additionally, cognitive complexity is also related to multicultural counseling competence. Martinez and Dong conducted survey research with 78 graduate counseling students across multiple universities to explore the association between multicultural counseling competence, cognitive complexity, cognitive flexibility, and mindfulness and found that cognitive complexity, cognitive flexibility, and mindfulness explained a substantial portion of the variance in multicultural competence (overall model $R^2 = .52$, $p < .01$). The implications of this study suggest that cognitive complexity and self-awareness allow counselors to better explore diverse perspectives, understand complex client issues, implement non-stereotyped approaches to client conceptualization, express cultural humility, and adopt integrative strategies for client treatment. Wilkinson (2011) supported this approach, claiming that the intersection of cognitive complexity, mindfulness, and multicultural competence ultimately means better adherence to ethical guidelines and more professional integrity due to more comprehensive understanding of clients and their presenting problems.

Self-Awareness

Self-awareness is also established as necessary for effective counseling (Abney, 2002; Baştemur & Uçar, 2022; Campbell & Christopher, 2012; Fauth & Williams, 2005; Glenn et al., 2015; Hernández et al., 2010; Pieterse et al., 2013; Şimşir, 2021; Yontef, 1993). Self-awareness is defined as conscious knowledge of personal feelings, thoughts, beliefs, attitudes, and actions – the cohesion of which improves congruence and subsequent awareness of identity, motivation, strengths, needs, weaknesses, and goals (Şimşir, 2021). Various counselor training guidelines define self-awareness as the apex counselor characteristic. The Council for the Accreditation of

Counseling and Related Educational Programs (CACREP) standards described self-awareness as a fundamental standard for counselor qualification (CACREP, 2016). Additionally, the *Multicultural and Social Justice Counseling Competencies* (MSJCC: Ratts et al., 2016) consider counselor self-awareness to be the number one factor in multicultural humility and social justice advocacy. Ratts and colleagues stated that counselors must develop self-awareness so that they may explore attitudes and beliefs, develop knowledge, refine skills, and engage in action.

Systematic review of the literature on the direct links between counselor self-awareness and client outcomes also points to the importance of this construct. Abney (2002) highlighted myriad studies showing support for the value of self-awareness in counselor multicultural competence via self-reflective writing activities (Kanitz, 1998), awareness of personal distress and impairment via engagement with self-care activities (Richardson & Molinaro, 1996). Others explored how self-awareness improved feelings of competency as defined by Delphi studies with licensing board members (Davis, 1998), and an understanding of phenomenology via exploration of meta-cognition through perspective-taking (Duck & Condra, 1990), which improved understanding of the notion of the self (Zahavi & Parnas, 1999). Additionally, Pieterse and colleagues (2013) found that self-aware counselors are better attuned to their own personal struggles, family dynamics, cultural prejudices, unresolved conflicts, and worldview.

Given the link between self-awareness and counselor effectiveness, researchers developed a model of self-awareness training for counseling students (Pieterse et al., 2013). Pieterse and colleagues proposed an integrated model of self-awareness training to inform the therapeutic process, training, supervision, and multicultural counseling – as well as to highlight the limitations of current approaches to self-awareness development in counselor education. Their model explicitly outlined the major components of self-awareness development at a

content and process level, arguing that the two-step process first requires understanding of the self subjectively (thoughts, emotions, beliefs) and objectively (behaviors). Pieterse and colleagues explained that an integrated model of self-awareness training must address personality, family of origin dynamics, gender and sexual orientation, racial/ethnic identity, relational style, social class, and spiritual/religious orientation.

Qualitative data is also helpful in understanding the role of counselor self-awareness. Hernández and colleagues (2010) explored supervisors' views of the importance of self-awareness through phenomenological inquiry. The supervisors in their study consistently identified self-awareness as necessary for counseling students to explore motivations for entering the profession, personal and professional strengths, areas of growth, listening skills, willingness to receive feedback, and the ability to identify and express needs. Glenn and colleagues (2015) also explored the views of counselor educators and supervisors on counselor self-awareness and found their participants consistently stressed the links between self-awareness and becoming aware of biases, values, beliefs, and fears, as well as potential countertransference issues, ethical judgement, cultural awareness, boundaries, limitations, self-care, and burnout.

Presence

Presence is considered the core of a positive therapeutic relationship (Geller, et al., 2010; Geller & Greenberg, 2002; 2012) and is considered "one of the most therapeutic gifts a therapist can offer" (Geller & Greenberg, 2002, p. 72). Geller and Greenberg (2002) defined therapeutic presence as "bringing one's whole self into the encounter with clients by being completely in the moment on multiple levels: physically, emotionally, cognitively, and spiritually (p. 72). Siegel (2010) claimed that presence allows the counselor to be receptive and open toward the client, more aware of countertransference, and more capable of tolerating discomfort. He calls presence

the “most important element in helping others heal” (p.2). Additionally, Geller (2013) asserted that presence allows for attuned responsiveness based on sensing of the client’s emotions and experiences, which is essential in the counselor-client co-regulation process.

Trauma researchers also point to the utility of counselor presence as a facilitator of attunement through the physiological sense of safety that develops as the counselor attends to the client’s verbal and nonverbal cues (Geller, 2013, Geller & Porges, 2014; Siegel, 2010). Geller & Porges (2014) explored therapeutic presence through the lens of polyvagal theory and discussed how therapeutic presence deepens the therapeutic relationship to promote calming of the nervous system in clients with trauma. *Polyvagal theory* proposes that psychological safety is an inner state that is mediated by *neuroception*, a neural process that occurs without awareness but is responsible for constantly evaluating risks in the environment. When a risk is perceived, it triggers physiological responses that respond to danger, but when safety is communicated via specific types of empathic responses in social engagement (e.g., within the therapeutic relationship), defensiveness will down-regulate (Geller & Porges, 2014; Porges, 2011).

Attunement

The value of presence is also linked to its role in facilitating relational attunement (Siegel, 2010). Relational attunement requires present moment awareness of the verbal and nonverbal occurrences within the therapeutic space and empathic connection to the client. Day (2016) calls relational attunement “necessary for harnessing the momentum of transformation” (p. 84) in counseling. Siegel (2010) argued that relational attunement requires dual awareness of self and client. Additionally, Baldini and colleagues (2014) supported Siegel’s (2010) claims, stating that self-attunement assists with awareness of triggers that may impair counselors’ capacity for relational attunement (e.g., countertransference, traumatic material, dissociative

tendencies, or burnout), while client-attunement helps counselors detect subtle shifts in the client as they engage in the therapeutic process.

According to proponents of interpersonal neurobiology, relational attunement is the underlying function in the therapeutic relationship that is directly responsible for client outcomes (Siegel, 2010). The role of relational attunement was also measured through biological markers by Zhang and colleagues (2020), who conducted research on attunement in therapeutic relationships and found that counselor-client dyads who mutually reported a more positive working therapeutic relationship showed greater rates of brainwave synchronization using functional near-infrared spectroscopy (fNIRS). Additionally, Håvås and colleagues (2015) conducted a randomized controlled trial comparing 40 sessions of psychodynamic therapy with cognitive therapy with 49 clients diagnosed with cluster C personality disorders and found that relational attunement reduced attachment insecurity (both anxious and ambivalent types). External raters measured counselor affective attunement and found that those with higher levels of nonverbal matching of client affect predicted clients who showed a decrease in avoidant attachment at termination. Additionally, counselor nonverbal openness and positive regard predicted a decrease in client ambivalent attachment style at termination. Interestingly, they also found that the verbal aspects of therapeutic connection (e.g., reflection of content/feeling) did not predict attachment changes when they controlled for the influence of nonverbal attunement, suggesting that awareness of how to properly engage in affective attunement with clients may improve client outcomes. Given the evidence which suggests that attunement is a vital component to therapeutic relationships, strategies to help counseling students foster attunement and/or overcome barriers to this trait development are warranted.

Barriers to Effective Counselor Trait Development

Identifying characteristics of effective counselors may improve understanding of what interferes with effective trait development. Any factor that reduces meaningful psychological contact in a therapeutic relationship could be viewed as a barrier, and Siegel (2010) cautioned that this often occurs when counselors have unresolved trauma and/or attachment disorders. Additionally, Madhavilatha (2008) discussed aspects of ineffective counseling and concluded that counselors who cannot focus on client's interests are "impaired" (p. 50). Madhavilatha also stated that counselors who struggle to identify and express their own needs may struggle in the counseling role, citing the importance of being mentally healthy, mature, and capable of attending to their own emotional wellbeing. He cautioned that failure to address these factors may obscure clarity on boundaries, increase the risk of countertransference related to unresolved personal material that remains outside of awareness, and reduce the ability to manage the high cognitive load required to work therapeutically.

Other factors that may impair effective counseling include struggles with the core conditions (e.g., empathy, warmth, genuineness/congruence, UPR). Empirical researchers describe the lack of core conditions as a barrier to effective therapeutic relationship development, including reduced therapeutic rapport and poorer client outcomes (Wampold, 2007; Wampold et al., 1999). Additionally, cognitive complexity and cognitive flexibility are necessary for effective counseling due to their role in the counselor's ability to assimilate client material, maintain intentionality, formulate treatment plans, assess progress, and move toward goals (Stevens, 2009). Cognitive complexity and cognitive flexibility are also inextricably linked to empathy through the process of perspective taking (Decety & Lamm, 2010). Finally, psychological

openness and self-awareness are vital characteristics of effective counselors that assist with developing presence (Geller et al., 2013) and attunement (Siegel, 2010).

Many of the characteristics of effective counselors are negatively impacted when unprocessed trauma and attachment disorders are present in counselors. For example, researchers who explored the neuroscience of trauma and attachment explain why counselors have a responsibility to be psychologically healthy – because of the implications of becoming triggered by client material, which impairs therapeutic presence and hinders relational attunement (Baldini et al., 2015; Schore, 2009; 2021; Siegel, 2006; 2010; 2019). More specifically, Schore (2009; 2014) explored affect regulation in attachment and trauma disorders and found that unresolved trauma exhibits physiological markers of neural disintegration, which impairs the right-brain to right-brain connection among the infant/caregiver relationship. If left unaddressed, over time this neural disintegration may lead to patterns of dissociation, and the consequences of this continue into adulthood and often present as difficulty with relational connection with intimate partners (Schore, 2014). The implications of this can be clearly translated to the therapeutic relationship and the potential barriers of unprocessed trauma and attachment disorders for counselors connecting with their clients. If neuropsychological dysregulation is present in counselors due to difficult and unresolved personal history, then personal development is a necessity to ensure that clinical practice is not impaired.

The implications of unprocessed trauma and attachment disorders are rarely explored in the counselor population, perhaps with the exception of Black and colleagues (1993), who conducted cross-sectional research and found that graduate students entering the helping professions (e.g., counseling, social work, psychology, etc.), have 30-50% more historical trauma markers than those who enter non-helping fields such as business. Black and colleagues

argued that personal trauma history of those in helping professions has pros and cons, but ultimately this comes down to the level of personal development. They claimed that adequate personal development can cause past trauma to be sufficiently worked through, which may render the counselor more insightful and empathic to distress; however, if little or inadequate personal development is done, unresolved trauma may be implicated in the motivation to enter the helping field for self-reparation and the working through of old injuries, which risks impaired functioning and client harm (Thisde, 1981). Thus, more research is needed to understand how trauma may be a barrier to effective counselor trait development and how it may influence therapeutic presence and client outcomes. Additionally, more research is needed to understand strategies to mitigate these risks in counselor education programs.

Trauma Defined

To better operationalize the construct of trauma as it applies to impaired counselor effectiveness, a brief overview of trauma symptoms and implications are provided. Trauma may be understood as the physical, emotional, or psychological symptoms of traumatic stress that occur in response to an event (van der Kolk et al., 1996). Typical physical symptoms include physiological hyperarousal such as shaking, trembling, rapid heart rate, rapid breath, struggle with breathing, dizziness, or stomach tension. Typical emotional symptoms include feelings of shock, fear, disbelief, intense sadness, guilt, or helplessness. Typical psychological or cognitive symptoms include those related to anxiety, depression, somatic disturbances, conduct disorders, impulsivity, dependence, struggles with decision-making, dissociation, racing thoughts, or others. It is estimated that over half of the population of the United States has experienced a traumatic event, yet the incidence of persons who go on to develop more severe traumatic responses such as posttraumatic stress disorder (PTSD) is closer to 7% (Kessler, et al., 2017).

Trauma and Attachment

Trauma is also implicated in the development of insecure attachment styles (Schore, 2009; Spinazzola et al., 2018; 2021). *Attachment theory (*Bowlby & Ainsworth, 1966), is a theoretical model that outlines the links between the mother-child bond and subsequent child personality development, including patterns that relate to feeling safe or unsafe in future relationships. Infants with secure attachment have caregivers that are better attuned to their needs and appropriately responsive to them in varying situations (Schore, 2001; 2008). This type of attuned responsiveness by the primary caregiver is associated with better overall child development, including functional neural integration that is responsible for adequate behavioral and emotional regulation as they grow. Conversely, caregivers who inconsistently meet their child's needs tend to influence anxious attachment in their children (Bowlby, 1988). In adulthood, this often looks like individuals who are overly needy in their relationships. In contrast, caregivers who are neglectful of their children often influence avoidant attachment. In adulthood, this often looks like people who struggle with intimacy or avoid deeper connection within their relationships. Finally, caregivers who are abusive tend to influence disorganized attachment in their children. In adulthood, this often contributes to more severe pathology, such as severe dissociation, severe trauma responses, and personality disorders (Beeney et al., 2017). The varying types of insecure attachment patterns are related to inhibited neural integration, which stymies psychosocial development and often leads to emotional and behavioral dysregulation (Schore, 2009; 2014).

Counselor Implications

The implications of counselor trauma and attachment disorders relate to their ability to maintain therapeutic presence, form relational attunement, and engage in co-regulation with their

clients (Schore, 2021; Siegel, 2010). If counselors are considered the *neuroarchitect* for the client (the external regulator) (Baldini et al., 2014), then both their regulation and their trauma response patterns are likely to influence the therapeutic space.

Counselor Attachment

Researchers claim that a psychobiologically attuned counselor can become a secure attachment base for the client, which assists clients in developing neural pathways responsible for psychological healing (Baldini et al., 2014; Siegel, 2001; 2006; 2009; 2010; Zhang et al., 2020). This is supported by empirical research as well. For example, Dozier and colleagues (1994) explored counselor attachment patterns and their relationship to client outcomes with a sample of 27 clients and their 18 clinicians. They administered the adult attachment interview to clinicians and clients at the beginning of the study to identify attachment patterns. Over five months, they interviewed clinicians and coded their interventions for depth of intervention and attention to client needs. They discovered that more securely attached clinicians were better able to attend and respond to client's needs in deeper and more nuanced ways, whereas clinicians who were insecurely attached typically only attended to the more obvious and superficial needs. This highlights a pattern of improved depth of processing, cognitive complexity, and relational attunement in the securely attached counselors. Additionally, Zhang and colleagues (2020) explored interpersonal brain synchronization using functional near-infrared spectroscopy (fNIRS) on counselor-client dyads and found synchronous brain activity patterns between counselor and client, which was particularly strong in dyads where the client reported a better working alliance. The implications of Zhang and colleagues work is that there are psychobiological markers for the co-regulation process via brainwave attunement. This process appears to be moderated by the quality of the therapeutic relationship, which may be related to

the client feeling more securely attached to the counselor and subsequently the counselor more deeply attuning to the client's needs.

Counselor Trauma

A colossal field of research exists on treating trauma in clients (Briere et al., 2008; Lenz et al., 2017; Vujanovic et al., 2011; Vujanovic et al., 2009); yet there is a paucity of research on counselors with trauma and how this effects clinical practice and client outcomes. Researchers claim that counselors with unresolved traumatic material are more likely to struggle to remain present during session (Mucci & Scalabrini, 2020; Siegel, 2010), have reduced capacity for self and other attunement (Schore, 2021), and struggle with co-regulation (Baldini et al., 2014; Siegel, 2006; 2019). Counselors with a trauma history are also more likely to be triggered by client material (Arvay & Uhlemann, 1996; Keim et al, 2008), have higher rates of vicarious traumatization, and greater rates of burnout than counselors without a trauma history (Adams & Riggs, 2008; Black et al., 1993; Keim et al., 2008; Lanier & Carney, 2019). Given the importance of presence and attunement on co-regulation, this has striking implications for research on client outcomes.

Both direct and indirect trauma can result in changes to the counselor's understanding of self, others, and the world (Jourdan, 2010; Michalopoulos & Aparicio, 2012) – and may present similarly to PTSD via dissociation, burnout, numbness, emotional dysregulation, and hypervigilance (Adams & Riggs, 2008; Shannon, et al. 2014; Zosky, 2013). For example, Keim and colleagues (2008) explored the relationship between trauma, posttraumatic stress disorder, and burnout in 51 counseling students enrolled in a CACREP program using the Maslach Burnout Inventory – Human Services Survey (MBI-HSS; Maslach, Jackson, & Leiter, 1996), the Impact of Events Scale (IES: Horowitz et al., 1979), and the Los Angeles Symptom Checklist

(LASC: King, Leskin, & Foy, 1995) and found that 12% of their students qualified for a PTSD diagnosis, which is 6% higher than the typical rate of PTSD at 8% in the general population (United States Department of Veterans Affairs, 2022). They called this rate of PTSD in counseling trainees concerning and considered it “ethically and morally critical” (p. 301) for counselor educators and programs to address issues with students about their history of direct trauma (via personal history) and their risk factors for vicarious traumatization (via client material). A decade earlier, Arvay and Uhlemann (1996) conducted corroborative research with a sample of 161 practicing counselors working with trauma clients and found similar rates of traumatic stress akin to PTSD in their sample (14%).

For counseling students, the risks of vicarious trauma appear extraordinarily high. Lanier and Carney (2019) explored risk factors to developing vicarious trauma in counseling students and discovered that 85.5% of their sample experienced some symptom of vicarious trauma and 49.5% experienced all symptoms as measured by the Secondary Traumatic Stress Scale (STSS: Bride et al., 2004). Some estimates suggest that as many as 50% of counselors are at risk of developing vicarious trauma (Bride et al., 2004; Conrad & Kellar-Guenther, 2006). Finally, researchers conducting comprehensive systematic review of counselor risk factors to vicarious traumatization consistently identify that a personal trauma history dramatically increases the risk of experiencing vicarious traumatization (Baird & Kracen, 2006; Ghahramanlou & Brodbeck, 2000; Linley & Joseph, 2007; Molnar et al., 2020; Pearlman & MacIan, 1995; Robino, 2019; Salston & Figley, 2003; Trippany et al., 2003; Williams et al. 2012). Counselors with a personal trauma history are also more likely to experience compassion fatigue, burnout, and have fewer coping mechanisms than their non-trauma-history counterparts (Baird & Kracen, 2006). Finally, researchers exploring factors of counselor happiness also discovered that counselors with a

personal trauma history self-identify as being less happy and less fulfilled in their work (Chaverri, et al., 2018). What trauma and vicarious traumatization have in common is that they negatively impact counselors' abilities to meet their own needs (via burnout and reduced coping mechanisms), remain meaningfully present with their clients (via hypervigilance and dissociation) and risk client disengagement (via compassion fatigue). Ultimately, this leads to reduced therapeutic presence and impaired relational attunement, which inhibits the co-regulation necessary for effective practice.

Mindfulness

Given the links between trauma and attachment disorders on impaired counselor effectiveness, researchers are calling for counselor educators and supervisors to better prepare counseling students through specific educational material embedded in coursework (Lanier & Carney, 2019). This includes more training on the links between trauma and impaired counselor effectiveness, as well as resources on resiliency development. Clark (2009) conducted a grounded theory exploration of factors of counselor resilience and found that lower self-awareness was related to less resilience and more counselor burnout, suggesting that strategies to promote self-awareness may improve counselor wellness and reduce the effects of trauma. One way to achieve the necessary changes may be through establishing mindfulness training as a CACREP standard and infusing experiential mindfulness training into all courses, or at the very least, all clinical courses.

The benefits of mindfulness training for developing the various characteristics associated with effective counselors are well established in the research. Mindfulness training is shown to improve empathy (Bohecker & Horn, 2016; Fulton & Cashwell, 2015; Greason & Cashwell, 2009), congruence (Koole et al., 2009; Remmers et al., 2017), unconditional positive regard

(Joseph et al., 2016), psychological openness (Barner & Barner, 2011), cognitive flexibility (Martinez & Dong, 2020), cognitive complexity (Goonetilleke, 2017), self-awareness (Lutz et al., 2016; Park et al., 2020; Stella, 2016), presence (Bourgault & Dionne, 2019; Mather et al., 2019; Szuster et al., 2020; Tannen et al., 2019), attunement (Feiner-Homer, 2016; Macaulay et al. 2007; Siegel, 2010), and counselor-client co-regulation (Kristensen, 2018; McIntyre et al. .2019; Siegel, 2006; 2010; 2019. Mindfulness practices also assist in resolving trauma symptoms (Kachadourian et al., 2021; Tubbs et al., 2019; Vujanovic et al., 2011; 2009; Waldron & Burnett-Ziegler, 2021) and attachment disorders (Jaurequi, 2019; Stevenson et al., 2017) while promoting posttraumatic growth (Chopko & Schwartz, 2009).

Mindfulness Definition

Mindfulness is both a way of being in the world and a specific practice of conscious skills development (Shapiro & Carlson, 2017). Mindfulness as a way of being is often termed dispositional mindfulness, trait mindfulness, or mindful awareness as a quality of a person's being. It refers to the innate capacity for an individual to pay and maintain attention to the present with equanimity as a quality of their development or character. Mindfulness as a practice of skills is often distinguished as state mindfulness – the intentional and focused engagement in mindfulness practice. Kabat-Zinn (1990) is credited with being the first to integrate mindfulness into a psychological framework for clinical practice with the development of Mindfulness-Based Stress Reduction (MBSR). Kabat-Zinn (2003) defines mindfulness as an awareness that emerges via purposeful attention to the present moment and nonjudgmentally accepting the unfolding of moment-to-moment experience. Others offer more traditional linguistic definitions of mindfulness via its original translation from the Pali language (Bodhi, 2000). Mindfulness in Pali comes from the word *sati*, which means to remember, but in the context of remembering to

maintain presence of mind. In a modern context, Brown and Ryan (2003) formally defined mindfulness as a receptive attention to and awareness of present events and experience.

Mindfulness is often used as a buzzword and is something researchers, practitioners, and educators are guilty of using as a panacea, often without real understanding of its background, utility, or potential – which is perhaps due to its marketization and commodification of practice (Hyland, 2017). To understand mindfulness, it is first important to distinguish it from meditation. Mindfulness is the overall skill that is developed, which is multifaceted and nuanced, whereas meditation is a specific practice used to develop mindfulness (Germer et al., 2005). Germer and colleagues distinguish mindfulness as a deep, abiding presence or awareness whereas meditation is the systematic practice of intentionally paying attention on purpose to the inner experience in an open, discerning, and kind way to develop mindfulness. When a person has a large degree of mindfulness, they experience a reduction in the oscillation between craving and aversion, which is said to be the root of human psychological suffering (Kabat-Zinn, 2003).

Mindfulness History

Mindfulness has evolved over millennia, but its origins are not fully known. Insight-oriented practices such as mindfulness are present across time in various religious and spiritual traditions, primarily emerging in the East. In contemporary culture, mindfulness is most often associated with Buddhist teachings as a method of quelling the distress of existence and alleviating suffering through understanding the mind (Brown et al., 2007; Gethin, 2017). Buddhist teachings originated from a collection of moral precepts, meditation practices, and insights into the nature of reality provided by Siddhartha Gautama, who taught these concepts in response to dissatisfaction with the traditional religious practices of the time (Hinduism). While Siddhartha Gautama is considered the founder of Buddhism, much of his teachings are inspired

by the evolution of thought from more ancient Vedic texts, such as The Upanishads and the Bhagavad Gita, which are primary Hindu-based religious texts. Siddhartha Gautama developed his teachings in response to recognizing that suffering is inevitable, and that current models of approaching suffering were unhelpful or harmful. Many of the original goals of Buddhism that still hold true today hinge on providing a pathway to the end of suffering – termed enlightenment. The common factors of Buddhism include mindfulness, satisfactoriness, impermanence, non-harming, and no-self as elements necessary to end suffering (Olson, 2005). These can be attained through following the eightfold path, an ethical guideline provided to assist people in the attainment of enlightenment. Mindfulness is only one component to Buddhist philosophy, but it is stressed as a primary practice necessary for facilitating many of the other qualities needed for the alleviation of human suffering.

Mindfulness Benefits

The myriad benefits of mindfulness are regularly studied in-depth. Eberth and Sedlmeier (2012) conducted a meta-analysis of 39 studies exploring the effects of a mindfulness meditation treatment. Inclusion criteria for this meta-analyses included a mindfulness-based intervention, the existence of an inactive control group, population samples of nonclinical adults, and assessments that explored changes across specific psychological measures (e.g., anxiety, depression, etc.). Eberth and Sedlmeier found wide ranging improvement on client's various psychological symptomology, including improved positive emotions, reduced negative emotions, improvements and expansions of self-concept, better attention, enhanced perception, improved overall well-being, better interpersonal skills, and reduced negative personality traits. These results informed the development of a comprehensive psychological model later developed by Eberth and colleagues (2019) that provided better explanation of these wide-ranging mindfulness

effects. Eberth and colleagues (2019) then conducted a two-part study to explore the earlier (2012) meta-analysis using grounded theory and quantitative cross-sectional analysis. In part one, they conducted a grounded theory analysis from qualitative data provided by 35 meditators at diverse levels of experience and found that equanimity (reduced emotional reactivity) and insight (alteration of cognitions) were the two traits most responsible for the positive changes garnered through mindfulness training. In the second part of their study, they examined equanimity and insight quantitatively using cross-sectional data and found that insight was not statistically significantly correlated with meditation experience (r = 0.12, p = 0.24) or frequency (η 2 = 0.01, p = 0.87), but it was correlated to duration of time in meditation (r = 0.19, p = 0.05). They suggested that longer meditation duration (e.g., one hour once per day as opposed to ten minutes three times per day) better assists with the development of mindfulness traits than simply meditating for repeated short durations or on and off over many years. Interestingly, equanimity was statistically significantly correlated with meditation experience (r = .24, p <.01) and the duration of sessions appeared to not have influence (r = .01, p = .91), which they suggested may point to equanimity relying on a process of steady remembrance (e.g., frequency) as opposed to depth required in insight that requires another process (e.g., duration).

Despite the results by Eberth and colleagues (2019), there continues to be a paucity of research on insight and equanimity in mindfulness research, which may be related to the level of sophistication of these traits that solidify as trait mindfulness, compared to the practice of mindfulness techniques such as paying attention or nonjudging, which are more fleeting functions of state mindfulness. The implications of this suggest that the lasting benefits of mindfulness (e.g., as they move from state to trait) may require an increase in frequency, intensity, and duration of practice to emerge. This presents barriers to mindfulness research,

given that longer frequency and duration of practice are often unfeasible in a research environment. Finally, there are cultural barriers, such as the way in which Western culture and Eastern culture conceptualize the constructs of equanimity and insight. For example, equanimity and insight have a specific definition in Buddhist-oriented mindfulness frameworks, whereas secular mindfulness in a Western research context may not appreciate the depth of what insight or equanimity convey through a cultural lens (Desbordes et al.., 2015).

Despite some of the probable mistranslations, attempts at defining equanimity as an outcome measure in Western mindfulness do exist, though they are rare. Desbordes and colleagues (2015) sought to distinguish mindfulness from equanimity to provide a clearer distinction between the two constructs and to clearly operationalize equanimity to improve research on the topic. They offer a distinction between equanimity and mindfulness both from the Buddhist tradition as well as the Western psychology tradition, suggesting that words typically used such as acceptance, distancing, nonjudgmental awareness, and non-attachment describe aspects of equanimity but are incomplete and misleading when trying to understand equanimity as a whole construct. Ultimately, they defined equanimity as “an even-minded mental state or dispositional tendency toward all experiences or objects, regardless of their origin or affective valance (pleasant, unpleasant, or neutral, p. 356). They provided neurobiological implications of equanimity, including the way it transforms sensory-perceptual and cognitive-emotional systems in a way that expands perspective on experience, improves engagement with incoming sensory information, and assists with better disengagement from cognitive-evaluative and emotionally reactive behaviors, such as what occurs through the process of client engagement with dialectical behavioral therapy (DBT: Linehan, 2014) and acceptance and commitment therapy (ACT: Hayes, 1999). However, they stressed that changes on a neural level

are gradual and occur through longer term and sustained mindfulness practices, which may also explain why interventions such as DBT are suggested to be a one-year manualized treatment.

Others support the value of mindfulness in the development of equanimity (Weber, 2017). Weber defined equanimity as the ability to allow awareness to be even and unbiased by enabling an attitude of non-attachment and non-resistance. Equanimity is relevant to the field of counseling via its intersection with empathy and compassion. Weber argued that equanimity is a mediating factor in being non-judgmental, which generates compassion. Other definitions of equanimity as a psychological construct are provided by Jijina and Biswas (2021), who conducted phenomenological research with 30 experts across various disciplines (e.g., Buddhism, psychology, mindfulness, mental health, etc.) and found four major themes to operationalize equanimity, including a widening perspective on personal experience, a broadening of one's perspective toward others, a process rooted in wisdom and insight, and what it is not (e.g., misconceptions). The panel of experts reported that people with greater equanimity have better distress tolerance, reduced reactivity, reduced bias, heightened empathy and compassion, and improved insight into the fleetingness of experiences and the role of conditioning as a process of learning experiences. The participants also stressed that equanimity was often conflated with mindfulness, which is a misconception, but that mindfulness practices are facilitative of steps toward equanimity.

Qualities of Mindfulness

The development of insight and equanimity as a consequence of mindfulness practice also enhance several cognitive, emotional, and interpersonal qualities. Brown and colleagues (2007) provided a comprehensive outline of six qualities of mindfulness and their benefit to personal development.

Clarity of Awareness

The first quality of mindfulness proposed by Brown and colleagues (2007) is *clarity of awareness* of a person's inner and outer worlds. This includes emotion, thought, sensation, actions, and surroundings within an environment as they exist in each moment. They argue that clarity of awareness offers "unbiased receptivity of mind" (p. 213) that is believed to facilitate insight into the nature of reality and expose that which would otherwise remain hidden from view. Clarity of awareness was found to reduce impulsivity and defensive reactions to difficult experiences in people with borderline personality disorder (Ryan, 2005). Additionally, Hill and Updegraff (2012) conducted correlational research and found links between clarity of awareness and improved emotional regulation via a reduction in the urge to categorize experience and an expanded observation of various mental states, which subsequently reduced emotional reactivity. Finally, Treves and colleagues (2019) conducted a meta-analysis of 15 studies across 17 independent samples to explore the relationship between mindfulness and body awareness. They found a statistically significant positive relationship between mindfulness and several objective measures of body awareness (e.g., heartbeat, breaths) (g = .21, 95% CI [0.08, 0.34]), which participants could clearly distinguish from each other. Given these results, Treves and colleagues posited that better body awareness may also translate to better awareness of emotional experiences and potential improvements in self-regulation.

Nonconceptual, Nondiscriminatory Awareness

The second quality of mindfulness is *nonconceptual, nondiscriminatory awareness.* Brown and colleagues (2007) argued that this process sits in contrast to typical cognitive processing styles which strongly rely on the intertwining of attention and cognition. The intertwining process of attention and cognition allows people to categorize, compare, evaluate,

and ruminate on memorable experiences or events, which negatively affects mental health via the influence of these processes on anxiety and depression (Hill & Updegraff, 2012; Linares et al., 2016). The ability to observe mental content with acceptance reduces the likelihood of becoming triggered, because acceptance allows for emotional regulation and subsequent choice to respond as opposed to the habitual reaction pattern often seen in emotional dysregulation (Shapiro et al., 2006). For example, Linares and colleagues (2016) explored the mediating role of mindfulness between attachment styles and depressive symptoms and uncovered the function of decentering in alleviating depression. Decentering is the capacity to focus on the present in a nonjudgmental way while accepting thoughts and feelings as they arise to become aware of the subjective nature of mental content and recognize that it is fleeting. Linares and colleagues found that depression was statistically significantly negatively correlated with decentering (r = -.45, p < .001), and statistically significantly negatively correlated with four of the five facets of mindfulness according to the Five Facet Mindfulness Questionnaire (FFMQ: Baer et al., 2008). This included describing experience (r = 1.21, p < *.01*) acting with awareness (r = 7.17, p < .01), non-judgementalism (r = -.34, p < .01) and non-reactivity (r = -.26, p < .01). The implications of this study are that those with stronger tendencies to categorize and judge their experiences are more at risk of depression.

Flexibility of Awareness and Attention

The third quality of mindfulness is *flexibility of awareness and attention* (Brown et al., 2007), defined as the ability to shine the lens of attention inward into deep concentration or outward to gain an expanded perspective on what is occurring externally. The oscillation between focus and perspective may be understood through the movement of attention from content (people, things, places, events, memories) to context (the environment, situation, or

framework in which these things occur). Hayes and colleagues (1999) discussed the value of moving from content to context in acceptance and commitment therapy (ACT). Hayes and colleagues claim that moving from the self-as-content (e.g., what can be witnessed or observed as an object within consciousness) to self-as-context (the process of witnessing or observing) improves mental health by reducing avoidant tendencies and improving acceptance. According to Hayes, psychological rigidity is related to fusion with thoughts, evaluation of experiences, avoidant tendencies, and rationalizing – which contribute to psychological distress. However, the ability to see situations from an expanded context, with greater flexibility and awareness, allows people to accept their thoughts and experiences, which facilitates awareness of values and improves action-oriented behavior.

There are also links to attentional flexibility and improvement in a range of coping skills, particularly self-regulated emotion and behavior. Brown and Ryan (2003) conducted a multimodal study to assess changes in day to day self-regulatory and emotional wellbeing outcomes from mindful attention as measured by the Mindful Attention and Awareness Scale (MAAS). They provided a mindfulness intervention to a sample of 83 adults which included a two-day mindfulness intervention training with instructions and guidance for continued home practice. They instructed participants to engage in daily practice and record their insights and experiences over a 21-day period with three reminder messages sent daily to every participant. Brown and Ryan found that the intervention was useful in improving day to day feelings of autonomy ($r = .27$, $p < .05$) and reducing unpleasant affect experiences ($r = .49$, $p < .0001$). Additionally, Shapiro and colleagues (2006) highlighted the core concepts of mindfulness to propose a theory that would highlight the importance in cognitive, emotional, and behavioral flexibility to reduce rigid and habitual patterns of reactivity that result in overidentification with

content experience. Shapiro and colleagues argued that flexible awareness promotes greater clarity to respond rather than react, which allows greater freedom for intentional choices.

Empirical Stance Toward Reality

The fourth quality of mindfulness is an *empirical stance toward reality* (Brown et al., 2007). This may stand in contrast to the more constructivist views of human nature, human experience, and therapeutic modalities, which claim that there is no objective truth (Gerstanmaier & Mandl, 2001). It should be noted that this empirical stance on reality is nuanced and not intended to bolster a rigid monopoly on reality or make staunch claims with intent to deny a person's lived experiences. Instead, an empirical stance toward reality is intended to explore the notion of whether people can accurately assess reality based on typical cognitive and attentional capacities. Given the tendency for people to categorize, compare, evaluate, and ruminate – a person's experiences may be more related to a superficial perception that is filtered through past experience, memory, bias, or prejudice, which may dilute the objective truth of the situation. Brown and colleagues (2007) argued that deeper perception requires "unprejudiced receptivity" (p. 204) to life, which enables greater non-reactivity to the common triggers of emotions, thoughts, and physical sensations and may offer a truer glimpse of reality beneath the perceptual filter.

Stability or Continuity of Attention and Awareness

The fifth quality of mindfulness according to Brown and colleagues (2007) is *stability or continuity of attention and awareness.* Stability of attention and awareness helps reduce blatant introjection of ideas, beliefs, and prejudices into fact without thorough analysis and exploration. It is also considered a necessary trait to reduce rumination about the past and anxiety about the

future, as well as to assist in attentional flexibility. The stability of attention through awareness enables better engagement with the present-moment and more awareness of distraction.

The recognition of a lapse in attentional awareness is an instance of mindfulness. Guzman (2021) explored the effects of mindfulness on sustained attention and short-term memory and found that mindfulness meditation improved sustained attention, which resulted in better attentional performance and significant enhancement of short-term memory. Bauer and colleagues (2020) also found that mindfulness training could preserve sustained attention and enhance cognitive control in a randomized controlled trial. They conducted an eight-week mindfulness intervention exploring the effects of school-based mindfulness training with an active control (code training) in a group of 99 sixth graders. Students met four times per week for 45 minutes, equating to 24 hours of group mindfulness practice at the end of the intervention. Based on measures such as a sustained attention and response task, attentional performance variables, student acceptability interventions, and magnetic resonance imaging (MRI) scans, Bauer and colleagues found that children in the mindfulness group preserved their sustained-attention performance (had fewer lapses in attention) across several validated measures compared to the active control. Clapper and colleagues (2021) found similar results when they conducted experimental research to explore the utility of a mindfulness intervention on sustained attention and its effect on mood. Clapper and colleagues guided a group of 118 undergraduate students in a breath counting task (a typical meditation practice in Zen Buddhism that is also helpful for becoming more aware of attentional lapse) to improve sustained attention. They found statistically significant linear and quadratic trends that suggested that students who reported greater rates of sustained attention in the task demonstrated a decrease in intensity of negative mood (particularly for those with higher rates of depression and anxiety) following the

treatment (linear: $F(1, 76) = 9.78$, $p = .003$, $\eta 2$ p = .11. quadratic, $F(1, 76)=.86$, $p=.018$, $\eta 2$ p =.072) .

Present-Oriented Consciousness

The final quality of mindfulness offered by Brown and colleagues (2007) is *present-oriented consciousness*, defined as the ability to bring one's whole self into the moment, emotionally, physically, cognitively, and spiritually (Bourgault & Dionne, 2019). Siegel (2007a) defined presence as "the bare awareness of the receptive spaciousness of our mind…to whatever arises at it arises" (p. 160-161). Presence is a combination of the ability to focus on the here and now with the intention to experience the now as it currently exists without interpreting. Parker and colleagues (2015) discussed the brain science of presence and offered a comprehensive literature review on the topic. They highlighted the benefits of mindfulness in reducing negative emotionality and stress and increasing the sense of purpose and agency. They concluded that mind wandering was associated with greater unhappiness and even biological ageing, whereas presence promotes well-being across psychological, biological, and social domains.

Present oriented consciousness is also helpful for various aspects of wellness. Brown and Ryan (2003) describe how mindfulness is linked to expanded wellbeing through the reduction in disillusion that occurs via a deeper presence and attunement to the present moment and a reduction in habitual autopilot. They claim that habitual autopilot is the norm for most people and a significant aspect of psychological suffering, whereas presence allows for optimal self-regulation and better awareness of states of dysregulation. Additionally, Bourgault and Dionne (2019) explored the links between therapeutic presence and mindfulness through the mediating role of self-compassion on psychological distress and found that presence improves self-compassion, which may also translate to other compassion. Presence was also statistically

significantly positively correlated to every facet of mindfulness on the FFMQ (Baer et al., 2008), including self-compassion (r = .54), observing ($r = 0.38$; $p < 0.01$), describing ($r = 0.39$;$p < 0.01$), acting with awareness ($r = 0.46$; $p < 0.01$), nonreactivity to inner experience ($r = 0.45$; $p < 0.01$), and nonjudgment of inner experience ($r = 0.42$; $p < 0.01$).

Mindfulness in Therapeutic Practice

Mindfulness is useful in therapeutic practice due to its direct links with developing characteristics of effective counselors (Siegel, 2010), its function in healing attachment wounding (Stevenson et al., 2017), and its capacity to reduce the effects of trauma (Kachadourian et al., 2021).

Manualized Approaches

Much like the foundations of Buddhist philosophy, which emerged as a combination of theory and practice to address the core of human suffering (Aich, 2013; Bodhi, 2000), so too does psychology provide guidelines for alleviating human suffering (Adler, 1951; Frankel, 1946; Freud, 1923; Rogers, 1961; Perls & Andreas, 1969; Perls et al., 1951). The integration of Buddhist philosophy and Western psychological theory is credited to the British Indologist, Rhys Davids, who translated the Abhidhamma Pitaka from Pali to Sanskrit in 1900 and published the book *Buddhist Manual of Psychological Ethics* (Rhys Davids, 1900) and later *Buddhist Psychology: An Inquiry into the Analysis and Theory of Mind in Pali Literature* (1914). As the 20th century evolved, clinicians and psychological writers such as Carl Jung, Erich Fromm, Alan Watts, Fritz Perls, Tara Brach, Jack Kornfield, and others began to bridge the gap between Buddhism and psychology (Aich, 2013). Buddhist influences can be seen in psychoanalytic theory, existential theory, gestalt theory, and cognitive-behavioral theories, however, Kabat-Zinn (1990) is credited with creating the first mindfulness-based psychotherapeutic model. To narrow

the scope of mindfulness in practice to the present study, only mindfulness-based psychotherapeutic modalities is presented.

- *Mindfulness-based stress reduction (MBSR)* – Mindfulness based stress reduction was the first coherent theoretical model of counseling that infused mindfulness practices into a manualized intervention (Kabat-Zinn, 1990). Kabat-Zinn is credited with the development of MBSR, an intervention developed to assist people in counteracting stress, establishing greater balance in body and mind, and stimulating wellbeing and healing. It is typically conducted over eight weeks, with 2.5-hour weekly classes and one full day retreat. It also includes homework of 45 minutes daily meditation practice. Aspects of the treatment include mindfulness meditation, body scanning, and basic yoga practices as well as group discussion and exploration of the utility of mindfulness in daily life.

MBSR is also helpful with nonclinical populations and thus may benefit counselors in training. Khoury and colleagues (2015) conducted a meta-analysis of 29 MBSR interventions comprising of 2668 healthy adult participants undergoing treatment to reduce stress and anxiety. Results from pre/post analyses found that MBSR was moderately effective at reducing stress and anxiety and improving quality of life in participants who engaged in treatment (Hedge's g = .55; 95% CI = [.44-.66], p <.001). Yusufov and colleagues (2018) also conducted a meta-analysis of stress reduction interventions for university students. With data from 43 studies comprising of 4400 participants, they also found that MBSR was effective in reducing anxiety (d = .62, p < .001, 95% CI = [0.37-0.87]) and perceived stress (d = .44, p < .01; 95% CI = [0.24-0.64]).

MBSR is also helpful in improving the wellbeing of healthcare professionals. Spinelli and colleagues (2019) conducted a meta-analysis of 38 randomized controlled trials comprising 2505 healthcare professionals and trainees to explore the links between MBSR and reduction in

anxiety, depression, psychological distress, stress, and burnout. They found statistically significant results to support MBSR as a useful intervention for healthcare professionals and trainees in reducing anxiety (Hedge's g = 0.47; 95% CI [0.27, 0.67]), depression (Hedge's g = 0.41; 95% CI [0.26, 0.57]), psychological distress (Hedge's g = 0.46; 95% CI [0.30, 0.62]), and stress (Hedge's g = 0.52; 95% CI [0.35, 0.69]). A small significant effect was also found on burnout (Hedge's g = 0.26; 95% CI [0.11, 0.42]). At follow-up, a significant small to moderate effect was found only for stress (Hedge's g = 0.34; 95% CI [0.11, 0.57].

- *Mindfulness-based cognitive therapy* (MBCT) – Mindfulness based cognitive therapy (Segal et al., 2002) is an evolution of MBSR that combines cognitive behavioral therapies with MBSR strategies to help people better understand and manage thoughts and emotions to alleviate psychological distress. MBCT is well established as a treatment for depression (Goldberg et al., 2019; Liu et al., 2019; Thimm & Johnsen, 2020), anxiety (Ghahari et al., 2020), and various psychiatric disorders (Chiesa and Serretti, 2017; Goldberg et al., 2018). MBCT is also established as a treatment to improve overall mental health and well-being, including reduction in repetitive negative thinking, improved self-compassion, reduction in emotional reactivity, and improvement in psychological flexibility (Gu et al., 2015). MBCT was also used as a school-based psychological intervention to improve student mental health and wellbeing (Šouláková et al., 2019).

- *Acceptance and commitment therapy (ACT)* – Acceptance and commitment therapy (Hayes et al., 2012) is a type of mindfulness-based therapy that emerged from functional contextualism and relational frame theory and is a form of third wave cognitive behavioral therapy (Hayes, 2004). ACT is based on the concept that acceptance practices paired with mindfulness strategies and commitment to behavior change increases psychological flexibility.

The purpose of ACT is not to try and change a person's behavior but to help them accept behaviors and be present with what is true for the individual to clarify values and needs to move toward action. The goal is to practice equanimity in the face of unpleasant experiences, to develop distress tolerance, and to improve emotional regulation. Increasing psychological flexibility is the primary goal of ACT, which is also a trait of effective counselors (Dajani & Uddin, 2015; Dennis & Vander Wal, 2010; Genç & Şahin, 2020.

- *Dialectical behavioral therapy (DBT)* – Dialectical behavioral therapy (Linehan et al., 1991) was originally developed to assist with clients with parasuicidal tendencies and borderline personality disorder after traditional cognitive behavioral therapy (CBT) was found to be less effective with this population. DBT combines CBT strategies for behavioral and emotional regulation with mindfulness practices intended to improve distress tolerance (e.g., through nonjudging), awareness (e.g., through paying attention), and acceptance (e.g., allowing) that emerged from traditional contemplative practices such as mindfulness meditation. DBT was designed with the goal of changing behavioral patterns that contribute to significant risks, such as self-harming behaviors and substance abuse – however, DBT is intended to treat numerous mental health issues. DBT clinicians assist clients in improving awareness of sensory experiences as felt through the five senses. This helps clients improve awareness of the emergence of needs and triggers to allow for better distress tolerance, emotional regulation, and interpersonal skills (Linehan, 2014).

Theoretical Approaches

While MBSR, MBCT, ACT and DBT serve as useful manualized approaches to integrate mindfulness training into clinical practice, researchers point to emergent neurobiological models of mindfulness that are pantheoretical but have strong implications for clinical work because

they expand coherence on the utility of mindfulness for developing traits of effective counselors and positive therapeutic relationships, including interpersonal neurobiology (Siegel, 2010), intersubjectivity (Trevarthen & Aiken, 2001; Schore, 2021), and polyvagal theory (Porges, 2011). These models provide in-depth understanding of the neurobiology of clients' experiences of safety and connection within the therapeutic relationship and how counselors can implement their own self-development to attune to their clients in a way that creates this safety.

- *Interpersonal neurobiology (IPNB)* – Interpersonal neurobiology, created by Daniel Siegel (1999), is a construct that has borrowed much of its theoretical foundation from attachment theory while also orienting itself to advances in neuroscience (Siegel, 2001; 2006; 2009; 2010; 2019). IPNB offers a conceptual model for how an insecurely attached person or those with early trauma backgrounds can overcome the associated negative effects through mindfulness training, which assists in the development of new neuronal pathways (Siegel, 2006). While IPNB is often considered pantheoretical in that it can be applied to a wide variety of fields (e.g., child development, parenting, neuroscience, trauma, etc.; Siegel, 2009), IPNB has strong implications for the field of counseling due to links between mindfulness, secure attachment, and counselor-client co-regulation. From an IPNB perspective, clients can experience changes on a neurobiological level when engaged in the safety of an attuned therapeutic relationship, and this process translates to positive therapeutic outcomes.

- *Polyvagal theory* – Polyvagal theory, conceptualized by Porges (1995; 2011), is a conceptual model that offers coherent understanding of the neurophysiological foundations of emotions, attachment, communication, and self-regulation. Porges described the relationship between autonomic nervous system (ANS) functioning and social behavior, explaining that the ANS is responsible for unconsciously regulating bodily functions (e.g., heart rate, digestion,

respiration, urination, etc.). The ANS is also responsible for regulating the sympathetic and parasympathetic nervous system, which includes fight-or-flight responses or the ability to regulate. Porges argued that the ANS has a third division that includes a social communication and engagement system (e.g., facial expression, hearing, and vocalizing), and that these three systems together affect trauma responses. Porges (2011) polyvagal theory hinges on the concept that people who become traumatized can become stuck in one of these response rates, which contributes to dysregulated arousal systems and subsequent mental health problems. This applies to the field of counseling because mind-body connection established through interventions like attunement in therapy is theorized to reset the ANS and repair the dysregulated arousal system (Porges, 2011; Siegel, 2010; 2019).

- *Intersubjectivity* – Intersubjectivity is a conceptual model of infant-caregiver interaction developed in the 1970's by Colwyn Trevarthen (Trevarthen & Aitken, 2001). Trevarthen conceptualized intersubjectivity as the synchronistic and rhythmic emotional response and nonverbal communications that occur in infant-caregiver interactions that contribute to mutual regulation and facilitate "experience-dependent maturation of the infant's right brain" (Schore, 2021, p. 1) and mutual alignment of mind and body between infant and caregiver. The intersubjective mother-infant attachment communications are accompanied by strong feelings and emotions, which are nested in nonverbal expressions, body language, and vocal tone and influences the child's development of self-regulation. This same process occurs in the therapeutic relationship (Badenoch & Cox, 2010; Baldini et al., 2014; Siegel, 2001; 2006; 2009; 2019). Advances in neuroscience, particularly research into brain laterality and hemispheric asymmetries allows researchers to better understand "the intersubjective

protoconversation as a right-lateralized, reciprocal, and nonverbal emotion communication system" (Schore, 2021, p. 4).

Intersubjectivity is best defined as the field of neuroscience that explores "implicit communication of affective states between the right brains of the members of the infant-mother and patient-therapist dyad" (Schore & Schore, 2008, p. 13), which directly relates to attachment theory, IPNB, and polyvagal theory. Schore (2001) found that dysregulation of the right brain is an aspect of traumatic attachment that contributes to ineffective stress coping mechanisms in childhood and subsequent adult trauma disorders. Additionally, Schore (2008) described how nonverbal right brain communications of counselors express the personality of the therapist more than conscious verbalizations and give affective cues that can guide relational communication, which has a direct relationship to counselor-client psychological contact. IPNB, polyvagal theory, and intersubjectivity stress the importance of wellness for the individual who functions as the secure base in any relationship, be it infant-caregiver or counselor-client. Proponents of neurobiological models stress the value of mindfulness practices for developing the capacity to be a secure attachment figure to facilitate co-regulation.

Counselor Education

To understand how to best integrate mindfulness into counselor education, it is first helpful to have insight into the scope of counseling program requirements, clinical training environments, and accreditation standards. Updates to counselor training standards occur regularly (CACREP, 2016; MSJCC: Ratts et al., 2016) and typically focus on specific categories, including counseling skills, organizational and management skills, personal characteristics, and wellness (Glenn et al., 2015). Counselor educators rely on various standards to teach students the specific techniques used in therapy, how to case conceptualize, how to create and effectively

implement a treatment plan, and how to maintain professionalism within the bounds of the field (CACREP, 2016). While there are multiple types of counselor training programs across the United States, including clinical mental health counseling, marriage and family therapy, rehabilitation counseling, and school counseling, there are also various practice standards related to each field with their own code of ethics and their own accreditation standards. To narrow the scope, the focus for this study is on clinical mental health counseling students operating under the Code of Ethics of the American Counseling Association (ACA, 2014) with a CACREP program.

CACREP

The Council for the Accreditation of Counseling and Related Educational Programs (CACREP, 2016) is the accrediting body that functions to standardize counseling training within the United States. CACREP began in 1981 in collaboration between the *Association for Counselor Education and Supervision* (ACES) and the *American Personal and Guidance Association*, (now known as the American Counseling Association) with the intent of creating comprehensive standards for graduate counseling programs (Merlin et al, 2017; Urofsky, 2013). CACREP was formed to address varying concerns that continued to emerge within the field of counseling, such as lack of guidelines for training expectations, ambiguous professional identity, and issues with credibility (Urofsky, 2013). CACREP identifies its central mission to be "the development of preparation standards, the encouragement of excellence in program development, and the accreditation of professional preparation programs (CACREP, 2016, para. 54). CACREP standards are periodically updated to address changes in the overall field of counseling (Adams, 2005)

CACREP Standards

CACREP standards have six sections (with eight subsections in section five) that pertain to appropriate counselor training and development (CACREP, 2016). Section one sets expectations for the learning environment, including standards pertaining to the institution, the academic unit, and program faculty and staff. Section two pertains to professional counseling identity, including foundational standards and those compromising the eight required core curriculum areas. The eight core curriculum areas include professional counseling orientation and ethical practice, social and cultural diversity, human growth and development, career development, counseling and helping relationships, group work, assessment/testing, and research/program evaluation. Section three is an overview of professional practice, including standards required for clinical practice, practicum, internship, supervisor qualifications, and practicum/internship course loads. Section four outlines the evaluation standards of the program, including assessment of students and evaluation of faculty and site supervisors. Section five offers specialized content areas with eight subsections for various specialties. The specialty areas include additional content for addiction counseling, career counseling, clinical mental health counseling, clinical rehabilitation counseling, college counseling, marriage/couple/family counseling, school counseling, and rehabilitation counseling. The final section offers additional standards for doctoral students in counselor education and supervision programs, including specialized content specific to this population and doctoral-level internship requirements.

While no known research has specifically identified links between counselors who trained in CACREP programs and improved client outcomes, CACREP claims to provide counseling students with a better educational experiences and better preparation to succeed in the profession. Primarily, CACREP accredited programs are evaluated for content and quality,

meaning that the expected educational standards a student would receive at a CACREP intuition is high (Urofsky, 2013). Additionally, CACREP programs function to meet or exceed national standards, which may provide greater trust in the education quality received. CACREP accreditation also ensures that universities offering programs are financially stable to reduce the likelihood of interference with program completion should the school fail to thrive. CACREP standards also help distinguish the field of counseling from the field of social work and psychology, which is important given the degree of confusion that prospective graduate students may experience when attempting to choose a program. Finally, CACREP accreditation better attends to training prerequisites for licensure exams (ACA, 2014). The American Counseling Association has recently stated that the National Counselor Certification (NCC) credential from the National Board for Certified Counselors (NBCC) will change beginning January 1, 2022, requiring individuals applying for the NCC to have a degree from a CACREP program.

CACREP Clinical Standards

CACREP standards for clinical mental health counseling (CMHC) fall into three categories: foundations, contextual dimensions, and practice. Students preparing to specialize in CMHC are expected to demonstrate the knowledge and necessary skills to address various circumstances within their role as a counselor. Programs with a CMHC specialty must meet expectations covered in the CACREP (2016) standards section 5C.

The foundation section provides specification on adequate training and development of CMHC. This includes theories, models, principles, and documentation from a biopsychosocial approach for case conceptualization and treatment planning. Additionally, neurobiological and medical foundational understanding and the etiology of addition and co-occurring disorders is

required, as well as basic understanding of psychological tests and assessments specific to CMHC.

The contextual dimensions section provides specification of training in the roles and settings in which a CMHC student may find themselves. This includes the etiology, nomenclature, treatment, referral, and prevention of mental and emotional disorders, and mental health service delivery modalities (e.g., inpatient, outpatient, partial hospitalization, etc.). It also covers the diagnostic process within the context of the *DSM*-5 (APA, 2013). Additionally, section two covers training on substance abuse, co-occurring disorders, and neurological, medical, and psychological disorders that are often comorbid with addiction. It also offers guidelines on appropriate training for managing crisis and trauma, the impact of neurological and biological mechanisms on mental health, and basic understanding of psychopharmacology, including indications/contraindications and commonly prescribed psychopharmacological medications. Finally, section two also covers legislation and government policy relevant to CMHC, cultural factors, professional organizations, preparation standards, and credentials relevant to CMHC, as well as legal and ethical considerations, record keeping, managed care, and practice management issues.

The practice section covers aspects of clinical practice, including intake procedures, mental status exams, case history, assessment, treatment planning, and case management. It also provides an overview of techniques and interventions for prevention and treatment of mental health issues, strategies for interfacing with the legal system in the case of court ordered clients, strategies for interacting with integrated behavioral health programs, and advocacy responsibilities for persons with mental health issues (CACREP, 2016, section 5C).

CACREP Master's Program Standards

CACREP master's counseling programs require 60 credit hours of training (CACREP, 2016). In a typical CACREP accredited counseling master's program, key performance indicators identify the links between what is being learned in the classroom and specific CACREP standards. To ensure this process, syllabi for each class are required to identify which CACREP standards it covers to ensure comprehensive counseling education (CACREP, 2016). Audits are regularly performed in CACREP accredited institutions to ensure compliance.

Practicum in CACREP

Clinical practicum in a CACREP program is the time when master's students have their first contact with actual clients. Practicum requires master's students to engage in a minimum of 100 hours, with 40 of those hours being direct client service. During clinical practicum, master's counseling students begin their work as counselors with real clients in a highly structured and supervised environment. Some CACREP counseling programs have an on-site clinic that allows for closer monitoring of the severity of counselor's cases, while other programs require students to find an external practicum site. External sites may not always regulate the severity of clients for counselors to the same degree as university on-site clinics; thus, readiness for real-world counseling is vital once practicum begins. Once practicum is completed, master's students move on to clinical internship, where they are required to meet a minimum of 600 hours with 240 direct client hours.

As is evident, CACREP provides comprehensive guidelines for counselor training and development. However, one thing that is missing from typical counselor training standards is guidance on developing facets of mindfulness (Reilly, 2016). Reilly highlighted the benefits of integrating mindfulness into counselor education through immersion in CACREP standards due

to the way that mindfulness coheres with the main counselor values – wellness, development, and prevention – as well as improve characteristics of effective counseling while reducing barriers.

Integrating Mindfulness into Counselor Education

Given the benefits of mindfulness for counselor development and the priority of self-awareness outlined by CACREP standards, mindfulness training may be an important facet of counselor education. Incorporating mindfulness training into counselor education coheres with counseling values such as wellness, prevention, and development (Mellin et al. 2016; Reilly, 2016). Wellness, prevention, and development distinguish counseling from other mental health professions and are core components of the CACREP (2016) standards. Mindfulness practices are efficacious for improving myriad aspects of human development, and the overlap between mindfulness and counseling as a source of self-knowledge is clearly established, particularly as it aligns with humanistic counseling principles and therapeutic change (Hanna, 1993b, Hanna et al., 2017).

Researchers do provide ways to integrate mindfulness training into pedagogical models of counselor education (Bohecker et al., 2014; Buser et al., 2012; Campbell & Christopher, 2012; Duffy et al., 2017; Lee & Himmelheber, 2016; Schrue, Christopher, & Christopher, 2008). Campbell and Christopher (2012) created a three-credit mindfulness course for master's counseling students at their university that was loosely based on the MBSR program developed by Kabat-Zinn (1990). The purpose of this course was to provide students with self-care strategies and familiarize them with mindfulness and its relevance to counseling. The class times occurred twice a week for 2.5 hours at a time over 15 weeks. After basic education in mindfulness practices, yoga, and qi gong, a Vipassana (insight-meditation) approach was taught

to students. Vipassana is a way of focusing on present awareness through counting breaths, which begins with awareness of the senses and thoughts and eventuates into *choiceless awareness,* a process of allowing the contents of mind to come and go without craving or aversion. This course ran for nine years, at which point Campbell and Christopher (2012) qualitatively explored students' experiences. Students reported significant benefits, including increased awareness of self and other, more self-compassion, better awareness of internal stress responses, improvement in creating holding environments with clients, better emotional regulation, greater capacity for presence, reduced rumination, more comfort with therapeutic silence, more awareness of countertransference issues, and improved therapeutic relationships with clients. Other students reported becoming more patient, aware, focused, compassionate, empathetic, attentive, responsive, and capable of handling strong emotions with less defensiveness, reactivity, and judgementalism. They also reported being less defensive and more receptive to feedback from supervisors and instructors.

Other qualitative researchers exploring the benefits of mindfulness for counselor training found that mindfulness practices improve therapeutic presence in graduate counseling students and the ability to engage in the dual process of self and other attunement (McCollum & Gehart; 2010). Using a sample of 13 practicum counseling students, McCollum and Gehart provided a mindfulness intervention embedded into class time then encouraged at-home practice paired with weekly required journaling over the semester. Journal prompts included describing their experiences, learning mindfulness meditation, and exploring the effects it had on their personal lives and clinical practice. The research team conducted thematic analysis of their journal content through a social constructivist lens and primarily focused on the students experience of meditation, effects on wellbeing, and obstacles to practice. The researchers identified several

themes from the study, including better ability to be present, feeling more centered, better attention to inner experience, better awareness of what was happening with clients, and merging of inner and other awareness to improve counselor-client interaction. Other subthemes included shifting from doing to being as a therapeutic approach – which indicated self-reported positive effects on clients. Finally, students also reported an increase in overall presence, compassion and acceptance.

A few years later, Duffy and colleagues (2017) used phenomenological qualitative analysis to explore 23 counseling students' experiences of mindfulness infused into a theory and practice course. They interviewed 14 participants currently taking the mindfulness-infused course and nine from the prior year to understand experiences retrospectively. They infused mindfulness-based activities into the course with allowance for students to opt out who did not wish to participate. They also ensured the intervention was overseen by an instructor with a personal mindfulness practice and ten years of integrating mindfulness into counselor education. Techniques included discussion on the benefits of mindfulness for developing counselor presence, engaging in non-judgmentalism of client experience, and practicing equanimity in the face of difficult emotions. Practice included ten minutes of meditation at the beginning of each class time, followed by brief discussion. Data collection was conducted via participant interviews and coded into themes. Overarching themes included student-reported benefits in areas of engagement, learning, the experience of group supervision – and in counseling work via the process of fuller engagement through improved presence. Students also reported initial hesitation and disregard for the mindfulness training, but quickly reported recognition of its utility and their benefit from the experiences.

Benefits of mindfulness for counselor development do not necessarily require an entire

course. Lee & Himmelheber (2016) incorporated a 14-week mindfulness practice into a social work graduate training program to explore the development of the five facets of mindfulness (FFMQ), including observing, describing, acting with awareness, nonjudging of inner experience, and non-reactivity of inner experience. There were 56 students in the study, with 27 in the intervention group and 29 in the control group. The results showed statistically significant changes for three facets of mindfulness, including observing, nonjudgement of inner experience, and nonreactivity. Others also incorporated brief mindfulness training into counselor education with positive outcomes. Buser and colleagues (2012) assessed the effects of a five-week mindfulness intervention on skills development with 59 master's level trainees. The specific skills measured included the ability to *develop relationships* and the ability to *encourage exploration*. The study included three groups, a five-session mindfulness practice group, an 11-session mindfulness practice group, and a control group, with results suggesting that those who engaged in both the five-session group and the 11-session group showed statistically significant positive differences in developing relationships compared to the control group $F(2,56) = 5.049$, $p < .05$, with a medium to large effect size for the five-session group compared to control ($d = .77$), and a large effect size for the 11-session group compared to control ($d = .92$). Results measuring encouragement of exploration were similar $F(2,56) = 4.336$, $p < .05$, with a medium effect size for the five-session group compared to control ($d = .67$) and a large effect size for 11-session group compared to control ($d = .82$). Interestingly, there was not a statistically significant difference between the five-session and the 11-session group (develops relationships; $d = .16$, encourages exploration, $d = .26$), which may suggest the benefits for brief mindfulness interventions for rapid skills improvement in counselor education.

The benefits of mindfulness training for counseling students can also be seen via

improvements in attunement within the therapeutic relationship. Schomaker and Ricard (2015) conducted a quasi-experimental study to evaluate the results of a 6-week mindfulness training program for facilitating counselor-client attunement using five students who participated in a mindfulness training and four who served as the control group. Students in the mindfulness group engaged in six weeks of in-class mindfulness training using a two-part manualized mindfulness-based practice. The first part included practices from Kabat-Zinn's (1994) MBSR and the second included interpersonal practices and relational skill building with the goal of practically linking mindfulness practices to clinical work. During the training, participants also discussed the mindfulness meditation effects on their personal and professional lives and were instructed to keep a journal, practice daily mindfulness outside of class, and engage in self-monitoring. The overall training included nine hours of mindfulness meditation practice. At the end of the study, they calculated counselor-client attunement scores based on a clinical measure of attunement and the researchers discovered that the mindfulness group demonstrated attunement levels at 1.58 times greater than the non-mindfulness trained comparison group. Though their sample size was small, and they did not equate groups at baseline, the analysis provides plausible evidence to the benefit of the mindfulness protocol for improving counselor-client relational attunement. Additionally, these results also demonstrated the benefits of mindfulness for overall counselor skill development, because the counselors in the mindfulness intervention group had significantly less clinical experience than the comparison group but had higher client-rated attunement scores than the more experienced clinicians who did not participate in the mindfulness training.

Other researchers provide additional benefits for mindfulness training across a spectrum of counselor development. For example, there is evidence to the links between counseling

student degree of empathy and mindfulness training (Bohecker & Horn, 2016; Fulton & Cashwell, 2014; Greason & Cashwell, 2009). Bohecker and Horn (2016) conducted a Solomon 4-group design with 22 first year counseling students to examine the relationship between a mindfulness experiential small group (MESG), mindfulness skills, empathy, counseling self-efficacy, and perceived stress for counselors in training. The outcome measures used in this study included the Five Facet Mindfulness Questionnaire (FFMQ), the Interpersonal Reactivity Index (IRI), the Counseling Self-Estimate Inventory (COSE), and the Perceived Stress Scale (PSS). Results confirmed no statistically significant differences between the groups at pretest, but there were statistically significant differences in mindfulness scores between pre and posttest ($t(20) = 2.455$, $p = .023$), for those who received the intervention compared to control. The strongest differences included those from the FFMQ subscale "acting with awareness", "observing", and "describing". Additionally, they also found empathy scores for the treatment group to be statistically significantly different than the control group ($t(20) = 3.008$, $p = .007$). Finally, counseling self-efficacy was also statistically significantly higher in the treatment group ($t(20) = 2.419$, $p = .025$). Perceived stress results were nonsignificant, which the authors considered an unexpected result when compared to prior research with the same mindfulness intervention. They hypothesized that this might be related to measurement issues with the PSS, particularly with the scales on life viewed as unpredictable and uncontrollable, coupled with the regular and ongoing stress of graduate school.

Other researchers corroborate the utility of counseling student mindfulness training for building empathy. Fulton and Cashwell (2015) conducted a hierarchical multiple regression with data provided by 152 counseling master's students to explore predictors of counselor empathy and anxiety. Using the FFMQ and various other validated measures for exploring mindfulness,

reactivity, and anxiety, they found that awareness and compassion had a statistically significant relationship with empathy. More specifically, they tested whether compassion would augment awareness to explain the variance in affective empathy, cognitive empathy, and anxiety and found that the overall model of awareness and compassion had a statistically significant relationship with affective empathy (F,(3,148) = 9.82, $p < .001$), which explained 14.9% of the total variance, and compassion toward others was a significant predictor of affective empathy ($\beta = .42$, $p < .001$). Additionally, awareness and compassion had a statistically significant relationship with cognitive empathy ($F(3,148) = 8.96$, $p < .001$), which explained 13.6% of the variance in the total model. Finally, they found that subscales of the FFMQ (e.g., acting with awareness and non-judging) had a statistically significant negative relationship with anxiety, accounting for 39.6% of the variance in the total model.

Mindfulness training for counseling students is also helpful in improving social-emotional competence (Alahari, 2017). Testa and Sangganjanavanich (2015) examined the relationship between mindfulness, emotional intelligence, and burnout among 380 counseling interns. They defined emotional intelligence as the ability to monitor feelings and emotions of self and others, to discriminate among them, and to use this information to guide thinking and action. Using the FFMQ and other validated measures for exploring emotional intelligence and burnout, the researchers conducted a canonical correlation and found that higher scores on emotional intelligence combined with higher scores on mindfulness aligned with lower burnout scores, specifically the emotional exhaustion and depersonalization subscales of the burnout measure. Higher emotional intelligence was also associated with higher personal accomplishment. The full model across all functions was statistically significant using the Wilks's $\lambda = .63$ criterion, $F(18, 1050) = 10.20$, $p = .000$. For the set of two canonical functions,

the R^2-type effect size was .39, which indicates that the full model explained approximately 39% of the variance shared between the variable sets.

Improved counseling student self-efficacy is also a benefit of mindfulness training (Turkam, 2020). Butts and Gutierrez (2018) explored the influence of dispositional mindfulness and personal distress on self-efficacy with 162 counseling students. Using the FFMQ and other validated measures for exploring distress and self-efficacy, Butts and Guterriez conducted a hierarchical multiple regression to explore predictors for counseling student self-efficacy. After controlling for both cognitive and affective empathy, empathic concern and perspective taking were statistically significant predictors, ($F(2, 152) = 7.32$, $p < .001$) accounting for 9% of the variance in self-efficacy ($R^2 = .09$, $p < .001$). Additionally, they explored dispositional mindfulness and personal distress as predictors for self-efficacy and the model was statistically significant ($F(2,152) = 13.79$, $p < .001$) and explained 18% of the variance in self-efficacy ($R^2 = .18$, $p < .001$). Deeper examination of beta weights suggested that some masking effects occurred, meaning that the statistically significant predictors in the model ended up being dispositional mindfulness ($\beta = .33$, $p < .001$) and personal distress ($\beta = –.25$, $p = .001$); thus, for every unit of increase in counseling self-efficacy scores, there was a 0.33 increase in dispositional mindfulness scores and a 0.25 decrease in personal distress scores.

Additional benefits of mindfulness training for counseling students are varied. Certain researchers discovered that mindfulness infusion into counselor training helps with improved self-care (Christopher et al., 2006; Friedman, 2017). Christopher and colleagues (2006) conducted qualitative research with focus groups of counseling students to explore the utility of mindfulness training for improved self-care, and student participants reported positive benefits such as increased calm, improved focus, and greater presence with self and others. Additionally,

mindfulness infusion into counselor education is found to improve self-awareness about fear-based triggers such as death anxiety (Stella, 2016). Mindfulness training in counselor education is also linked to improved professional identity. Dong and colleagues (2017) conducted qualitative research to explore the utility of mindfulness on professional identity development in 16 counseling students, and themes included a reduction in burnout symptoms, improved sense of energy in counseling work, greater acceptance of internal experiences during times of stress, and a positive shift in perspective on their role as a counselor (e.g., alleviating the sense of needing to fix/save the client and increasing connection). Finally, researchers exploring mindfulness training for counseling students discovered that it helps improve multicultural counseling competence (Ivers et al., 2017; Martinez & Dong, 2020). Using data from the FFMQ and other validated measures for multicultural counseling competency, Martinez and Dong explored data from 199 masters counseling students and found a significant relationship between total mindfulness and multicultural awareness, $F(1,197) = 9.59$, $p = .002$ and multicultural knowledge, $F(1,197) = 7.30$, $p = .008$.

Aside from the positive benefits of teaching mindfulness to counseling students, it has also been linked to more positive coping and reduction in negative aspects of the counseling profession, including reducing burnout (Testa & Sangganjanavanich, 2015), improving ambiguity tolerance (Bohecker et al., 2016), reducing stress and rumination (Shapiro et al., 2007), and reducing overall anxiety (Fulton & Cashwell, 2014). Despite the evidence to suggest that mindfulness training 1) assists in the development of all identified characteristics of effective counselors 2) reduces negative aspects of the field including burnout, anxiety, and ambiguity, and 3) improves the therapeutic relationship, which is responsible for better client outcomes (Wampold, 2015), CACREP standards continue to provide no guidance on the utility

of mindfulness for training effective counselors (Reilly, 2016). Ultimately, there appears to be barrier between linking counselor mindfulness training to client outcomes.

Bridging Theory and Practice of Mindfulness in Counselor Education

Infusing mindfulness into counselor education requires understanding of both theoretical and experiential models of mindfulness. Theoretical models help contextualize the links between counselor development and client outcomes, which may improve the perceived value of mindfulness as an educational paradigm in counselor education. Subsequently, experiential models allow for the development of practical strategies that allow students and clients to reap the benefits of the theoretical constructs.

Theory

Interpersonal neurobiology is a theoretical model that provides coherence to the direct benefits of mindfulness training for counselors, including its links to the fields of trauma, attachment, and therapeutic relationships (Baldini et al., 2014; del Olmo de Dios et al., 2020; Fishbane, 2007; Gantt & Cox, 2010; Goodrich, 2015; Marks-Tarlow, 2014; Schore, 2021; Siegel, 2001; 2006; 2009; 2010). Understanding the multifaceted links between trauma, attachment, and mindfulness is vital to counselors and counselor educators who wish to better understand the integral functions of the therapeutic relationship and how this is cultivated neurobiologically to facilitate client healing. IPNB provides information on the mirror neuron system and the brain's neuroplasticity and the role of these functions on facilitating wellbeing between client and counselor through co-regulation (Baldini et al., 2014; Bruce et al., 2010; Falb & Pargament, 2012; Koloroutis, 2014; Mernaugh et al., 2020; Schomaker & Ricard, 2015; Schore & Schore & Schore, 2008; Turner, 2009).

The neuroscience of co-regulation may be best understood by Siegel's (2010) concept of therapeutic *resonance*, often called mutual attunement or relational coherence (Siegel 2006; 2009; 2010; Geller & Porges, 2014; McCraty and Childre, 2010; Schore, 2021). Various researchers described the psychotherapeutic resonance process as an integral part of treatment (Larson, 1987; Siegel, 2013; Silverberg, 2008; Sprinkle, 1985; Vanaerschot, 1997; Watson & Greenberg, 2009). Additionally, the science of physics defines resonance as a unification in the fundamental structures of matter and energy in the universe (Periera, 2015), and this can be easily observed through music when one instrument begins vibrating and triggers a mutual vibration of an interconnected object with the same frequency. Within the therapeutic relationship, Larson (1987) described resonance as "the emergence of an experientially intense harmonic resonance system when therapist-client selfhood boundaries momentarily merge, leading to an experience of illumination" (p 323). Siegel (2010) defined resonance as a mutually felt sense of empathic attunement.

Whether it is referred to as co-regulation, resonance, or relational coherence, researchers consistently find this process to be vital to improved client outcomes (Schore, 2021; Siegel, 2010; Vanaerschot, 1997). Schore (2021) provided a comprehensive overview of the intersubjectivity of interpersonal neurobiology, which outlines the neuroscience of human-to-human connection by describing how an empathically attuned counselor enters into the resonance process with a client. Schore described how the intuitive counselor "surrenders" (p. 14) into a dramatic shift from the left hemispheric posterior temporoparietal part of the brain responsible for receptivity to language, grammar, semantics, and syntax in verbal communications to the right brain posterior temporoparietal system that processes nonverbal emotional expressions. He stated that the counselor's key role is not to intellectually understand

the client but to emotionally listen and subjectively feel the client, which facilitates open receptivity through counselor presence and allows the client to feel felt by the therapist (Schore, 1994).

Practice

With the theoretical model of IPNB and the brain science of intersubjectivity, a coherent theoretical understanding of the utility of mindfulness in counselor education can be observed. With this theoretical understanding comes the pragmatic need for experiential learning. One way to address this is through smartphone mindfulness applications as a mode of self-directed learning. The utility of smartphone applications for learning mindfulness is established through randomized controlled trials and meta-analysis (Cox et al., 2018; Goldberg et al., 2021; Guterrez et al., 2020; Huberty et al., 2019; Linardon et al., 2019; Mani et al., 2015; Sommers-Spijkerman et al., 2021). Many of these applications serve as a convenient and evidence-based method for mindfulness education and are accessible by anyone who has a smartphone. The benefits of smartphone-based mindfulness training are vast, yet the primary concerns with any training are typically pragmatic. Smartphone mindfulness applications are accessible by anyone who has a cellular device capable of running the program. Given the regular integration of online content in education over the last several decades it can be assumed that most graduate students have access to a smartphone (Syngene Research, 2019). Cost is also a factor that must be considered. There are some smartphone mindfulness applications that are completely free, which reduces financial barriers to access compared to other applications that require a monthly subscription fee. Quality of content must also be considered; thus, an appropriate model should be transparent in its development and implications.

An experiential training option that meets many pragmatic needs for mindfulness training in counselor education is the Healthy Minds application. Created through years of rigorous research, the Healthy Minds application was developed in collaboration with The Center for Healthy Minds – a research institute established by neuroscientist Dr. Richard Davidson. The goal of the Center for Healthy Minds is to expand neuroscience research into ways to improve wellbeing beyond laboratories. In 2012, Dr. Cortland Dahl, then a Ph.D. student under Dr. Davidson, made a scientific case for studying different forms of meditation and practice to cultivate a new scientific framework and approach for wellbeing. What emerged became Healthy Minds Innovations in 2014, and the first version of the Healthy Minds application in 2016. In 2018, Healthy Minds was piloted with several workplace organizations to help reduce the epidemic of stress and burnout in the workplace. Finally, in 2019, the Healthy Minds smartphone application was made available to individual users and is available now in over 130 countries. The overall mission of The Center for Healthy Minds and Healthy Minds Innovations is to develop a kinder, wiser, and more compassionate world through the cultivation of wellbeing and the relief of suffering through a scientific understanding of the mind. This mission strongly aligns with the *Code of Ethics of the American Counseling Association* (American Counseling Association, (2014).

The guided nature of the Healthy Minds application has several advantages. It reduces the need for counselor educators to have extensive experience teaching mindfulness techniques to students, though the need for some mindfulness background is still encouraged to maintain congruence (Stauffer & Pehrsson, 2012). Additionally, Healthy Minds reduces issues of access because most graduate students have a smartphone and the application is fully usable at no cost, which stands in contrast to other well-known smartphone mindfulness applications such as Calm

or Headspace. The access that Healthy Minds provides also assists with sustained practice both in class and as part of homework or guided personal practice because the student is not reliant on memory from what was learned in class but can access the application at any time. Healthy Minds also has a tiered training protocol, which means that it is suitable for even the most novice practitioner. It is also streamlined for ease of use, with varying foundational, intermediate, and advanced trainings partitioned into four categories, including awareness, connection, insight, and purpose. Each category has specific and scientifically based guided meditations to develop these qualities.

Healthy Minds in Research

Researchers conducting randomized controlled trials explored the utility and efficacy of the Healthy Minds application in teaching mindfulness to college students (Goldberg et al., 2021) to reduce negative mental health symptoms and improve facets of mindfulness. Goldberg and colleagues instructed students to practice using the application at home over a duration of time using content only from the awareness and connection sections of the application. The results of the study highlighted a small but impactful decrease in psychological distress ($d = .28$). Unsurprisingly, they also found that motivation was a barrier to bigger results, highlighting studies that incorporate in-person training as typically producing greater effect sizes (e.g., $d = .55$; Goldberg et al., 2018). Potential future research may benefit from both in-person practice using the application, as well as guidance for at-home use.

Counselor Mindfulness for Therapeutic Presence and Client Outcomes

Almost no research points to the direct links between counselor mindfulness and client outcomes with little exception (Avera, 2017; Grepmair et al., 2007; Periera et al., 2017; Ryan et al., 2012). Additionally, there is a paucity of research on the relationship between counselor

mindfulness and clients' perceptions of therapeutic presence, a foundational factor in building the therapeutic relationship and improving client outcomes (Flückiger et al., 2018; Lambert; 1992). While client outcomes should represent the final measurement of effective counseling, research on effective counseling is often done on counselor trait development (Avera, 2017). While the current research offers vital information for counselor training, it also has blind spots. Mental health practitioners often underestimate the number of clients who benefit from treatment (Hannon et al., 2005; Saypta et al., 2005), highlighting the need to take client-reported outcome measures seriously.

Rare but impactful attempts to directly link practitioner mindfulness, improved therapeutic presence, and client outcomes provide support for the growing research potential of this field. For example, Grepmair and colleagues (2007) conducted a randomized controlled trial in a psychiatric inpatient clinic with trainee psychiatric interns in Germany. The experimental group (n = 9) received one hour of daily Zen meditation instruction by a Japanese Zen master and engaged in daily practice, while the control group (n = 9) did not receive instruction or guidance in practice. The client outcome measure included perspectives on clarifying goals, solving problems, and perceptions of the therapeutic relationship. It also had a symptomology component, which included somatization, social problems, obsessions, anxiety, anger, phobias, paranoia, and psychosis. At post treatment, clients demonstrated statically significant differences in problem solving, problem clarification, overall symptom change, and significantly higher ratings of the therapeutic relationship in the treatment group compared to the control (MED [n = 63] = 224.9 ± 34.9; noMED (n = 61) = 209.3 ± 23.8; $p < 0.01$).

Other researchers continue to explore the links between practitioner mindfulness and client-reported outcomes in correlational research (Ryan et al., 2012). Ryan et al. explored the

association between therapist dispositional mindfulness, the therapeutic alliance, and client-reported outcomes with a group of 26 therapy interns and psychiatry residents and their clients in an inpatient center. They split the dyads into two treatment groups (brief relational therapy and cognitive behavioral therapy) and assessed therapist dispositional mindfulness at baseline. The results showed that total therapist mindfulness was positively correlated with the working alliance ($r = .456$, $p < .05$), highlighting a medium effect size. Additionally, the therapist dispositional mindfulness trait of acting with awareness from the FFMQ (Baer et al., 2008) was positively correlated with client-reported ratings of the working alliance ($r = .379$, $p < .05$), highlighting a medium effect size. Therapist total mindfulness was also statistically significantly correlated with overall client reported change in symptoms ($r = .481$, $p < .05$) and the accept without judgement subscale (Baer et al., 2008) was statistically significantly correlated with client reported overall improvements on the outcome measure ($r = .547$, $p < .05$), which accounted for 30% of the variance in the client-reported improvement in interpersonal functioning.

While the two former studies explored the utility of clinician mindfulness for improving therapeutic presence and client outcomes in psychiatric inpatient settings, other researchers explored rates of mindfulness on clinical psychology trainees. Swift and colleagues (2017) conducted a randomized controlled crossover trial to explore the role of mindfulness in student psychotherapists and its impact on therapeutic presence and client outcomes. Their study included a brief five-week manualized mindfulness training program compared to a waitlist control. The trainees in their treatment condition meditated for thirty minutes once per week for five weeks, and the students in the mindfulness group showed statistically significant higher levels of presence in treatment compared to control ($t(83.82) = 2.18$, $p < .05$), though client

outcomes did not suggest differences in presence or session effectiveness between the two groups. One possible explanation is the short duration of this study, which may be a significant limitation, particularly in light of the research on frequency and duration influencing deeper mindfulness traits such as insight and equanimity (Eberth et al., 2019), which may be necessary to translate to client-reports.

Finally, one known study has explored the role of mindfulness training and the working alliance on client outcomes in CACREP counseling students. Avera (2017) explored the links between mindfulness training in 40 counseling students and their 94 outpatient clients. He also explored counselor dispositional mindfulness, state mindfulness, and the working alliance at baseline and again at the end of the mindfulness intervention. Treatment protocol included five minutes of mindfulness meditation by the counseling students once per week prior to seeing clients in the university outpatient counseling center over the duration of a semester practicum. At the end of the intervention, the mean client outcomes as measured by the Outcome Rating Scale (ORS: Campbell & Hemsley, 2009) showed statistically significant improvements in in both groups ($F(2, 192) = 17.46$, $p < .001$) across time but no statistically significant interaction of time by group ($F(2, 192) = 4.49$, $p = .037$), indicating that meditation had no measured effect on specific client outcomes. However, there was a statistically significant result for the effect of session duration and therapeutic alliance, with each unit increase in session the client attended corresponded to a .25 increase in the client outcome measure, and each increase in reported bond related to an increase in outcome scores.

While very little experimental research exists to link counselor mindfulness to client outcomes, even less experimental research exists on linking counselor mindfulness to client's report of therapeutic presence. Further exploration of this hierarchical effect may improve

understanding of the co-regulation process, which may improve understanding of what is responsible for client outcomes.

Frequent Problems with Mindfulness Research

Several barriers are identified that may provide insight into the breakdown between mindfulness research in counselor education and integration into standard counselor training (Buser et al., 2012; Christopher & Maris, 2010; Greason & Cashwell, 2009; Periera et al., 2017; Rothaupt & Morgan, 2007). The first barrier is that researchers encourage counselor educators to have a mindfulness practice if they want to teach mindfulness to counseling students, meaning counselor educators need more exposure to this method of instruction that is not always possible. However, this ensures congruence and the maintenance of the ethics of scope of practice (Kabat-Zinn, 2003; Rothaupt & Morgan, 2007; Stauffer & Pehrsson, 2012). The second barrier is that varying levels of participant mindfulness traits at the beginning of the study contribute to significant outliers in the data (Pereira and colleagues (2017), which often requires more sophisticated statistical analysis to overcome. The third barrier is the subjective nature of the mindfulness change process (Buser et al. 2012), which makes it difficult to accurately measure the construct in action. The fourth barrier includes issues with participant self-motivation to practice between sessions, which reduced effect sizes in a randomized controlled trial (Goldberg et al., 2021). Sustained practice is confirmed to improve mindfulness in participants (e.g., Eberth et al., 2019), suggesting once-per-week interventions may not provide enough training to highlight overall benefits. The final barrier is that research on mindfulness typically relies on self-report measures, which risk social desirability bias (Christopher & Maris, 2010; Greason & Cashwell, 2009). While observer ratings can improve the robustness of the research, they also may increase cost and duration of the study. Longer duration of mindfulness practice provides

cognitive and behavioral evidence to its effectiveness (Lykins & Baer, 2009), as well as observable structural changes in the brain seen via functional magnetic resonance imaging (fMRI: Ives-Deliperi et al, 2011). However, longer duration studies may also come with a host of practical limitations, including semester-defined timeframes in the classroom setting (Buser et al., 2012), feasibility issues within a research setting (Goldberg et al, 2021), and attrition issues in participants (Linardon & Fuller-Tyszkiewiez, 2020). Mindfulness training is a difficult and rigorous undertaking, which requires years of sustained practice to reap the most significant benefits and see meaningful changes such as deeper insight and equanimity (Lazar et al., 2005); thus, finding ways to allow for more enduring practice infused within counselor training may offer the most benefits.

Despite these myriad barriers, there may be options to move forward. To address issues of self-report bias and the subjective nature of the mindfulness change process, observer-ratings and client-reports can also be utilized to address mutual alignment. To address issues of self-motivation, duration, and attrition, didactic and experiential learning of mindfulness can be infused into multiple classes over the duration of a master's program to highlight the direct links between mindfulness training and improvements in skills of effective counselors. This involves directly teaching theoretical models of mindfulness as it relates to counseling, as well as providing exposure to validated mindfulness skills training. This also helps increase the duration of mindfulness exposure as an integrated facet of learning, not simply as an adjunct concept with little practical relevance. To address issues of varying levels of development, researchers can analyze data from mindfulness research using hierarchical linear modeling (HLM), which accommodates for varying levels of baseline development while providing more accurate measurement of overall growth both individually and within the group. This can also be used to

explore varying client outcomes nested within specific counselors to better understand the direct links of counselor mindfulness on client improvement while controlling for outliers in the data (e.g., Periera et al., 2017). Finally, ways to address the need for congruence and ethical practice of counselor educators who may wish to teach mindfulness is to infuse mindfulness training into doctoral level counselor education programs to train future faculty on the theoretical and practical utility of mindfulness for student development. To overcome the cyclic barrier of reduced exposure to mindfulness education, counselor educators and counseling students can utilize specific mindfulness training protocol that is self-directed, such as those provided by various smartphone applications that provide guided mindfulness training (Goldberg et al., 2021). This ease of access reduces the need for counselor educators to be experienced meditation teachers while also providing empirically validated, quality training.

Chapter Summary

This chapter is a review of the research on traits of effective counselors, counselor practice standards, the history, definition of utility of mindfulness, and the benefits of mindfulness integration into counselor education for improving counselor effectiveness, the therapeutic relationship, and client outcomes. The benefits of incorporating mindfulness training into counselor education to train effective counselors and improve co-regulation and client outcomes is also offered. Possible avenues of mindfulness integration into counselor training are discussed through the lens of interpersonal neurobiology and smartphone-based mindfulness applications. The current, though limited, research exploring counseling student mindfulness training on therapeutic presence, co-regulation, and client outcomes indicates initial positive results within inpatient treatment centers but no differences when integrated into an outpatient center. More research is needed to better understand the benefits of counseling student

mindfulness training for effective trait development, improved therapeutic presence, and co-regulation in client outcomes.

CHAPTER 3

METHODOLOGY

To address the current paucity of literature on the links between counselor mindfulness and client's report of therapeutic presence, we conducted a cluster-randomized controlled study with a non-intervention control group.

Purpose

The purpose of this study is threefold: 1) to explore the effects of a 15-week mindfulness intervention for counseling students integrated into clinical practicum to understand its effects on client reports of therapeutic presence, 2) to explore the effects of a mindfulness intervention in improving state mindfulness in counseling students, and 3) to explore the effects of mindfulness training in reducing counselor trainees' symptoms of trauma. Participants included master's counseling students currently enrolled in clinical practicum who are seeing clients in a university counseling program accredited by the Council for the Accreditation of Counseling and Related Educational Programs (CACREP). Counseling students provided data on their mindfulness, therapeutic presence, and trauma symptoms at baseline, midpoint, and post-treatment. Their adult clients also provided survey data on their perceptions of the counselor's therapeutic presence at baseline, midpoint, and post-treatment. We used a cluster-randomized controlled design to explore nested effects of counselor mindfulness on client reports of therapeutic presence as it changes over time. We chose cluster randomization as opposed to individual randomization to be as least disruptive as possible to the classroom environment. Data analysis for RQ1 included a three-level longitudinal HLM to explore client effects nested within counselor across time. Data Analysis for RQ2 included a two-level longitudinal HLM to explore improvements in counseling student mindfulness across time. Finally, Data analysis for RQ3

included a two-level longitudinal HLM to explore trauma symptom reduction across time. Implications for counseling and counselor education are provided and limitations are discussed.

Research Paradigm

We approached this study through a positivist paradigm, which assumes that the results provide an objective truth and that these results may therefore be generalizable to other similar populations of counseling students and adult clients.

Hypotheses

Researchers identify links between traits of effective counseling and traits developed during mindfulness training, including empathy, self-awareness, therapeutic presence, and connection. Upon further research, it became evident that a great number of studies exist on the best ways to train counselors and the importance of fostering specific characteristics, yet almost no studies directly linked these characteristics to client reports of therapeutic presence or their views on the efficacy of the therapeutic relationship. We sought to address the deficit in client report by tying research on counselor characteristics directly to client's perceptions of therapeutic presence. More specifically, we were interested in the positive effects of counselor mindfulness and the negative effects of counselor trauma on client's perceptions of the quality of the therapeutic relationship and the counselor's therapeutic presence – primarily how these factors moderate co-regulation. Our hypothesis was built upon the premises of intersubjectivity (Schore, 2021) and interpersonal neurobiology (Siegel, 2010), which hold that therapeutic relationships are fostered through relational attunement and that qualities of mindfulness improve attunement whereas ongoing trauma symptoms impair it. Thus, our work aimed to offer practical and useful tools to improve counselor development through the infusion of mindfulness

into pedagogical models of counselor education. To explore our hypothesis, we sought to answer the following questions

RQ1: Do master's counseling students who participate in a 15-week mindfulness training intervention have better reports of counselor therapeutic presence than those who receive no mindfulness training?

RQ2: Do master's counseling students who participate in a 15-week mindfulness training intervention have greater self-reported mindfulness traits than those who receive no mindfulness training?

RQ3: Do master's counseling students who participate in a 15-week mindfulness training intervention have a greater reduction in self-reported trauma symptoms than those who receive no mindfulness training?

Design

We used a cluster-randomized controlled design with non-intervention control group to explore the effect of integrating a 15-week experiential mindfulness education program into a master's counseling clinical practicum class. We provided a variety of clinical instruments to counselors and their clients in both groups at baseline, midpoint, and posttreatment to gauge changes across time compared to a non-intervention group. We chose a cluster-randomized controlled design due to the convenience of having three master's clinical practicum classes running concurrently and to allow for practical standards of protocol should this study be replicated. We made an intentional decision not to randomize at the individual level because it would be disruptive to the courses and student learning and increase problems with scheduling and room availability within the training clinic and counseling department. We also wanted to run it within the class to make it convenient for students to participate. We believed that running it externally from the class would reduce participation and bias the sample by attracting only students who would prioritize additional time to attend the intervention and who may be more

aware of or interested in mindfulness. Ultimately, we also wanted to test the feasibility of running this intervention embedded into the practicum class for convenience should it become part of future curriculum.

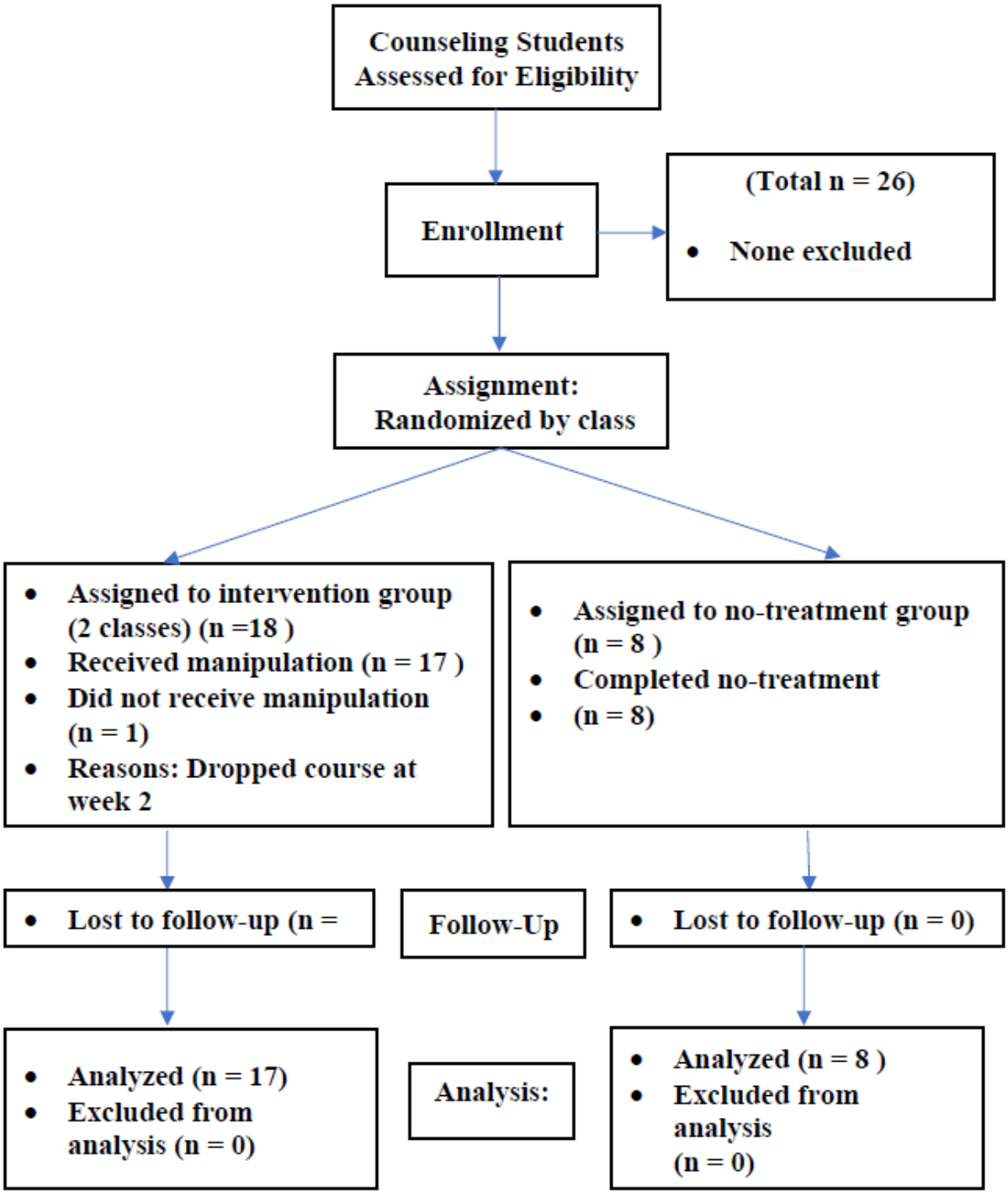
Participants

Participants in the intervention included counseling students in a CACREP counseling master's program currently enrolled in clinical practicum. Their adult clients also supplied survey data but were not part of the direct intervention. All counseling students and their clients were required to be at least 18 years old. The counseling students involved in this study were seeing clients for the first time at the university-based outpatient counseling clinic embedded within the program. Their clients included some first-semester masters counseling students, as well as adults from the community. Child, couple, and family clients were not permitted to be part of the study. Each counseling student carried a caseload of three or four clients across the 16-week semester. The practicum classes were held at three timepoints: Mondays from 5pm to 9:50pm, Tuesdays from 12pm to 5pm, and Tuesdays from 5pm to 9:50pm. During this time, the counseling students have 90 minutes of group supervision in class and then allotted time to see clients in the same building.

Client participants did not receive the intervention but provided data from their experience with counselors who were either in the treatment or the control group. Client participants were primarily early master's counseling students, which make up similar demographics to the practicum counseling students, whereas clients from the wider community were somewhat more diverse. Clients attended counseling sessions with their counselor for 50 minutes once per week and were prescreened for symptom severity before placement to ensure appropriately scaffolded care (see Figure 1 for participant selection).

Figure 1

Flowchart of Counseling Student Participant Selection



An a priori power analysis was not conducted due to the limitations of HLM. Unlike most data analysis procedures, where power is based on effect size, sample size, or alpha level; power in HLM is influenced by effect size, sample size, and covariance structure (Fang, 2006). Because the covariance structure is not known before data collection, it is impossible to define sample size prior to obtaining data – which requires researchers to rely on an educated guess. There continues to be no accepted standard for a priori power calculations in HLM (Castelloe & O'Brien, 2000), so we based our power analysis on prior research by de Jong and colleagues (2010), who provide specific ratios. To achieve adequate power of 0.80 (Cohen, 1988) with a medium effect size for a three-level HLM and randomized controlled trial design with pre/posttest, de Jong and colleagues (2010) suggest 17 counselors with eight clients each, 33 counselors with four clients each, or 66 counselors with two clients each. Our study included 25 counseling students and 25 clients measured across three time points. Post-hoc power analysis can be found in the results section

Instruments

Due to the hierarchical nature of this study, we included two levels of clinical instruments. We used three counselor level instruments and two client level instruments. Counselor level instruments included the Five-Facet Mindfulness Questionnaire (FFMQ: Baer et al., 2008), the Global Psychotrauma Screen (GPS: Schnyder et al., 2017), and the Therapeutic Presence Inventory – Therapist (TPI-T: Geller et al., 2010). The client level instrument used was the Therapeutic Presence Inventory – Client Version (TPI-C: Geller et al., 2010). We also provided a brief demographic questionnaire to counseling students and clients (See Tables 1 and 2 for more details).

Five Facet Mindfulness Questionnaire (FFMQ)

The Five Facet Mindfulness Questionnaire (FFMQ) (Baer et al., 2008) is a clinical assessment of various aspects of mindfulness. The five facets measured include "observing," "acting with awareness," "describing," "non-judging of inner experience" and "non-reacting to inner experience." Based on analysis of alpha coefficient strength by Taber (2017), the construct validity for the FFMQ has moderately strong to strong alpha coefficients for all facets (ranging *a* = .72 to .92), apart from non-reacting to inner experience (*a* = .67), suggesting good internal consistency. Cronbach's alpha greater than 0.6 are considered to reflect an acceptable level of reliability (Streiner, 2003; Taber, 2017). Recent network analysis also found strong support for the reliability and validity of the FFMQ (Lecuona et al. 2021). The questionnaire includes 39 items rated on a scale of 1-5, with 1 being *never/very rarely true* and 5 being *very often/always true*. Example items from the questionnaire include statements such as *When I'm walking, I deliberately notice the sensations of my body moving,* or *I am easily distracted* (reverse coded). In the present study, we calculated alpha coefficients for the overall FFMQ and its subscales. Our sample produced an overall FFMQ alpha coefficient of .95, with subscales of observing (.76), describing (.93), acting with awareness (.92), non-judging (.94), and non-reactivity (.82) – indicating a range of internal consistency from good to excellent.

Therapeutic Presence Inventory – Therapist (TPI-T)

The Therapeutic Presence Inventory – Therapist (TPI-T: Geller et al., 2010) measures counselors' self-reported level of presence with their clients. Geller and colleagues developed the TPI-T based on an earlier model of presence by Geller and Greenberg (2002) to measure in-session therapeutic presence. Geller and colleagues (2010) initially chose 32 items for the assessment, which they concentrated down to 21 after factor analysis; thus, the TPI-T is a 21-

item assessment with 11 positively written items and 10 negatively written item rated on a 7-point Likert scale ranging from 1 (completely present) to 7 (not at all present). The first items reflect process aspects of therapeutic presence, including receptivity (n = 4), inwardly attending (n = 2), and extending and contact, (n = 4). The remaining items represent the experience of therapeutic presence, including immersion (n = 4), expansion (n = 4), grounding (n = 1), and being with the client (n = 2). The TPI-T demonstrated good face validity based on the model of therapeutic presence and expert comments and ratings. Example positive questions include "I was fully in the moment with my client" and example negative questions include "I found it difficult to concentrate."

Factor analysis for the TPI-T found that all measures loaded greater than .40 and the items fell under one main factor with an eigenvalue of 10.50, reflecting 50.01% of the variance (Geller et al., 2010). Further analyses conducted for each therapy session showed one central variable emerging (eigenvalue range 9.44 to 10.98), which explained 44.93-52.26% of the variance. Thus, the 21 items formed a single score, which they labelled therapeutic presence, and further supported the construct validity of the measure. The Cronbach's alpha coefficient for the TPI-T showed excellent internal consistency (α = .94). In the present study, we also calculated the alpha coefficient for our TPI-T data and found good internal consistency (α = .78).

Global Psychotrauma Screen (GPS)

The Global Psychotrauma Screen (GPS: Schnyder et al., 2017) is used as a basic trauma screener, but is not intended to diagnose any specific trauma disorder. We chose this measure to simplify the HLM, which cannot easily include multiple subscale results from other more in-depth trauma screeners, such as The Complex Trauma Questionnaire; CTQ-SR: Vergano et al., 2015). The GPS was developed by an international, multidisciplinary team of investigators who

reached consensus on the domains that cover various posttraumatic responses, including risk factors and protective factors (Frewen et al. 2021; Olff et al., 2020). It was developed to be both transdiagnostic as well as practical, to assist clinicians in evaluating people who are potentially at high risk for posttraumatic stress disorder and other varying trauma related stress disorders. It covers primary symptom domains within PTSD, complex PTSD, anxiety, depression, sleep problems, self-injurious behavior, dissociation, and substance abuse. It also includes a measure to assess for the impact of COVID-19. Frewen and colleagues (2021) conducted exploratory factor analysis using the GPS on two large internet base samples of participants (n = 1,268 and n = 1,378). Their results supported a single factor solution in both samples, and factor loadings for every item were above 0.3 in all cases. The GPS symptom total scores also correlated with other established symptom measures between 80-90%, such as the PCL-5, the ITQ, and the TRASC, suggesting strong concurrent validity. Rossi and colleagues (2021) conducted confirmatory factor analysis on the GPS with over 18,000 adults in the Italian general population. CFA fit indices supported a three-factor solution, with core PTSD symptoms (re-experiencing, avoidance, hyperarousal), negative affect (depressed mood, anxiety, irritability), and dissociative symptoms (χ 2 (116) = 1725.5). All correlation coefficients were statistically significant ($p <$ .001), and Cronbach's alpha was .76, suggesting good internal consistency. In the present study, we calculated our alpha coefficient at .89, approaching excellent internal consistency.

Therapeutic Presence Inventory – Client (TPI-C)

The Therapeutic Presence Inventory – Client (TPI-C: Geller et al. 2010) was developed in conjunction with the TPI-T to assess differences in counselor self-report of presence vs. client's experience of the counselor's presence to reduce the likelihood of self-report bias in the TPI-T. The development of the TPI-C involved two steps: 1) generating items from the TPI-T

and the model of presence potentially reflected in client's experience and 2) refinement of the items to a measure that accurately reflected the process and experience of client's perception of the counselor's presence. Geller and colleagues initially included 15 items to measure clients' perception of counselors' presence reflected in the TPI-T. They chose items based on the ease of converting them from counselor's perception to client's perception and included three questions in the final TPI-C and are rated on a 7-point Likert scale with 1 being completely present and 7 being not at all present. Example questions include "*My therapist was fully there in the moment with me"* or "*my therapist seemed distracted."* The TPI-C is considered to have good face validity because items are chosen on the TPI-T model which has strong representation for one factor (therapeutic presence) and confirmation from expert raters.

All items on the TPI-C loaded greater than .40, and the three chosen items for this measure resulted in one factor with an eigenvalue of 2.03, accounting for 67.59% of the variance. They found results to be similar across therapy sessions, with one factor emerging with an eigenvalue range from 1.80-2.30 accounting for 60.13-76-62% of the variance. Geller et al., (2010) argued that these findings reflect a unidimensional measure with good construct validity. Additionally, the Cronbach's alpha coefficient for the TPI-C showed moderately strong internal consistency ($\alpha = .75$). Finally, preliminary analysis of the TPI-T and TPI-C across 15 sessions of therapy in 179 counselor-client dyads found a small correlation between therapist and client ratings ($r = .20$), which may highlight disconnect in counselor self-rating of presence and client perception of the counselor's presence and suggests the likelihood of counselor self-report bias emerging in the TPI-T. The possibility of self-report bias highlights the need for the TPI-C as a quality control check in measuring more accurate therapeutic presence. In the present study, we calculated the alpha coefficient for our TPI-C data and found good internal consistency ($\alpha = .76$).

Procedure

We were granted approval by the Institutional Review Board at the University of North Texas. Upon approval, we recruited counselor level participants by approaching instructors assigned to teach the master's level clinical practicum class at the beginning of the semester to inquire about running the mindfulness intervention during class time. To ensure adherence to CACREP standards, which require a 90-minute group supervision, and to avoid overlapping with client session time, students who participated in the study were be asked by their instructor and the primary researcher to come to class 30 minutes early each week. We obtained written consent to run this study from the instructor of the course, the clinical director of the program, the department chair of the program, and gathered paper informed consent from the counseling student participants. Client participants received electronic informed consent documents. During the first week of the semester, the first author spoke to each class for 20 minutes to overview the study, explain the risks and benefits, and to recruit participants. In addition, the first author provided a brief discussion of mindfulness and the benefits to counseling students and the therapeutic relationship. We asked those who choose to participate to download the smartphone application Healthy Minds to track their out-of-class progress with meditation, though this was not required to participate in the study. Our participants were currently enrolled in one of three clinical practicum classes, which we randomized through electronic number generator to assign two classes to the intervention group and one to the control group. We provided counseling students with paper documents outlining informed consent, obtained signatures and provided students with a copy of the signed document. We also provided paper documents of the counselor level instruments, including the demographic questionnaire, the Global Psychotrauma Screen, and the Five Facet Mindfulness Questionnaire. We provided the Therapeutic Presence

Inventory – Therapist version at week 5 when all counseling students had a full client caseload. We administered the FFMQ and the GPS administered at week 1, week 7 and week 15. We administered the TPI-T at week 5, week 10, and week 15.

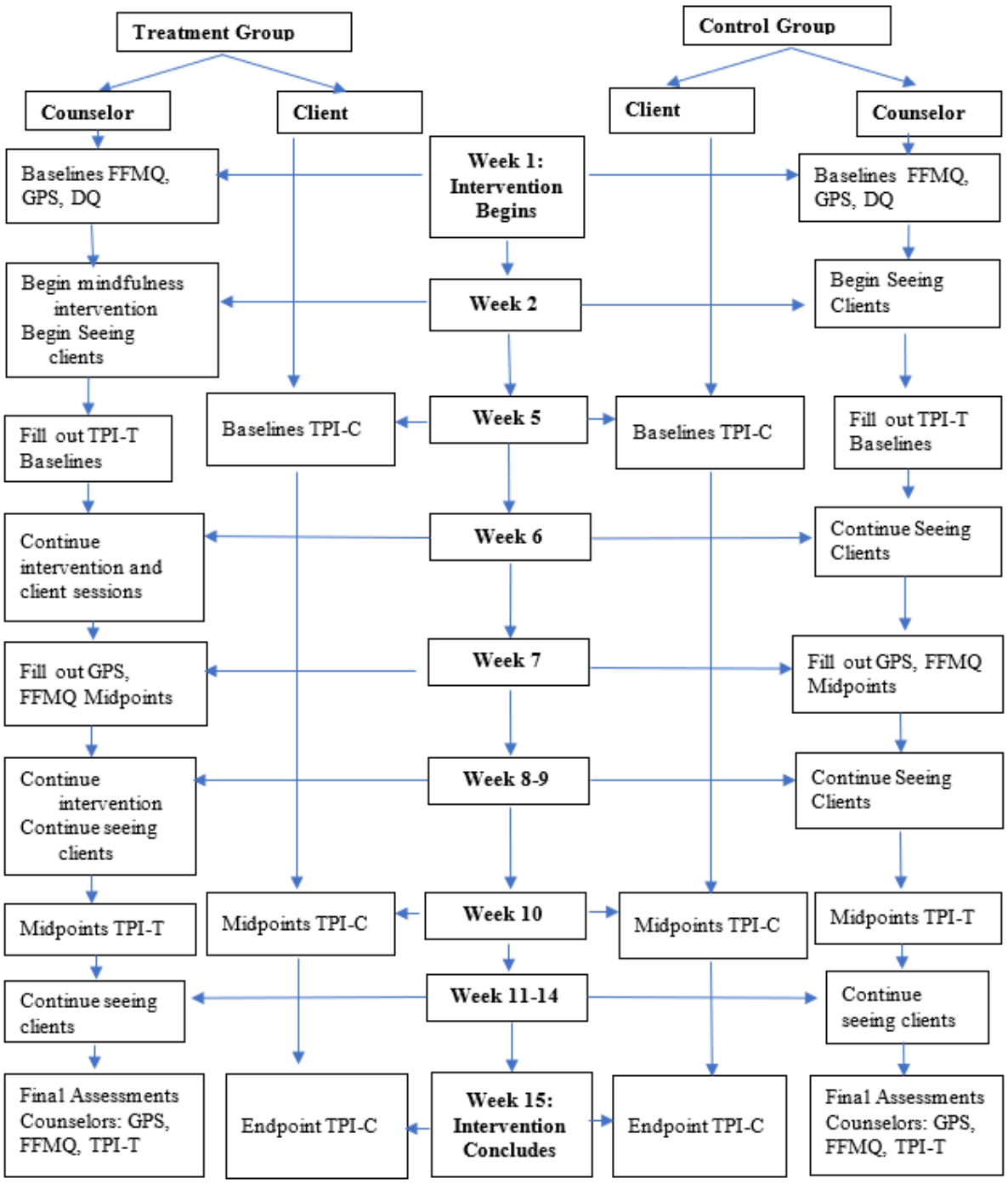
We provided the mindfulness intervention for the treatment group in their classroom thirty minutes before their practicum class began. We instructed students to arrive on time or to wait outside if they were late and the door was shut to avoid disrupting the session. The intervention ran from week 2 to week 15. The primary researcher used a Bluetooth speaker to play the Healthy Minds mindfulness audio modules from their phone to structure the session and ensure synchronization. Healthy Minds has various guided-mindfulness exercises, but for the purpose of this study we only used modules from the awareness section to assist with the development of presence. At the end of each mindfulness module, the primary researcher left, and students began their class. We repeated this same process each week until the end of the study. Assessments were administered before the mindfulness session at each data collection timepoint. If students chose to practice at home, we asked them to only use modules from the awareness section and we asked them to report the number of at-home modules practiced at the end of the study.

We recruited client level participants through non-random convenience sampling. Several clients were first-year master's counseling students required to attend 10 sessions of counseling as part of their program and others were from the community. We recruited clients with the help of the university clinic's assistant directors, who sent an email to all adult clients of practicum counseling students with study information and attached a link for informed consent and the TPI-C at week 5. We repeated the email process to clients at week 10 and week 15. We provided all

who fully participated in the study (e.g., completed all assessments) with a $10 amazon gift card. (See Figure 2 for procedure flowchart).

Figure 2

Flowchart of Treatment Protocol



Ethical Consideration (Human Subjects Protections)

For meeting standards of ethical considerations for this study, we sought approval from the Institutional Review Board at the University of North Texas prior to embarking on the study. We discussed some very minimal risk to counseling student participants based on our measures exploring their trauma history. We informed participants of the voluntary nature of this study and informed them that they may withdraw at any time. We also provided a list of resources to seek their own counseling if necessary. We attended to client welfare and confidentiality, and we were prepared to provide resources for additional (and external) mental health counseling if necessary.

Data Collection Procedures

We confidentially collected counselor informed consent, demographic information, and clinical assessment data on paper and stored in a locked file cabinet in the primary researcher's office. At the completion of the study, we coded paper data into a Microsoft Excel spreadsheet, and locked paper data in a stored file in the primary researcher's office for the required duration. We confidentially collected client demographic information and outcome measures for this study online via Qualtrics software (Qualtrics, Provo, UT). Qualtrics is an electronic data collection software system regularly used in academic research. We linked client data to the counselor via number coding using the counselor's first and last initial and the client's date of birth. Electronic data is stored on an encrypted, HIPAA compliant, and password protected hard drive available only to the research team.

Data Analysis

We ran preliminary analysis to equate groups on variables and outcomes. Later, we analyzed our data based on the standards for HLM (Gelman & Hill, 2007; Raudenbush & Bryk, 2002). Researchers recommend using HLM in mindfulness research to account for the large

variance in baseline mindfulness and change that often exists between participants (Pereira et al., 2017). HLM allows the opportunity to explore a better overall model fit by analyzing nested effects. It is also more sensitive to smaller sample sizes than a mixed within-between repeated measures analysis of variance (ANOVA).

For RQ1, we analyzed the data using a three-level HLM to explore the change in client's perceptions of therapeutic presence nested into counselor across time. We hypothesized that clients seeing counselors in the mindfulness group would report better counselor therapeutic presence compared to the clients seeing counselors in the control group. We measured clients at three timepoints in therapy across the duration of the semester and we analyzed the data using the HLM software from SSI Live Software Subscription (Version 8.2). We measured time at level one, clients at level two, and counselors at level three.

For RQ2, we used a two-level HLM to track counselor mindfulness change across time. We used a two-level HLM instead of a mixed within-between ANOVA due to our lower sample size. We hypothesized that counselors in the mindfulness intervention would show greater improvement in the five facets of mindfulness as measured by the FFMQ (Baer et al., 2008) than those in the control group at posttreatment. We measured time at level one and counselor mindfulness at level two.

For RQ3, we used a two-level HLM to track counselor trauma symptoms across time. We hypothesized that counselors in the mindfulness group would show a greater reduction in trauma symptoms at posttreatment compared to the control group. We measured time at level one and counselor trauma symptoms at level two.

For any reason that an HLM was not feasible, we agreed to run a repeated measures ANOVA. Bell et al. (2010) explored the impact of small sample size on HLM models and the

effects of level two data sparseness on the estimation of fixed and random effects coefficients in terms of model convergence and both point and interval parameter estimates. Using a simulated dataset with similar missing data profiles as our sample (e.g., missing values at level two), they found that this type of data profile can often make it difficult to link influences in level three to level one outcomes. More specifically, they found that level two sparseness and *singletons* (when level three only has one referential case at level two), can lead to a reduction in the accuracy of the confidence intervals for the level two predictors and bias in the Type I error control of the level two predictor.

Data Preparation

Data preparation addresses the protocol for data entry, missing data, evaluation of statistical assumptions, and data correlations.

Data Entry and Missing Data

We manually entered all paper data into an Excel spreadsheet and double checked for accuracy. We imported all digital data from Qualtrics into an Excel spreadsheet for initial cleaning and then imported into SPSS for initial analysis. We reverse-coded required items and then analyzed missing data to explore the effect on the overall sample, and to assess whether it was missing completely at random (MCAR), missing at random (MAR), or missing not at random (MNAR). Typically, distinguishing MCAR and MAR is not possible at face value, thus thorough understanding of the data and the study is important (Hughes et al., 2019). Additionally, when data is MAR or MNAR, Allison (2002) cautions against jumping straight to listwise deletion because it risks inserting bias into the data. We explored statistical assumptions for HLM to check for violations and addressed MAR data using full maximum likelihood (FML) to reduce the bias of mean imputation in smaller sample sizes (Allison, 2002). We excluded

participants with more than one timepoint of missing data from analysis.

Evaluation of Statistical Assumptions

We used the Statistical Package for Social Sciences (SPSS) Version 28 software to evaluate statistical assumptions associated with HLM. Based on guidelines recommended by Hancock et al., (2019), we assessed for outliers and evaluated sphericity, normality, linearity, homoscedasticity among the variables, heterogeneity of variances and residual diagnostics.

Hierarchical Linear Modeling Procedures

Hierarchical linear models are often also called multilevel models (MLM: Raudenbush & Bryk, 2002). Other terms that refer to HLM include random coefficient models (de Leeuw & Kreft, 1986), linear mixed models (West et al., 2017), and variance component models (Longford, 1995). HLM is the best option for exploring combined individual and group level factors on an individual level outcome measure. Researchers can use HLM to explore relationships among predictors at varying levels as well as cross-level relationships of predicted measures at different levels (Yel, 2016). According to Gelman and Hill (2007), a cross-level relationship with nested data will typically violate the assumption of independence in most statistical analysis, but this is not the case with HLM. Additionally, Raudenbush and Bryk (2002) recommend HLM as opposed to ANOVA when data is nested to avoid compromising inferential validity in nested data due to overestimated or underestimated standard errors. Therefore, HLM allows researchers to analyze data on separate levels and across levels while avoiding many of the shortcomings of standard statistical analyses not meant for nested data, while also avoiding information loss or unclear interpretation.

HLM are also better able to manage random effects and missing data (Gelman & Hill, 2007), while allowing researchers to better account for differences in beta (β) coefficients that

highlight effects between levels. This process reduces Type I errors and allows for better accuracy in assessing the impact of levels of factors on the overall outcome. Finally, HLM also allow the researcher to define an analytical framework that addresses fixed and random effects in the data (Yel, 2016). Fixed effects point to the relationships between the independent variable and the dependent variable for the entire population, whereas random effects are specific to groups within a population.

The levels of an HLM also matter when exploring nested effects. Two level hierarchal linear models are common to explore simple hierarchical data, such as subjects nested within groups (Gelman & Hill, 2007). A two-level model is common in basic educational research to evaluate the efficacy of teachers (group) on student outcomes (individual), which makes it a useful model to explore client change within counselor. This allows the researcher to explore counselor and client variables between and across levels.

Three-level HLM are also common, particularly for more advanced education research (Gelman & Hill, 2007). This allows for a second grouping and is often used when exploring standardized test results (level one) nested within schools (level two) nested within districts or the state (level three). For mental health research, a three-level model is useful when conducting intervention research, because it allows time to become the longitudinal factor (level one), which nests within client (level two), who nest within counselor (level three). At the time level, the regression equation allowed us to track longitudinal growth across counselor mindfulness, counselor trauma, and counselor therapeutic presence, with our dependent variable representing change in client report of counselor therapeutic presence. The regression coefficients from the first level represent outcomes in the second level, which also include client level predictor variables. Finally, the regression coefficients obtained at the second level represent outcomes at the third

level, which also include counselor level predictors. Raudenbush and Bryk (2002) recommend using a three-level longitudinal HLM to address the hierarchical structure of the data while exploring the cross-level effects as they change over time (see Table 1).

Table 1

Hierarchical Structure of Variables Included in the Proposed HLM Model

Level of Data	Unit of Analysis	Covariates
Level 3	Counselor	Gender, Race, Age, Mindfulness Experience, Trauma History, Type of Trauma, Duration of Trauma, Time Since Trauma Confidence in Therapeutic, Relationship, Confidence in Clinical Skills, Treatment
Level 2	Client	Gender, Counseling History, Symptom cluster, SUD
Level 1	Time	FFMQ, GPS, TPI-T
	Dependent Variable	TPI-C

*Note** Lower levels are nested in higher levels. TPI-T = Therapeutic Presence Inventory – Therapist, TPI-C = Therapeutic Presence Inventory – Client, FFMQ = Five-Facet Mindfulness Questionnaire, GPS = Global Psychotrauma Screen.

Fixed, Random, and Mixed Effects

It is also important to distinguish fixed and random effects in HLM (Gelman & Hill, 2007; Raudenbush & Bryk, 2002). Fixed effects remain constant across all individuals, whereas random effects vary. A fixed variable is a variable that can be measured without error, meaning that these values in one study would be the same as the values of the fixed variable in another study. An example might be something that a researcher can directly manipulate, such as a particular intervention protocol. Demographic variables are also fixed factors, such as race or gender (Albright, 2019). While fixed effects also exist in ANOVAs, they represent data collection on all levels of a factor, whereas in HLM, fixed effects represent the intercept and slopes that remain constant across higher-order units, so the regression weights that remain constant for each subject in an HLM are the fixed effects (Heck & Thomas, 2015; Yel, 2016).

Table 2

Fixed and Random Factors for the Present Model

Effect Type	Predictor Variables		Effect Representation
Fixed	Intercept		Entire Population
	Time		
	Counselor	Mindfulness experience	Entire Population in Counselor group
		Trauma History	
		Trauma Type	
		Trauma Duration	
		Time Since Trauma	
		Group	
		Time x Group	
		Confidence in Clinical Skills	
		Confidence in Building Therapeutic Relationships	
	Client	Client Gender	Entire Population in Client group
		Client Race	
		Counseling History	
		Symptom Cluster	
		Number of Sessions	
		SUD	
Random Effects	Counselor (*j*)	Intercept	
		Time	
	Client (*i*)	Intercept	
		Time	
Residuals		Time (t)	

HLM also have random effects that vary across individuals and can be thought of as predictor variables that alter the variance among values at different levels rather than in differences of values between levels (Albright, 2019). An example of a random effect is the random variation in individuals from a sampled population in an intervention. Random effects

are not directly estimated but are considered random, with a mean centered at zero and a variance squared, or variance component represented by the following symbol: σ^2. The inclusion of multiple random effects creates the assumption of normal distribution with a mean of zero and a covariance matrix representing variance components of each random effect and their respective covariances.

Random effects in HLM are also referred to as random slope and random intercepts. In longitudinal HLM, random effects also include factors at the highest level (e.g., counselor). Mixed effects include both random and fixed effects, where the fixed effect represents the estimate of a total population coefficient and the random effect accounts for individual differences in outcomes from the effect of a treatment. The fixed, random, and mixed effects represented in the present model can be seen in Table 2.

Specifications of the Hierarchical Linear Model

For RQ1, we used the following three-level longitudinal hierarchical linear equation (see Figure 3). With this equation, we explored longitudinal changes in client reports of therapeutic presence nested within counselor.

Figure 3

Hierarchical Linear Equation for Three-Level Longitudinal Model (RQ1)

Level 1: $\boldsymbol{Y_{tij} = \beta_{0i} + \beta_{1ij}(time_{tij}) + r_{tij}}$

Level 2: $\boldsymbol{\beta_{0i} = \gamma_{00} + \gamma_{01} + u_{0ij}}$

$\boldsymbol{\beta_{1ij} = \gamma_{10j} + \gamma_{11j} + u_{1ij}}$

Level 3:

$\boldsymbol{\gamma_{00j} = \delta_{001} + \delta_{002}(Group_j) + v_{0j}}$

$\boldsymbol{\gamma_{01j} = \delta_{100} + \delta_{110}(Group_j) + v_{1j}}$

$\boldsymbol{\gamma_{10j} = \delta_{200} + v_{210j}(Group_j) + v_{2j}}$

$\boldsymbol{\gamma_{11j} = \delta_{300} + \delta_{310}(Group_j) + v_{3j}}$

with $\begin{pmatrix} \boldsymbol{u0} \\ \boldsymbol{u1} \end{pmatrix} \sim \boldsymbol{N} \begin{pmatrix} \boldsymbol{0} \\ \boldsymbol{0} \end{pmatrix}, \begin{pmatrix} \boldsymbol{\sigma^2 u_0} & \boldsymbol{\sigma u_0 u_1} \\ \boldsymbol{\sigma u_0 u_1} & \boldsymbol{\sigma^2 u_1} \end{pmatrix}$

and $\begin{pmatrix} \boldsymbol{v0} \\ \boldsymbol{v1} \\ \boldsymbol{v2} \\ \boldsymbol{v3} \end{pmatrix} \sim \boldsymbol{N} \begin{pmatrix} \boldsymbol{0} \\ \boldsymbol{0} \\ \boldsymbol{0} \\ \boldsymbol{0} \end{pmatrix}, \begin{pmatrix} \boldsymbol{\sigma^2 v_0} & \boldsymbol{\sigma v_0 v_1} & \boldsymbol{\sigma v_0 v_2} & \boldsymbol{\sigma v_0 v_3} \\ \boldsymbol{\sigma v_0 v_1} & \boldsymbol{\sigma^2 v_1} & \boldsymbol{\sigma v_1 v_2} & \boldsymbol{\sigma v_1 u_3} \\ \boldsymbol{\sigma v_0 u_2} & \boldsymbol{\sigma v_1 u_2} & \boldsymbol{\sigma^2 v_2} & \boldsymbol{\sigma u_2 v_3} \\ \boldsymbol{\sigma v_0 v_3} & \boldsymbol{\sigma\, v_1 v_3} & \boldsymbol{\sigma\, v_2 v_3} & \boldsymbol{\sigma^2 v_3} \end{pmatrix}$

and $\boldsymbol{r_{tij} \sim N(0, \sigma^2)}$

For RQ2, we used the following two-level longitudinal hierarchical linear equation (see Figure 4). This equation allowed us to explore longitudinal changes in counselors overall state mindfulness.

Figure 4

Hierarchical Linear Equation for Two-Level Longitudinal Model (RQ2)

Level 1: $\boldsymbol{Y_{tij} = \beta_{0i} + \beta_{1ij}(time_{tij}) + r_{tij}}$

Level 2: $\boldsymbol{\beta_{0i} = \gamma_{00} + \gamma_{01}(Group_{tj}) + u_{0i}}$

$\boldsymbol{\beta_{1ij} = \gamma_{10j} + \gamma_{11j}(Group_{tj}) + u_{1ij}}$

with $\begin{pmatrix} \boldsymbol{u0} \\ \boldsymbol{u1} \end{pmatrix} \sim \boldsymbol{N} \begin{pmatrix} \boldsymbol{0} \\ \boldsymbol{0} \end{pmatrix}, \begin{pmatrix} \boldsymbol{\sigma^2 u_0} & \boldsymbol{\sigma u_0 u_1} \\ \boldsymbol{\sigma u_0 u_1} & \boldsymbol{\sigma^2 u_1} \end{pmatrix}$

and $\boldsymbol{r_{tij} \sim N(0, \sigma^2)}$

For RQ3, we used the following two-level longitudinal HLM (see Figure 5). This equation allowed us to explore the influence of the mindfulness intervention on counselor trauma scores over time.

Figure 5

Hierarchical Linear Equation for Two-Level Longitudinal Model (RQ3)

Level 1: $\boldsymbol{Y_{tij} = \beta_{0i} + \beta_{1ij}(time_{tij}) + r_{tij}}$

Level 2: $\boldsymbol{\beta_{0i} = \gamma_{00} + \gamma_{01}(Group) + u_{0i}}$

$\boldsymbol{\beta_{1ij} = \gamma_{10j} + \gamma_{11j}(Group_{tj}) + u_{1ij}}$

with $\begin{pmatrix} \boldsymbol{u0} \\ \boldsymbol{u1} \end{pmatrix} \sim \boldsymbol{N} \begin{pmatrix} \boldsymbol{0} \\ \boldsymbol{0} \end{pmatrix}, \begin{pmatrix} \boldsymbol{\sigma^2 u_0} & \boldsymbol{\sigma u_0 u_1} \\ \boldsymbol{\sigma u_0 u_1} & \boldsymbol{\sigma^2 u_1} \end{pmatrix}$

and $\boldsymbol{r_{tij} \sim N(0, \sigma^2)}$

Model Specific Fixed Effects

In the model for Figure 3, Y_{tij} is the dependent variable that represents the change in score on client's report of therapeutic presence based on the TPI-C at three timepoints (baseline, midpoint, and final assessment). The level one indicator variable for time is $time_{tij}$. The level 3 counselor specific fixed effects are seen in the impact of the intervention, represented by the term *Group*. The model in Figure 4 is used to answer RQ2. In the model, Y_{tij} is the dependent variable that represents the change in score on the FFMQ counselor mindfulness over time from beginning of intervention to end of intervention at three time points. The level one indicator variable for time is $time_{ti}$. The level two counselor specific fixed effects are seen in the impact of the intervention, represented by the term *Group*. The model in Figure 5 is used to answer RQ3. In the model, Y_{tij} is the dependent variable that represents the change in GPS score for counselor trauma symptoms over time from beginning of intervention to end of intervention at three time points. The level one indicator variable for time is $time_{ti}$. The level two counselor specific fixed effects are seen in the impact of the intervention, represented by the term *Group*.

Model Specific Random Effects.

The random level 1 effects associated with the intercept and time slope for the overall model is represented by r_{tij}. The random level 2 client effects associated with the intercept and time slope are represented by the variables u_{0ij} through to $+ u_{2ij}$. The random level 3 counselor effects associated with intercept and time slope are v_{0j} through $+v_{3j}$. The variance-covariance matrix can be viewed in Figure 3.

Intraclass Correlations

An intraclass correlation (ICC) is the unit of reliability measurement used to assess the outcome variation that occurred due to between group differences in the intercept (Yel, 2016). It provides the researcher with information on the proportion of total variance that is accounted for by clustering data. It is also represented as the correlation among observations within each level or the degree of variability between groups. For example, the variance in the dependent variable can be divided into variance related to individual variation within a group and variance across groups to create a ratio that explains the amount of variance due to groups as it relates to total variance. ICC values range between 0-1, with larger values suggesting a stronger relationship between the data from individuals within the same group, and greater between-group variability. Researchers are mixed in their views of the effects of ICC on sample size requirements (Donoghue & Jenkins, 1992; Kim, 1990). The ICC was found to have no significant effect on sample size in one study (Donoghue & Jenkins, 1992), while others argue that it affects the accuracy of parameter estimates (Kim, 1990). We calculated the ICC for each level in the model and reported the outcome in the results section.

Parameter Estimation

In this study, predictors are centered at zero to create a grand mean within the cluster. This helps to provide a meaningful zero point so that accurate interpretation of the parameters is possible (Gelman & Hill, 2007). Parameter estimates are reported in the results section.

Model Selection

HLM is a complex version of ordinary least squares (OLS) regression that is best used to analyze variance in outcome variables when the predictor variables are at varying levels (Woltman et al., 2012). The inclusion of nested effects in a statistical model allows the researcher to simultaneously explore between and within hierarchical levels of grouped data, which better accounts for variance among variables at various levels. HLM is also better able to assess cross-level data relationships and is preferred over other statistical models because fewer assumptions are required to be met (Raudenbush & Bryk, 2002; Woltman et al., 2012). HLM can also manage nonindependence of observations, non-sphericity, missing values, small sample sizes, heterogeneity of variance across the data, effect size estimates, while reducing distortion in standard errors. Finally, HLM can also improve the accuracy of meaningful variance.

Model Hypothesis

The model hypothesis in this study was a comparison of between and within group level effects, interactions of the various covariates, and the changes over time. HLM meets five important conditions for analysis (Woltman et al., 2012). Firstly, it can assess significance of between-group variance but not within-group variance; thus, the total variance in the outcome variable is partitioned into between and within components, which allows for the calculation of the intraclass correlation (ICC) – the ratio of the between group variance to the total variance. For this model, the ICC represented the variance in the client outcomes between counselors.

Woltman and colleagues suggest running an initial ANOVA to calculate the amount of variance within groups and the amount of variance between groups to allow for the calculation of the ICC. Once variance within and between groups are partitioned, researchers can explore significant variance in the level one intercept and slope by applying a random coefficient regression. This allows for analysis of the significance of variance in the dependent variable due to level three group factors when the predictors are held constant. The third condition allows for exploration of whether the predictors are related to the dependent variable. The fourth condition allows the researcher to explore whether significant variance at the intercepts of level one is related to the level three predictors by running another random regression. This allows the researcher to explore whether the level three predictors are related to the intercept while holding level one predictors constant. This is considered the intercepts-as-outcomes model. Finally, condition five allows assessment of the variance in the level one slope influenced by the level three predictors.

Model Comparison

Various models can be utilized in HLM, but model parameters influence which model should be utilized (Whittaker & Furlow, 2009). One method of comparison of nested HLM is the Chi-square difference test, which incorporates the deviance statistic in its calculation and can be used to determine if statistically significant differences exist between models. Information criteria can also be used for model selection. The most popular information criterion is Akaike's (1973) information criterion (AIC). The AIC compensates for the variety of parameters in the model because it is asymptotically efficient, which means it will select the best finite dimensional model that is closest to the true model (Whittaker & Furlow, 2009), and the model with the lowest AIC represents the better fit. AIC is often criticized for lack of consistency, but this can be corrected using finite sample corrected AIC (CAIC) (Hurvich & Tsai, 1989). Other

models include the Bayesian information criterion (BIC: Schwartz, 1978), Hannon & Quinn's (1979) information criterion, and Bozdogan's (1987) consistent AIC (CAIC).

Model Building

Model building in HLM requires identification and evaluation of specific elements to include in an overall model. The goal is to have the simplest model that also provides the best fit for the data. This involves decisions of random and fixed effects, as well as various options of covariance structures.

Final Analysis Protocol

Stepwise strategies for model building and additional hypotheses testing are reported in the results section. This includes an overview of descriptive statistics for variables at each level of analysis and presentation of the results. Issues of model fit are addressed, and deviance is reported, including the final model's predictive ability, the proportion of reduction in variance at each level, and measure of effect size and implications to address practical and clinical significance.

CHAPTER 4

RESULTS

In the following sections, we present the results of the study using longitudinal HLM to evaluate the effects of a counselor mindfulness intervention on the client's perception of their counselor's therapeutic presence, counselor mindfulness, and counselor trauma across one semester of a master's practicum course. Participants in this study included 26 student counselors from a large CACREP accredited public university in the Southwestern United States. We recruited counseling student participants via in-person presentations in their clinical practicum classes at the beginning of the semester. We recruited client participants online via email sent from the counseling clinic that included information about the study and links to informed consent and assessments administered via Qualtrics. Each student counselor and their client who successfully completed the intervention (defined as completing all assessments at all timepoints) received a $10 amazon voucher. One counseling student withdrew at week 2 due to dropping the program, leaving the total counseling student sample who completed the study at 25, 19 of whom had at least one client return outcome data. Nine counseling students had at least two clients return outcome data, five counseling students had at least three clients return outcome data, and six counseling students had zero clients return outcome data. This made a total of 25 counseling students and 25 clients. Clients participated by providing demographic data and their perceptions of their counselor's therapeutic presence. We used a cluster-randomized controlled design with counseling students assigned to treatment or control based on the practicum class in which they were enrolled. Randomization occurred through random number generator, with two classes in the intervention group and one in the control. This left a total of 17 counseling students in the intervention group, and eight counseling students in the control group. We had a total of 17

clients assigned to counseling students in the intervention group and eight clients assigned to students in the control group.

The mindfulness intervention ran for 15 weeks across the duration of the semester. We used the Healthy Minds application to provide mindfulness instruction every week from week 2 to week 15. At week 1, we introduced the study, and we gained informed consent and baseline assessments for the Five Facet Mindfulness Questionnaire (FFMQ: Baer et al., 2008), the Global Psychotrauma Screen (GPS: Schnyder et al., 2017), and demographic information. We invited counseling students to download the Healthy Minds application to practice mindfulness between sessions, but did not require this to participate. Beginning at week 2, the primary researcher provided 20 minutes of meditation at the beginning of each intervention class using modules from the awareness section of the Healthy Minds smartphone application. When the recording concluded, the primary researcher left the room and students began class. At week 7 and week 15, counseling students repeated the FFMQ and the GPS. Beginning at week 5, we provided the counseling students with the Therapeutic Presence Inventory – Therapist Version (TPI-T: Geller et al., 2010). We waited until week 5 to administer this assessment to ensure all counseling students had a full client caseload. We repeated this assessment at week 10 and week 15.

At week 5, we recruited clients for the first time. We waited until week 5 to make sure all clients had an assigned counselor. We instructed the assistant director of the clinic to email clients with information about the study and provided a link to a Qualtrics survey which provided informed consent, a demographic questionnaire, and the Therapeutic Presence Inventory – Client Version (TPI-C: Geller et al., 2010). We repeated these assessments again at week 10 and week 15.

Preliminary Data Preparation

The final dataset included data provided by counseling students and their clients. The final counselor data included demographic information, counselor reported baseline, midpoint, and final scores on the FFMQ, the GPS, and the TPI-T. The final client data included demographic information, and client reported baseline, midpoint, and final scores on the TPI-C.

Missing Data

For counseling students, we found 18 points of missing data out of a total of 6550, which is 0.2%. Little's missing completely at random test for student counselors' data was not significant ($\chi^2 = .000, df = 68, p = 1.000$), indicating the data was missing completely at random. For clients, we found 192 missing data out of a total of 700, which is 27%. Upon further analysis, we noticed trends in clients not filling out assessments at midpoints or at the conclusion of the session, with 13 clients who filled out all assessments, and three clients filled out baseline and either midpoint or final assessment. We found nine cases missing more than 60% of the data, so we excluded them from the final analysis, leaving 16 clients with enough data to conduct the HLM analysis (completed at least two rounds of assessment and missing less than 30%). Six counseling students did not have any client data.

While it is typically recommended to delete cases with more than 15% missing data, the three timepoints in our longitudinal model make assessing change scores possible if participants completed assessments at a minimum of two timepoints. Hancock and colleagues (2019) suggest that, in HLM, overall sample size is less important than the number of group units and average number of individual units within each group unit. Additionally, one advantage to HLM is that it can handle missing data at all levels except the highest level, which makes it a more robust analysis for longitudinal data than a repeated measures ANOVA (Lininger et al., 2015).

Table 3

Counseling Student Participant Demographics

Baseline Characteristic		Mindfulness Group		Control Group		Full Sample	
		n	%	*n*	%	*n*	%
Gender	Male	4	23.5	1	12.5	5	20.0
	Female	13	76.4	7	87.5	20	80.0
Race	Asian	0	0.0	1	12.5	1	4.0
	Alaska/Native American	1	5.8	0	0.0	1	4.0
	African American	3	17.6	0	0.0	3	12.0
	Latino	2	11.7	1	12.5	3	12.0
	White	11	64.7	6	75.0	17	68.0
Trauma History	Yes	14	82.3	2	25.0	16	64.0
	No	2	11.7	2	25.0	4	16.0
	Unsure	1	5.8	4	50.0	5	20.0
Type of Trauma	Physical Abuse	1	5.8	1	12.5	2	8.0
	Sexual Abuse	2	117.0	1	12.5	3	12.0
	Emotional Abuse	6	35.2	0	0.0	6	24.0
	Serious Injury	0	0.0	1	12.5	1	4.0
	Life Threatening	3	17.6	2	25.0	5	20.0
	Death	3	17.6	3	37.5	6	24.0
Time Since Trauma	Less than 1 month	2	11.7	2	25.0	4	16.0
	1-6 months	1	5.8	0	0.0	1	4.0
	6-12 months	0	0.0	1	12.5	1	4.0
	12 months or more	14	82.3	5	62.5	19	76.0

(table continues)

Baseline Characteristic		Mindfulness Group		Control Group		Full Sample	
		n	%	*n*	%	*n*	%
Trauma Frequency	Once	8	47.0	5	62.5	13	52.0
	Multiple Times	8	47.0	3	37.5	11	44.0
Counseling Skills Confidence	Excellent	0	0.0	1	12.5	1	4.0
	Good	3	17.6	5	62.5	8	32.0
	Average	11	64.7	2	25.0	13	52.0
	Poor	3	17.6	0	0.0	3	12.0
Therapeutic Relationship Confidence	Excellent	0	0.0	3	37.5	3	12.0
	Good	10	58.8	5	62.5	15	60.0
	Average	7	41.1	0	0.0	7	28.0
Mindfulness Experience	No knowledge	1	5.8	0	0.0	1	4.0
	Some knowledge, no practice	4	23.5	0	0.0	4	16.0
	Some practice	12	70.5	7	87.5	19	76.0
	Regular practice	0	0.0	1	12.5	1	4.0

Table 4

Client Participant Demographics

Baseline Characteristic		Mindfulness Group		Control Group		Full Sample	
		n	%	*n*	%	*n*	%
Gender	Male	2	11.7	1	12.5	3	12.0
	Female	15	88.2	7	87.5	22	88.0
Race	Asian	2	11.7	1	12.5	3	12.0
	Alaska/Native American	1	5.8	0	0	1	4.0

(table continues)

Baseline Characteristic		Mindfulness Group		Control Group		Full Sample	
		n	%	*n*	%	*n*	%
	African American	4	23.5	1	12.5	5	20
	Latino	7	41.0	4	50.0	11	44.0
	White	3	17.6	2	25.0	5	20.0
Counseling Experience	No Prior Counseling	2	11.7	1	12.5	3	12.0
	1-10 Sessions	5	29.4	3	37.5	8	32.0
	11-20 Sessions	0	0.0	3	37.5	3	12.0
	21-40 sessions	5	19.4	1	12.5	6	24.0
	40+ Sessions	5	29.4	0	0.0	5	20.0
Symptom Cluster	Anxiety/Stress	4	23.5	4	50.0	8	32.0
	Depression/Mood	2	11.7	0	0.0	2	8.0
	Trauma	0	0.0	1	12.5	1	4.0
	Relationships	5	29.4	0	0.0	5	20.0
	Personal Growth	3	17.6	3	37.5	6	24.0
	Academic/Focus	3	17.6	0	0.0	3	12.0

Therefore, we chose to include the three clients who had only completed two timepoints. We excluded cases missing more than 30% of the data.

Participant Demographics

A total of 26 counseling students enrolled in this study, with 17 in the intervention groups and eight in the control group (see Table 3). One participant from the intervention group withdrew at week 2, leaving 25 counseling students who attended an average of 14 mindfulness sessions. Counselors provided therapy to a total of 25 clients over fifteen weeks, and the number of clients per counselor varied with a mean of 2.08 and a mode of 1 (see Table 4).

Statistical Assumptions

Statistical assumptions for HLM are similar to the assumptions found in standard multiple regression, including normality, linearity, outliers, multicollinearity, and homogeneity of variances. However, Hancock and colleagues (2019) suggest that having data on multiple levels causes assumption testing to be more complex, therefore, assumptions should be checked at each level of the data.

We explored assumptions with counselor data for mindfulness change at level three and found no outliers ± 3 standard deviations from the mean. We assessed the histogram and determined that we met the assumption of normality (see Figure 6). We assessed the normal P-P plot and determined that we met the assumption of linearity (see Figure 7). We inspected multicollinearity using the variance inflation factor (VIF) scores for our counselor mindfulness variables and found that no score was over 4 or under 0.25, which suggested that our data met assumptions. We analyzed the standardized residual and standardized predicted scatterplot and determined that we reasonably met the homoscedasticity assumption (see Figure 8). Finally, we

assessed skewness and kurtosis and found that no variable displayed skewness (± 2) or kurtosis (± 7).

Figure 6

Assumptions of Normality for Counselor, Client, and Pooled Data Across Variables

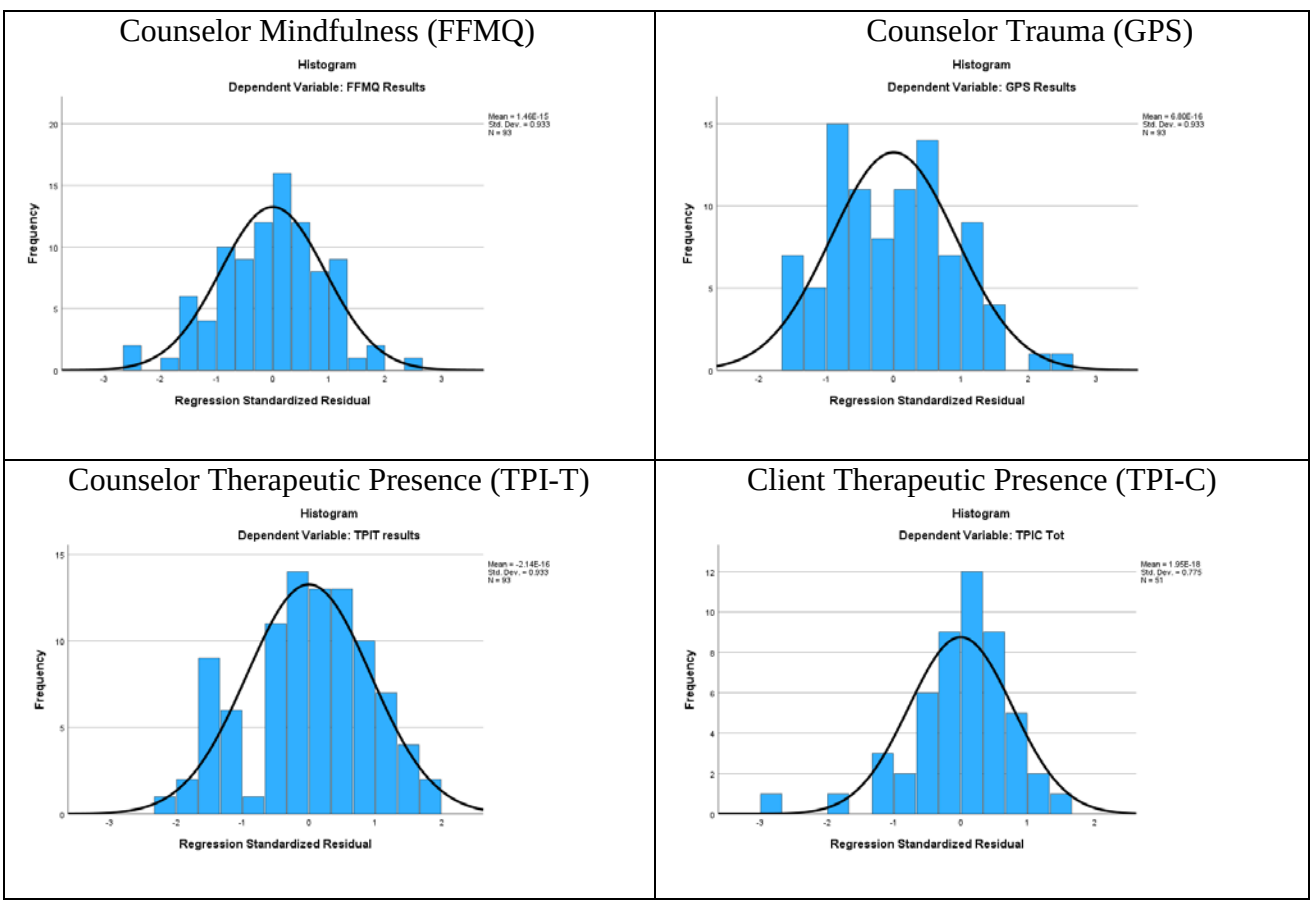
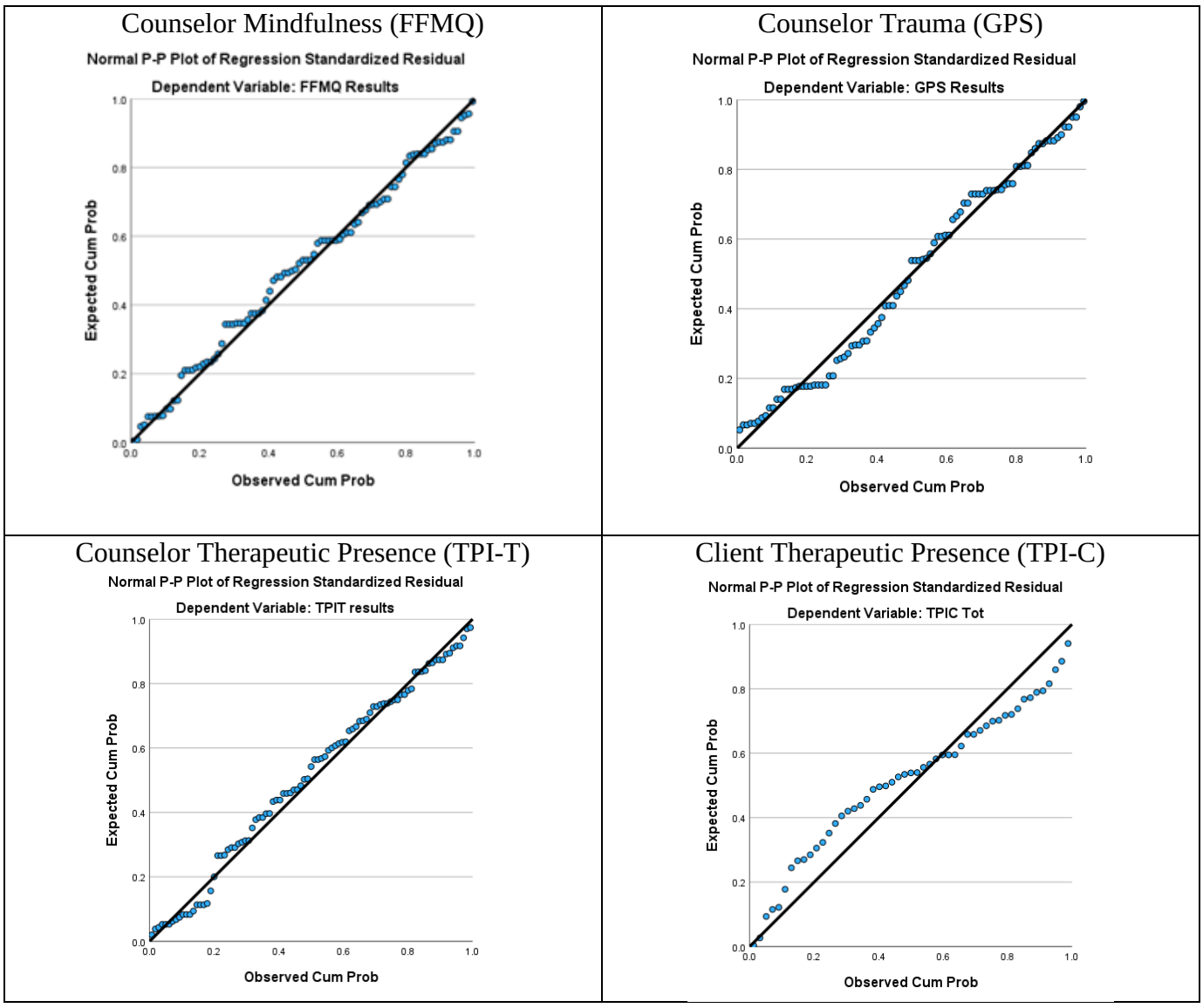


Figure 7

Assumptions of Linearity for Counselor, Client, and Pooled Data Across Variables



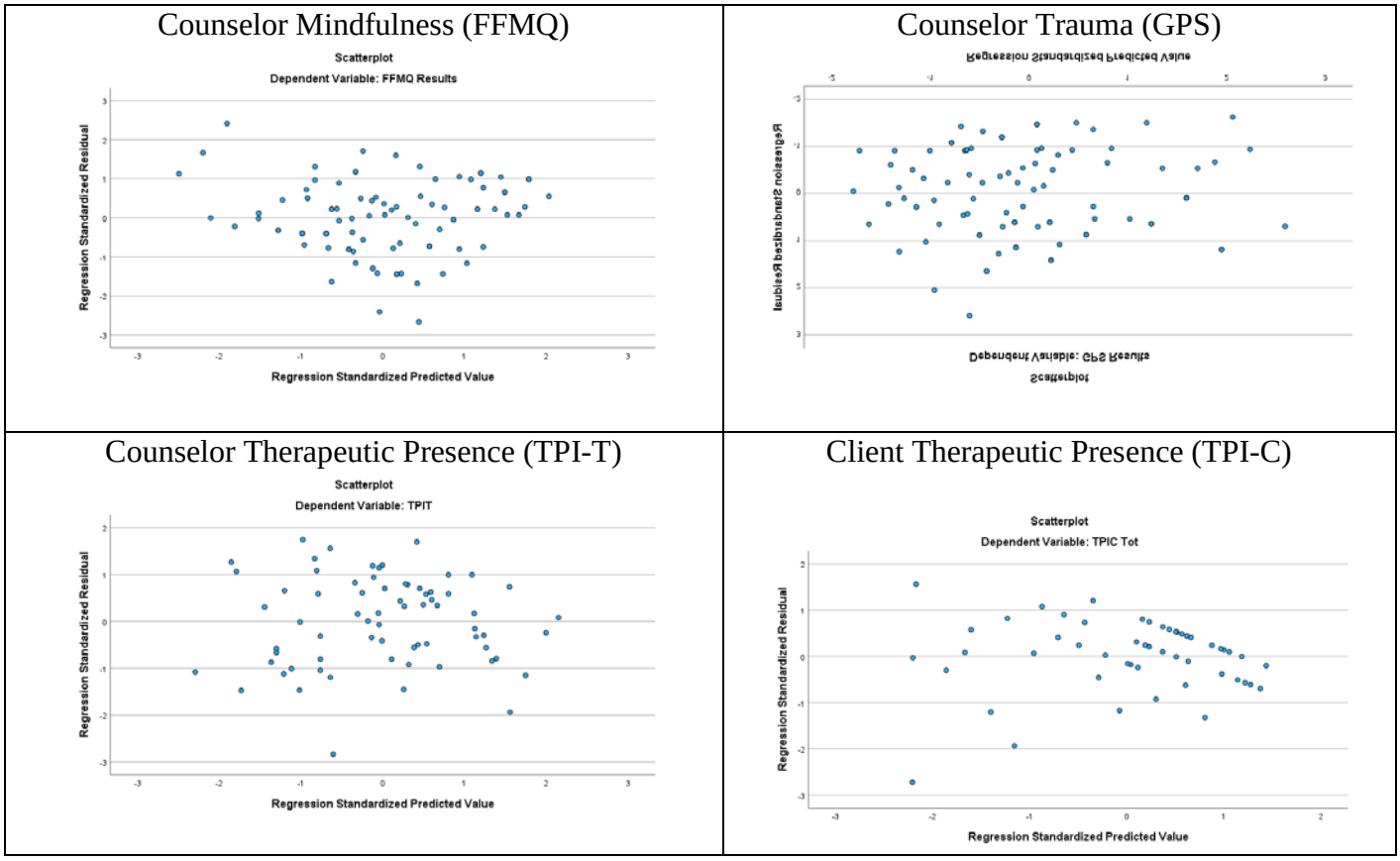
Next, we explored assumptions with counselor data for trauma change at level three and found no outliers ± 3 standard deviations from the mean. We assessed the histogram and determined that we met the assumption of normality (see Figure 6). We assessed the normal P-P plot and determined that we met the assumption of linearity (see Figure 7). We inspected multicollinearity using the VIF scores for our counselor trauma variables and determined scores to be in the acceptable range. We then analyzed the standardized residual and standardized predicted scatterplot and determined that we met the homoscedasticity assumption (see Figure 8). Finally, we assessed skewness and kurtosis and found all variables in the acceptable range.

We then explored assumptions with counselor data for therapeutic presence at level three and found no outliers in the data. We assessed the histogram and determined that we met the assumption of normality (see figure 6). We analyzed the normal P-P plot and determined that we met the assumption of linearity (see Figure 7). We then inspected multicollinearity and found scores to be in the acceptable range. We analyzed the standardized residual and standardized predicted scatterplot and determined that we met the homoscedasticity assumption (see Figure 8). Finally, we assessed for skewness and kurtosis and found results within the acceptable range.

Next, we checked client data to explore assumptions for client's view of counselor's therapeutic presence. We found no outliers in the data. We assessed the histogram and determined that we met the assumption of normality (see Figure 6). We then assessed the normal P-P plot and determined that the assumption of linearity was tenable (see Figure 7). Next, we analyzed VIF scores to assess multicollinearity and found results within the acceptable range. We then analyzed the standardized residual and standardized predicted scatterplot and found that the assumption of homoscedasticity was tenable (see Figure 8). We analyzed skewness and kurtosis and found scores to be in the acceptable range.

Figure 8

Assumptions of Homoscedasticity for Counselor, Client, and Pooled Data Across Variables



Despite the normality of our data, HLM is a remarkably robust analysis even with violations of distributional assumptions. Schielzeth and colleagues (2020) explored the utility of HLM analysis on various datasets with intentional assumption violation and found that these violations on either random effect variances or residual variances had surprisingly little biasing effect on the estimates of interest. The only notable exception in their sample was found in the estimate of group variance when the underlying distribution was bimodal, which resulted in mild upward bias. Severe skewness and severe heteroscedasticity did affect precision of estimates in their sample, which were appropriately reflected in increased uncertainty estimates. Additionally, they found that correlation between fixed effect estimates resulted in almost no bias in estimates

on average, though there was slightly less precision when predictors were very strongly correlated (above $r = 0.8$). Correlations at $r = 0.5$ or below had almost no effect on parameter estimates. Overall, bias in fixed effect estimates was small in every scenario (less than 1%) and bias in group effect variances was also small (less than 2%) in most cases but up to 10% in bimodal group variance distributions with more extreme deviation in random effect predictors. Prediction error was small compared to control scenarios for fixed effects with small increase in cases with severe heteroscedasticity.

Preliminary Analysis Between Treatment and Control

We conducted preliminary analyses to equate groups on covariates and primary variables for counseling students in the intervention and control group. We also conducted preliminary analysis on covariates and primary variables for clients whose counselor was in either the treatment or the control group.

Counseling Student Group Differences in Covariates

To equate counseling students by group on covariates (see Table 5) we conducted an independent samples t-test and found two statistically significant differences between treatment and control groups for mindfulness experience and trauma history. For counseling students in the treatment group ($M = 2.65$, $SD = .60$), their baseline mindfulness experience was statistically significantly lower than the control group ($M = 3.13$, $SD = .35$), F (2,23) = 4.54, $p = .044$, $d = .54$, CI [-1.75 –.005]. These results indicate that counseling students in the treatment group had less overall prior mindfulness experience at baseline than counseling students in the control group. Additionally, for counseling students in the treatment group ($M = 1.24$, $SD = .56$), they had statistically significantly more rates of self-reported trauma (measured on a three-point scale 1 = no, 2 = unsure, 3 = yes) compared to the control group ($M = 2.25$, $SD = .88$), $F(2,23) = 4.68$,

p = .041, d = .68, CI [-2.42 – -.54]. The treatment group had 14 students identify as having a trauma history, one unsure, and two not out of a total of 17. The control group had two students identify as having a trauma history, four being unsure, and two no out of a total of eight students. Overall, the participants identified having a trauma history or possibly having a trauma history in 21/25 cases, which is nearly 85% of the students currently enrolled in practicum in this program.

Table 5

Counseling Student Group Differences on Covariates

	Treatment				Control			
	n	**Mean**	**Mode**	***SD***	***n***	**Mean**	**Mode**	***SD***
Gender	17	.24	0	.43	8	.13	0	.35
Age	17	26.35	24	3.51	8	28.13	25	3.79
Race	17	5.00	6	1.45	8	5.13	6	1.80
Mindfulness Experience	17	2.65	2	.60	8	3.13	3	.35
Confidence in Building Therapeutic Relationship	17	3.59	4	.50	8	4.38	4	.51
Trauma History	17	1.24	1	.56	8	2.25	2	.88
Confidence in Clinical Skills	17	3.00	3	.61	8	3.88	4	.64
Time Since Trauma	17	3.53	4	1.06	8	3.13	4	1.35
Single/Multiple Traumatic Event	17	1.50	2	.51	8	1.38	1	.51
Type of Trauma	17	3.73	3	1.62	8	4.38	6	1.92

Counseling Students Group Differences on Primary Variables

To equate counseling students by group on primary variables related to state mindfulness, trauma symptoms, and therapeutic relationship (see Table 6), we conducted an independent samples t-test and found a statistically significant difference between groups on the Five Facet Mindfulness Questionnaire (Baer et al., 2008) Observing subscale, with counseling students in the treatment group (M = 25.76, SD = 5.64) having lower scores than counseling students in the

control group (M = 26.25, SD = 2.49), F(2,23) = 13.70, p < .001, d = 4.9, CI [-.939 – 7.43]. We also had a low sample size, so statistically significant differences were harder to detect. It is worth noting that there was a nine-point average score difference on the FFMQ between the treatment group and control, with counseling students in the control group showing greater baseline mindfulness than the treatment group. There was also a 13-point average score difference on TPI-T baseline scores between treatment and control, with the control group reporting greater therapeutic presence. Finally, there was a two-point average difference in GPS trauma scores between treatment and control, with treatment group showing greater trauma symptoms compared to control. All other variables were not statistically significantly different across groups.

Table 6

Counseling Student Group Differences on Primary Variables

	Treatment			Control		
	n	***M***	***SD***	***n***	***M***	***SD***
Global Psychotrauma Screen (GPS)	17	9.06	4.33	8	7.00	5.80
GPS Overall Functioning	17	7.35	.931	8	8.13	2.29
Observing	17	25.76	5.64	8	26.25	2.49
Describing	17	27.00	6.48	8	28.75	3.10
Acting with Awareness	17	23.24	6.39	8	27.00	6.99
Non-Judging	17	26.18	9.13	8	26.13	5.89
Non-Reactivity	17	20.41	4.16	8	22.88	3.68
Five Facet Mindfulness Overall	17	122.59	21.00	8	131.00	16.16
Therapeutic Presence Inventory	17	20.35	16.72	8	33.00	11.36

Client Group Differences in Covariates

We conducted a preliminary analysis on clients across counselor group to explore differences in covariates (see Table 7) using an independent samples t-test and found statistically significant differences between groups only for prior counseling experience. Clients in the

treatment group (M = 2.50, SD = .92) had statistically significantly less experience with counseling prior to seeing their present counselor than clients in the control group (M = 3.35, SD = 1.49). All other variables were not statistically significantly different, suggesting a relative similarity across client groups.

Table 7

Client Group Differences in Covariates by Counselor Group

	Treatment				Control			
	n	**Mean**	**Mode**	***SD***	***n***	**Mean**	**Mode**	***SD***
Age	17	20.88	21	2.03	8	24.88	22	8.85
Gender	17	1.88	2	.35	8	1.88	2	.33
Race	17	4.5	6	1.76	8	4.8	6	1.86
Prior Counseling	17	2.50	4	.92	8	3.35	3	1.49
Symptom Cluster	17	2.75	1	1.98	8	3.59	1	1.87
Subjective Suffering	17	5.13	6	2.41	8	5.47	6	2.21
Number of Sessions	17	1.35	1	.45	8	1.37	1	.49

Client Group Differences in Primary Variables

We conducted a preliminary analysis on the client outcome variable (TPI-C) across counselors by group to explore differences in primary variables (see Table 8). We conducted an independent samples t-test and did not find any statistically significant differences among clients by counselor group at baseline, suggesting a relative balance among clients in presenting concerns.

Table 8

Client Group Differences in Primary Variables by Counselor Group

	Treatment			Control		
	n	***M***	***SD***	***n***	***M***	***SD***
Therapeutic Presence Inventory Client Version	17	19.62	2.06	8	18.80	1.42

Relationships among Primary Variables

We then conducted a correlational analysis to examine the validity of the relationships among primary variables and covariates in the hierarchical linear model.

The primary variables in the correlational analysis include the Global Psychotrauma Screen (GPS), the Five Facet Mindfulness Questionnaire (FFMQ), the Therapeutic Presence Inventory – Therapist Version (TPI-T), and the Therapeutic Presence Inventory – Client Version (TPI-C). We also explored correlations among the preliminary variables and the subscales of the Five Facet Mindfulness Questionnaire, including observing, describing, acting with awareness, non-judging, and non-reactivity (see Table 9).

Global Psychotrauma Screen

We analyzed the results of the correlational analysis to examine relationships among variables and found statistically significant bivariate relationships between the Global Psychotrauma Screen, the Five Facet Mindfulness Questionnaire, and the Therapeutic Presence Inventory – Therapist Version. We also found statistically significant relationships among four of the five subscales of the FFMQ (all but observing) and the GPS. Firstly, the GPS was statistically significantly negatively correlated with the FFMQ (-.53, p <.01), and the negative association may suggest that mindfulness buffers some of the symptoms of trauma or provides adaptive coping mechanisms. However, it could also be that an increase in trauma symptoms negatively affects state mindfulness. Next, the TPI-T was also statistically significantly negatively correlated with the GPS (-.38, p < .01) , suggesting that lower active trauma symptoms are associated with increased self-reports of therapeutic presence or higher reports of trauma symptoms are associated with lower reports of therapeutic presence. Finally, describing (-.31, p < .01) acting with awareness (-.49, p < .01), non-judging of inner experience (-.55, p < .01)

and non-reactivity (-.51, $p < .01$) were all statistically significantly negatively correlated with the GPS. As these subscales of mindfulness went down, GPS scores went up, suggesting that facets of mindfulness may reduce trauma symptoms. The Therapeutic Presence Inventory – Client Version were not statistically significantly correlated with the GPS at baseline.

Five Facet Mindfulness Questionnaire

We analyzed the results of the correlational analysis to examine relationships between variables and found statistically significant bivariate relationships between the Five Facet Mindfulness Questionnaire and the Therapeutic Presence Inventory – Therapist Version. We also found statistically significant positive relationships between the FFMQ and all subscales, as expected. Firstly, the FFMQ was statistically significantly positively correlated with the TPI-T (.51, $p < .01$), suggesting that higher state mindfulness translated to higher self-reports of counselor therapeutic presence.

Therapeutic Presence Inventory – Therapist Version

We analyzed the results of the correlational analysis to examine relationships between variables and found statistically significant bivariate relationships between the Therapeutic Presence Inventory – Therapist Version. The TPI-T, as expected, was statistically significantly positively correlated with four of the five subscales on the FFMQ, including describing (15%), acting with awareness (15%), non-judging of inner experience (14%), and non-reactivity (17%). The observing subscale was not statistically significantly correlated.

Therapeutic Presence Inventory – Client Version

We analyzed the results of the correlational analysis to examine relationships between variables and did not find any statistically significant bivariate relationships between the

Therapeutic Presence Inventory – Client Version and any other primary variables at baseline. This may suggest a misalignment with client's perceptions of their counselor's therapeutic presence and counselor's self-reported therapeutic presence.

Relationship among Covariates

Counselor Covariates

The counselor level covariates in the correlational analysis include gender, age, race, trauma history, type of trauma, time since trauma, duration of traumatic event, confidence in clinical skills, confidence in building therapeutic relationships, and mindfulness experience. The client level covariates in the correlational analysis include age, gender, counseling experience, symptom clusters, and subjective suffering (see Table 10).

We analyzed the results of the correlational analysis to examine relationships between variables and found statistically significant bivariate relationships among the following variables.

- *Counselor race*: Counselor race was statistically significantly positively correlated with age (.39, $p < .01$) and confidence in counseling skills (.26, $p < .05$). White counseling students tended to be older in our sample, and they also tended to have more clinical confidence compared to counseling students who identified as a race other than White.
- *Counselor gender*: Counselor gender was statistically significantly positively correlated to confidence in counseling skills (.32, $p < .01$). Male counseling students typically reported greater rates of confidence in clinical skills compared to female counselors.
- *Counselor age*: Counselor age was statistically significantly positively correlated to time since trauma (.29, $p < .05$), with older counselors reporting more time had passed since their traumatic event. Counselor age was also statistically significantly positively correlated with confidence in clinical skills (.39, $p < .01$), with older counseling students typically reporting

more confidence in clinical skills.

- *Counselor mindfulness experience*: Counselor mindfulness experience was also statistically significantly positively correlated with confidence in clinical skills (.24, $p < .05$), with counselors reporting more overall experience with mindfulness before the study also reporting higher rates of confidence in their clinical abilities. Counselor mindfulness experience was also statistically significantly positively correlated with confidence in building therapeutic relationships (.35, $p < .01$), with counselors reporting greater confidence in building therapeutic relationships when they had more experience or practice with mindfulness prior to the study. Finally, counselor mindfulness experience was also statistically significantly positively correlated to time since trauma (.24, $p = .05$), with those who reported their trauma history happening longer ago also reporting greater experience with mindfulness prior to the study.
- *Confidence in building therapeutic relationships*: As expected, confidence in building therapeutic relationships was statistically significantly positively correlated with confidence in clinical skills (.46, $p < .01$), though we cannot infer directionality in this case. We scored both confidence in building therapeutic relationships and confidence in clinical skills on a 5-point Likert scale, with 1 = terrible, 2 = poor, 3 = average, 4 = good, 5 = excellent. Therefore, either greater confidence in clinical skills predicted greater confidence in building therapeutic relationships, or vice versa.
- *Trauma history*: Counselor self-reported trauma history was statistically significantly negatively correlated with mindfulness experience (- .30, $p < .01$). Self-reporting a trauma history was also statistically significantly negatively correlated to confidence in counseling skills (- .39, $p < .01$), and statistically significantly negatively correlated to confidence in building therapeutic relationships (-.43, $p < .01$). Thus, those who self-reported having a trauma history

typically reported less experience with mindfulness, less confidence in clinical skills and less confidence in building therapeutic relationships.

- *Type of trauma*: Type of trauma was also statistically significantly positively correlated with the duration of the traumatic event (.41, $p < .01$). We coded type of trauma as 1 = physical abuse, 2 = sexual abuse, 3 = emotional abuse, 4 = severe injury, 5 = life-threatening experience, 6 = death of loved one, 7 = harming another person, or 8 = COVID-19 related trauma. We coded duration of traumatic event 1 for single event and 2 for events that occurred multiple times or over a duration of time. Type of trauma was also statistically significantly negatively correlated with time since the trauma (-.30, $p < .01$), with most counseling students reporting that their trauma occurred more than one year ago.

Client Covariates

We analyzed the results of the correlational analysis to examine relationships between variables and found statistically significant bivariate relationships between client age, counseling experience, symptom cluster, and subjective suffering (see Table 11).

- *Age*: Client age was a statistically significantly positively correlated with counseling experience (.45, $p < .05$). We measured counseling experience as follows: 1 = no prior counseling experience, 2 = 1-10 prior sessions, 3 = 11-20 prior sessions, 4 = 20-40 prior sessions, and 5 = more than 40 prior sessions. As age increased, counseling experience went up.

- *Gender*: Gender was statistically significantly negatively correlated to number of sessions attended (-.32, $p < .01$), with female clients attending more sessions with their assigned student counselor than male clients. Gender was also statistically significantly negatively correlated to prior counseling experience (-.25, $p < .05$), with female clients having more counseling experience than male clients. Finally, gender was statistically significantly negatively

correlated with symptom cluster, with male clients tending to seek services for personal growth, relationships, or academics, whereas female clients were more likely to seek services for anxiety, depression, or trauma.

- *Race*: Client race was also statistically significantly positively correlated to gender (.29, $p < .05$). The majority of the clients who sought therapy were White females. Client race was also statistically significantly negatively correlated to number of sessions (-.26, $p < .01$). White clients tended to go to more sessions with their counselor, whereas clients of color tended to terminate earlier. Finally, race was also statistically significantly correlated to subjective suffering at the beginning of treatment (.52, $p < .01$). White clients tended to report higher rates of subjective suffering than clients of color.

- *Symptom cluster*: Client symptom cluster was also statistically significantly negatively correlated with subjective suffering (-.49, $p < .05$). We measured symptom cluster as follows: 1 = anxiety, 2 = depression, 3 = trauma, 4 = relationships, 5 = personal growth, 6 = academic/focus. We measured subjective suffering on a 1-10 scale, with 1 representing less suffering and 10 representing more. Thus, clients who sought counseling for relationship, personal growth, or academics typically reported less subjective suffering than clients seeking counseling for anxiety/stress, depression, or trauma.

- *Number of sessions*: Client number of sessions with their counselor was statistically significantly negatively correlated to gender (-.32, $p < .05$) and prior counseling experience (-.25, $p < .05$). Clients seeing male counseling students attended fewer sessions than clients seeing female counseling students, though the sample size was small and strongly favored female counseling students, so this should be interpreted with caution. Additionally, those who reported more experience with counseling prior to this study also typically attended more sessions.

Table 9

Correlations among Primary Variables

	GPS	FFMQ	TPI-T	TPI-C	OBS	DES	AWA	NJ	NR
GPS	1								
FFMQ	-.53**	1							
TPI-T	-.38**	.51**	1						
TPI-C	-.08	-.01	.08	1					
Observing	.17	.30**	.16	-.00	1				
Describing	-.31**	.76**	.41**	.16	.28**	1			
Awareness	-.49**	.73*	.31**	-.18	-.17	.44**	1		
Non-judge	-.55**	.78**	.42**	-.04	.04	.41**	.44**	1	
Non-react	-.51**	.83**	.44**	.13	.09	.57**	.63**	.62**	1

Note: * $p < .05$, ** $p < .01$

Table 10

Correlations among Counselor Covariates

	Race	Gend	Tra Hx	Tra Type	Tra Time	Tra Evt	Con CS	Con Tr	Age	Md Exp
Race	1									
Gender	.08	1								
Trauma Hx	-.03	-.14	1							
Trau Type	-.14	.08	-.20	1						

(table continues)

	Race	Gend	Tra Hx	Tra Type	Tra Time	Tra Evt	Con CS	Con Tr	Age	Md Exp
Trau Time	.20	-.09	.07	-.41**	1					
Trau Event	.24*	.07	.13	-.30**	.10	1				
Confid CS	.26*	.36**	-.39**	-.14	.06	-.02	1			
ConfidTR	.06	-.01	-.43**	.18	-.17	.01	.46**	1		
Age	.39**	-.03	-.08	-.29**	.36**	.17	.45**	.14	1	
Mindful Exp	.11	-.01	-.30**	-.02	-.19	.24*	.24*	.35**	.18	1

Note: * $p < .05$, ** $p < .01$

Table 11

Correlations among Client Covariates

	Age	Gender	Session	Counseling HX	Symptom Cluster	Suffering	Race
Age	1						
Gender	-.2	1					
Session	-.14	-.32**	1				
Counseling HX	.45**	-.25*	-.23*	1			
Symptom Cluster	.18	-.27*	.08	.10	1		
Suffering	-.08	.17	.06	-.17	-.49**	1	
Race	.02	.29*	-.26*	-.09	-.16	.52**	1

Note: * $p < .05$, ** $p < .01$

Final Correlations among Covariates and Primary Variables for Clients and Counselors

We identified relationships among primary variables, client covariates, and counseling student covariates. We then analyzed the results of a combined bivariate correlation to explore relationships among all identified variables (see Table 12).

Counselor Covariates and Primary Variables

We ran a bivariate correlation to examine relationships between the GPS, the FFMQ, the TPI-T, the TPI-C and counselor covariates. The Global Psychodrama Screen was statistically significantly negatively correlated to counseling student race (-.38, $p < .01$). White counseling students tended to report lower overall trauma symptoms compared to their non-white peers. The GPS was also statistically significantly positively correlated to trauma history (.35, $p < .01$), meaning those who reported having a trauma history had higher trauma scores on the GPS. The GPS was also statistically significantly negatively correlated to time since trauma (-.30, $p < .01$). Counseling students who reported more trauma symptoms also reported their trauma occurred more recently. Finally, the GPS was statistically significantly negatively correlated with age (-.23, $p < .05$), with older counseling students reporting less overall trauma symptoms than younger counseling students.

The Five Facet Mindfulness Questionnaire was statistically significantly positively correlated with race (.32, $p < .01$), with counseling students identifying as White self-reporting greater state mindfulness growth over the duration of the study compared to their peers of color. The FFMQ was also statistically significantly positively correlated to gender (.25, $p < .05$), time since trauma (.21, $p < .05$), and duration of traumatic event (.30, $p < .01$), and confidence in clinical skills (.27, $p < .01$). Males self-reported their FFMQ mindfulness scores higher than females. Those who experienced more time since their traumatic event also self-reported more

state mindfulness. Additionally, those who experienced multiple incidences of trauma also scored higher on the FFMQ than those who had single event traumas. However, it should be noted that most counseling students who reported ongoing duration of trauma also reported their type of trauma to be emotional abuse, whereas those who reported single incident traumas typically reported other forms of trauma, such as physical abuse or death of a relative. Finally, those who scored higher on the FFMQ reported higher rates of clinical confidence; however, directionality cannot be assumed as mindfulness may predispose clinical confidence or clinical confidence may relate to greater state mindfulness.

The Therapeutic Presence Inventory – Therapist Version was statistically significantly positively correlated to counseling student race (.25, $p < .01$), with White students self-reporting more therapeutic presence than their non-white peers. Additionally, the TPI-T was statistically significantly positively correlated to duration of traumatic event (.28, $p < .01$), and mindfulness experience (.29, $p < .01$). Those whose trauma lasted over a longer period typically reported higher scores on the TPI-T. Those who self-reported higher on the TPI-T also reported having more mindfulness experience prior to the study.

Therapeutic Presence Inventory – Client Version was statistically significantly positively correlated to counseling student race (.30, $p < .05$). Counseling students who identified as White had clients who reported experiencing more therapeutic presence, whereas counseling students who identified as another race had clients who reported experiencing lower therapeutic presence.

Client Covariates and Primary Variables

We ran a bivariate correlation to examine relationships between the GPS, the FFMQ, the TPI-T, and the TPI-C and client covariates. The Global Psychodrama Screen was statistically significantly positively correlated to client age (.26, $p < .05$), with counseling students working

with older clients tending to report more overall trauma scores compared to counseling students working with younger clients. The GPS was also statistically significantly positively correlated to client gender (.33, $p < .01$), with counselors working with males tending to self-report more trauma symptoms. The GPS was also statistically significantly negatively correlated to client's prior counseling experience (-.23, $p < .05$). Clients who reported more counseling experience tended to have counselors with less trauma symptoms.

The Five Facet Mindfulness Questionnaire was statistically significantly negatively correlated to client's gender (-.27, $p < .05$). Counseling students working with males tended to self-report lower state mindfulness. Counseling students working with females tended to self-report higher state-mindfulness.

The Therapeutic Presence Inventory – Therapist Version was statistically significantly positively correlated to client overall counseling experience prior to the intervention (.25, $p < .05$). Counselors who self-reported higher therapeutic presence tended to work with clients with more counseling experience prior to the intervention.

The Therapeutic Presence Inventory – Client Version was statistically significantly correlated to client race (.40, $p < .01$). White clients tended to rate their counselor as having more therapeutic presence than clients of color, though this was stronger when the counselor was also White. Asian counselors tended to rate their counselors as less therapeutically present, particularly when the counselor was Latino. Black clients tended to see their White counselors as more therapeutically present during the earlier stages of therapy, whereas this declined toward the end while others tended to increase.

Table 12

Correlations among Client and Counselor Covariates and Primary Variables

Counseling Student										
	Race	**Gender**	**Trauma History**	**Trauma Type**	**Time Since Trauma**	**Duration of Event**	**Clinical Conf**	**Rel Conf**	**Age**	**Mindful Exp**
GPS	-.38**	-.12	.35**	-.04	-.30**	-.07	-.20	.00	-.23*	-.05
FFMQ	.32**	.25*	-.16	.15	.21*	.34**	.27**	.05	.06	.15
TPI-T	.25**	-.07	.10	.02	.15	.28**	.03	.18	.10	.29**
TPI-C	.46**	.09	-.04	-.09	-.11	-.16	.14	.08	-.08	.18

Client							
	Age	**Gender**	**Session Number**	**Counseling Experience**	**Symptom Cluster**	**Subjective Suffering**	**Race**
GPS	.23*	.33**	-.05	-.23*	-.00	.09	.17
FFMQ	-.09	-.27*	.01	.10	-.13	-.11	.16
TPI-T	.03	.07	-.19	.25*	-.02	-.20	-.13
TPI-C	-.14	.05	-.06	.20	-.01	-.06	.40**

Note: * $p < .05$, ** $p < .01$

Selection of Variables for the Model

We examined bivariate correlations among primary variables and covariates for counselor level data and client level data. These correlations assist in model building by allowing us to identify variables to be included or excluded based on statistically significant correlations. The counselor level primary variables (GPS, FFMQ, TPI-T) were statistically significantly correlated with each other, whereas the client primary variable (TPI-C) was not statistically significantly correlated with any other primary variable. However, the TPI-C had interesting statistically significant correlations to several counselor and client covariates. Additionally, all counselor covariates related to one or more primary variable except for type of trauma and confidence in therapeutic relationships, and all client covariates related to one or more primary variable except for number of sessions, though they are still all explored as possible predictors in the hierarchical data analysis.

Hierarchical Linear Model Results

We conducted three hierarchical linear models to test our three hypotheses. To answer RQ1, we intended to conduct a three-level longitudinal hierarchical linear model to explore the effect of the counseling student mindfulness intervention on clients' reports of their counselors' therapeutic presence across time; however, the nature of our data did not support this analysis and produced a singularity. Therefore, for RQ1 we were forced to run a repeated measures analysis of variance (ANOVA). To answer RQ2, we conducted a two-level longitudinal hierarchical linear model to examine predictors on the rate of change in counseling student self-reported state mindfulness across the duration of the intervention. To answer RQ3, we conducted a two-level longitudinal hierarchical linear model to explore predictors on the rate of change in counseling student self-reported trauma scores across the duration of the intervention. We outline

our step-up model fit strategy for each research question below starting with the unconditional (null) model and adding groups of predictors based on hypothesis and prior literature (Gelman & Hill, 2007).

RQ1 Analysis Steps and Results

We used a step-up modeling strategy to attempt a three-level longitudinal HLM with the initial null model incorporating the intercept as the single fixed effect, the random effects associated with the client intercept, the client by intercept, and the residuals. We also used the variance component estimates of the random effects for client, counselor, and residuals at the client level to estimate the intraclass correlation coefficient (ICC) of the TPI-C scores at the counselor and client by counselor levels.

To explore the effects of a 15-week mindfulness intervention on clients' reports of their counselors' therapeutic presence, we sought to understand how scores changed across time. The initial three level longitudinal HLM null model produced a singularity, with a -1.0 correlation, indicating an extreme case of multicollinearity, likely due to the small sample size and a wider range of scores. Therefore, we could not run the three-level longitudinal HLM model and instead ran a repeated measures ANOVA.

We conducted assumption checking for a repeated measures ANOVA. Mauchly's Test of sphericity was not significant (p = .934), and the Greenhouse-Geisser (.99) and Huynh-Feldt (1.0) epsilon indicated that the assumption of sphericity was met, so we could continue with the analysis. There was not a statistically significant main effect for time $F(2,10) = .10$, p = .908, Wilks Lambda = .98, Partial Eta squared = .02, observed power = .06, but the power was very low. However, we did observe a small effect size, which may suggest some clinical and practical significance. Interestingly, there was a statistically significant interaction for the TPI-C by group

over time $F(2,10) = 4.40$, $p = .007$; Wilks Lambda = .53, Partial Eta Squared = .47, observed power = .62. Tests of within-subjects contrasts also indicated a statistically significant quadratic change for time in the interaction between the TPI-C by group $F(1,11) = 19.85$, $p = .012$, Partial Eta Squared = .45, observed power = .78, indicating a very large effect size. In this analysis, the non-significant effect for time is indicative of clients perceiving relatively sustained therapeutic presence from their counselor between Time 1 and Time 3. However, the statistically significant interaction between clients' reports of their counselor's therapeutic presence by group suggests that there was something that occurred at midpoint that influenced group differences and may be related to the mindfulness intervention.

Table 13

Mean Client TPI-C Ratings by Group at Three Timepoints

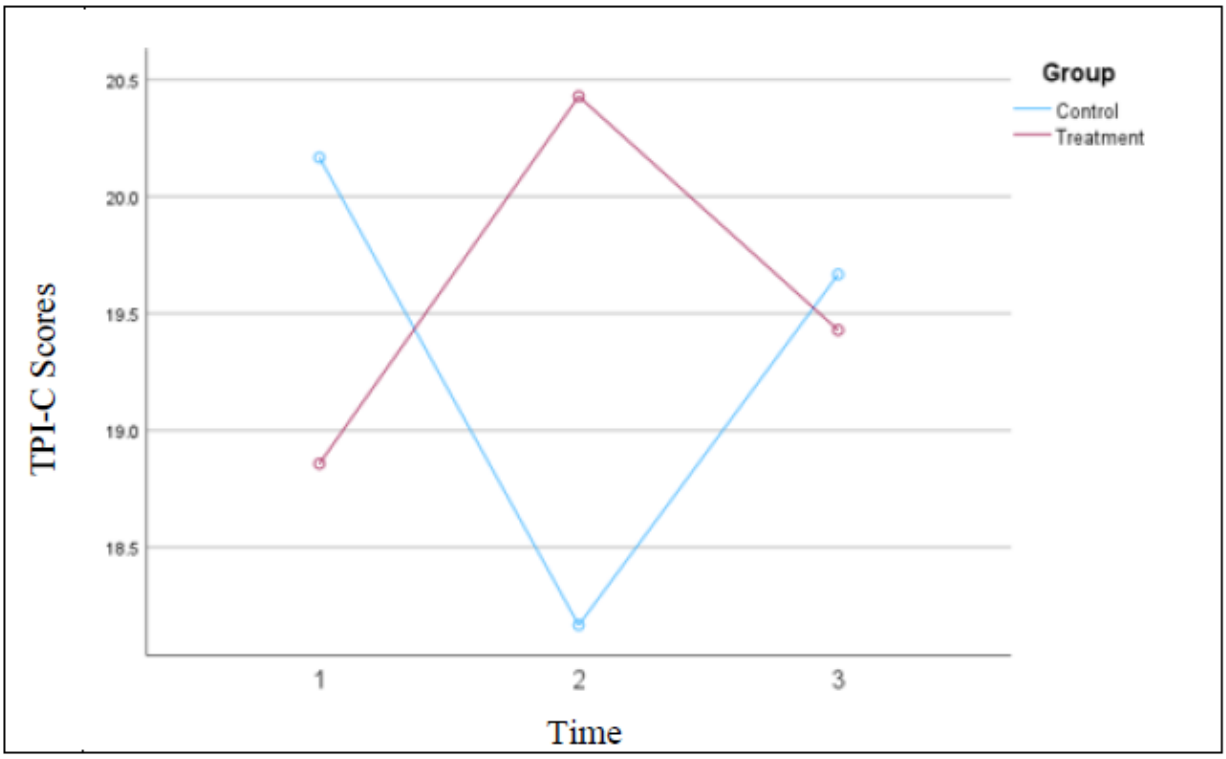
Group	TPI-C Time	Mean	Std. Error
Treatment	1	18.86	.90
	2	20.43	.78
	3	19.43	2.51
Control	1	20.17	.98
	2	18.17	3.55
	3	19.67	1.87

Mean scores for the TPI-C over time by group can be viewed in Table 13. Results indicate that the clients of counselors in the control group who did not receive the mindfulness intervention reported higher initial therapeutic presence from their counselor but experienced a dramatic drop at the midpoint of their therapy compared to the treatment group whose clients initially reported slightly lower therapeutic presence from their counselor at baseline but then a dramatic increase in therapeutic presence at midpoint. At the endpoint, clients of counselors in the treatment group ended slightly higher than clients of counselors in the control group

compared to baseline scores. These results are very interesting considering that we conducted the midpoint of assessment during the time when the counseling students were taking their midterm examinations, suggesting that the mindfulness intervention may have helped counseling students remain more present or reduce distraction during a time of increased stress (see Figure 9)

Figure 9

Change in Client TPI-C Scores by Group across Three Timepoints



RQ 2 Analysis Steps and Results

In this analysis, we sought to explore if state mindfulness of counseling students as measured by the FFMQ changed across time by treatment group. We used a step-up modeling strategy using full maximum likelihood (FML) to fit a two-level longitudinal HLM with the initial unconditional (null) model incorporating the intercept and time as the single fixed effect, the random effects associated with the counselor intercept and the residuals (see Table 14). We

calculated the reliability and the variance component estimates of the random effects for counselor and residuals to estimate the intraclass correlation coefficient (ICC) of the FFMQ scores at the counselor level. The null Model 1.1 indicated that the tests of counselor by time should be retained, with a reliability of .97 and an ICC of .87.

In Model 1.2, we added treatment group at level two and evaluated the model to determine if treatment vs. control group had a statistically significant effect on our model. Reliability remained at .97 and the ICC dropped to .86. Adding the group predictor at level two increased the overall variance explained in the model by 4.5%. We did not find a statistically significant outcome by adding treatment/control group as a counselor level predictor. However, we retained this model in further analysis to explore if other counselor variables influenced group effects.

In Model 1.3, we retained the model from 1.2 and added average counselor GPS trauma scores at level two. We did not include GPS in level one as a time variable despite measuring it at three timepoints because it reduced the reliability of the model from .97 to .46. Instead, we chose to take the average GPS score and incorporate it as a level two counselor predictor variable to explore its role in predicting changes in counselor state mindfulness. Including GPS in level two had a statistically significant effect on the intercept, but not for the time slope. The reliability in this model remained higher at .96, but the ICC dropped to .81. Including GPS as a level two predictor increased the variance explained in the overall model to 35%.

Curious if group and GPS were influential in predicting FFMQ variance if other variables were included, we retained Model 1.3 and added four trauma variables in level two to create Model 1.4. These variables included trauma history, type of trauma, time since trauma, and duration of trauma. Type of trauma and GPS results were statistically significant at the intercept,

and the slope for time was statistically significant for type of trauma, trauma event, and GPS. We calculated the reliability of this model at .94 and the ICC increased to .88. Including trauma demographic variables as level two counselor predictors increased the variance explained to 56% in the overall model.

In Model 1.5, we kept the model from 1.3 and added the statistically significant variables from Model 1.4. We then included counseling skills, therapeutic relationship, and mindfulness experience variables. Only GPS was statistically significant at the intercept, but confidence in clinical skills, confidence in the therapeutic relationship, and GPS were statistically significant in the slope for time. We calculated the reliability of this model at .97 and the ICC increased to .92. However, inclusion of these additional level two predictors decreased the overall variance explained to 46%, which was not an improvement from Model 1.4.

In our final Model 1.6, we retained Model 1.3 with the statistically significant variables from Models 1.4 and 1.5. Our final model variables included time, group, trauma history, type of trauma, time since trauma, trauma duration, confidence in building therapeutic relationships, and GPS trauma scores. Type of trauma and GPS were statistically significant at the intercept, and all variables barring trauma history and time since trauma were statistically significant at the slope for time. We calculated the reliability of the final model at .94 with an ICC of .89. The overall variance explained in this model jumped to 59% (see Table 14). Model 1.5 also had the lowest deviance score of all the models, indicating it was the best fit to the data. Adding counselor demographic variables such as gender, race, and age decreased the variance explained by the overall model, so we did not report Model 1.7 (see Table 14).

Table 14

Fixed Effects and Variance-Covariance Estimates for Counselor Mindfulness

Model 1.1									
		Coeff	**SE**	**t-ratio**	***df***	***p***	**Rel**	**Dev**	**ICC**
Fixed Effects	Intercept, π_0						.97	400.21	.86
	Intercept, β_{00}	124.93	4.652	27.60	17	<.001			
	Time Slope, π_1						.85		
	Intercept, β_{10}	5.46	1.86	2.95	17	.009			
		SD	**Variance**		***df***	***p***	**χ^2**	**Log Likelihood**	
Random Effects	Intercept, r_0	18.87	356.69		11	<.001	434.86	-2.00	
	Time Slope, r_1	6.06	36.80		11	<.001	75.44		
	level-1, e (σ^2)	3.94	15.53						
Variance Explained									
Model 1.2									
		Coeff	**SE**	**t-ratio**	***df***	***p***	**Rel**	**Dev**	**ICC**
Fixed Effects	Intercept, π_0						.97	399.35	.86
	Intercept, β_{00}	131.57	8.38	115.70	16	<.001			
	TrxVsCtrl, β_{01}	-9.22	9.87	-.93	16	.364			
	Time Slope, π_1						.85		
	Intercept, β_{10}	4.51	3.21	1.41	16	.178			
	TrxVsCtrl, β_{11}	1.35	3.92	.34	16	.735			
		SD	**Variance**		***df***	***p***	**χ^2**	**Log Likelihood**	
Random Effects	Intercept, r_0	18.45	340.48		10	<.001	498.01	-1.99	
	Time Slope, r_1	6.04	36.53		10	<.001	76.37		
	level-1, e (σ^2)	3.94	15.51						
Variance Explained		***4.5%***							

(table continues)

Model 1.3									
		Coeff	**SE**	**t-ratio**	***df***	***p***	**Rel**	**Dev**	**ICC**
Fixed Effects	Intercept, π_0						.96	392	.81
	Intercept, β_{00}	150.19	9.47	15.86	15	<.001			
	TrxVsCtrl, β_{01}	-8.95	8.16	-1.10	15	.290			
	GPS, β_{02}	-2.15	.74	-2.86	15	.011			
	Time Slope, π_1						.85		
	Intercept, β_{10}	2.72	5.03	.54	15	.597			
	TrxVsCtrl, β_{11}	1.47	3.89	.38	15	.711			
	GPS, β_{12}	.20	.37	.55	15	.593			
		SD	**Variance**		***df***	***p***	**χ^2**	**Log Likelihood**	
Random Effects	Intercept, r_0	15.15	229.39		9	<.001	391.12	-1.96	
	Time Slope, r_1	5.96	35.57		9	<.001	77.29		
	level-1, e (σ^2)	3.93	15.45						
Variance Explained		***35%***							

Model 1.4									
		Coeff	**SE**	**t-ratio**	***df***	***p***	**Rel**	**Dev**	**ICC**
Fixed Effects	Intercept, π_0						.94	372.60	.87
	Intercept, β_{00}	108.68	23.02	4.72	11	<.001			
	TrxVsCtrl, β_{01}	-12.26	9.12	-1.35	11	.206			
	TraumaHX, β_{02}	-4.31	4.95	-.87	11	.403			
	TraumaTY, β_{03}	.543	2.48	2.20	11	.051			
	TraumaTI, β_{04}	2.73	3.18	.86	11	.409			
	TraumaEV, β_{05}	12.24	6.25	1.96	11	.076			
	GPS, β_{06}	-1.87	.72	-2.60	11	.025			
	Time Slope, π_1						.49		
	Intercept, β_{10}	7.99	6.86	1.17	11	.269			

(table continues)

		Coeff	SE	t-ratio	*df*	*p*	Rel	Dev	ICC
	TrxVsCtrl, β_{11}	-5.38	3.15	-1.71	11	.116			
	TraumaHX, β_{12}	-1.44	1.48	-.97	11	.351			
	TraumaTY, β_{13}	-5.48	1.05	-5.20	11	<.001			
	TraumaTI, β_{14}	1.22	1.18	1.03	11	.323			
	TraumaEV, β_{15}	5.84	2.39	2.44	11	.033			
	GPS, β_{16}	1.19	.35	3.38	11	.006			
		SD	**Variance**		***df***	***p***	χ^2	**Log Likelihood**	
Random Effects	Intercept, r_0	12.50	156.21		5	<.001	233.83	1.86	
	Time Slope, r_1	2.44	5.94		5	<.001	24.11		
	level-1, e (σ^2)	3.97	15.75						
Variance Explained		***56%***							
Model 1.5									
		Coeff	**SE**	**t-ratio**	***df***	***p***	**Rel**	**Dev**	**ICC**
Fixed Effects	Intercept, π_0						.97	365.38	.92
	Intercept, β_{00}	83.31	43.45	1.92	11	.082			
	TrxVsCtrl, β_{01}	2.65	10.44	.25	11	.804			
	TraumaTY, β_{02}	4.45	2.57	1.73	11	.112			
	ConCS, β_{03}	7.14	6.53	1.10	11	.298			
	ConTR, β_{04}	1.57	7.56	.21	11	.840			
	MindEXP, β_{05}	3.67	6.42	.57	11	.579			
	GPS, β_{06}	-1.92	.76	-2.55	11	.027			
	Time Slope, π_1						.16		
	Intercept, β_{10}	17.18	12.55	1.37	11	.199			
	TrxVsCtrl, β_{11}	-.72	2.72	-.26	11	.796			
	TraumaTY, β_{12}	-1.88	1.00	-1.89	11.	.086			
	ConCS, β_{13}	7.67	2.42	3.17	11	.009			

(table continues)

		Coeff	SE	t-ratio	*df*	*p*	Rel	Dev	ICC
	ConTR, β_{14}	-6.67	1.64	-4.06	11	.002			
	MindEXP, β_{15}	-2.59	1.48	-1.75	11	.107			
	GPS, β_{16}	.51	.19	2.74	11	.019			
		SD	**Variance**		***df***	***p***	χ^2	**Log Likelihood**	
Random Effects	Intercept, r_0	13.80	190.34		5	<.001	259.36	N/A	
	Time Slope, r_1	.99	.99		5	.025	12.78		
	level-1, e (σ^2)	3.77	14.22						
Variance Explained		***46%***							
Model 1.6									
		Coeff	**SE**	**t-ratio**	***df***	***p***	**Rel**	**Dev**	**ICC**
Fixed Effects	Intercept, π_0						.94	362.36	.89
	Intercept, β_{00}	66.27	41.82	1.59	10	.144			
	TrxVsCtrl, β_{01}	-6.75	9.99	-.68	10	.515			
	TraumaHX, β_{02}	-3.86	4.79	-.81	10	.438			
	TraumaTY, β_{03}	6.11	2.45	2.50	10	.032			
	TraumaTI, β_{04}	3.64	3.16	1.15	10	.276			
	TraumaEV, β_{05}	13.21	6.08	2.17	10	.055			
	ConTR, β_{06}	8.24	6.71	1.23	10	.248			
	GPS, β_{07}	-1.85	.70	-2.66	10	.024			
	Time Slope, π_1						.35		
	Intercept, β_{10}	35.25	9.90	3.561	10	.005			
	TrxVsCtrl, β_{11}	-12.05	2.99	-4.032	10	.002			
	TraumaHX. β_{12}	-2.69	1.24	-2.17	10.	.055			
	TraumaTY, β_{13}	-5.43	.86	-.633	10	<.001			
	TraumaTI, β_{14}	1.68	.97	1.74	10	.112			
	TraumaEV, β_{15}	5.46	1.91	2.86	10	.017			

(table continues)

		Coeff	SE	t-ratio	*df*	*p*	Rel	Dev	ICC
	ConTR, β_{16}	-5.89	1.82	-3.24	10	.009			
	GPS, β_{17}	1.19	.28	4.23	10	.002			
		SD	**Variance**		***df***	***p***	χ^2	**Log Likelihood**	
Random Effects	Intercept, r_0	12.02	144.40		4	<.001	199.53	-1.81	
	Time Slope, r_1	1.73	2.98		4	.003	16.76		
	level-1, e (σ^2)	3.78	14.27						
Variance Explained		***59%***							

Note TrxVsCtrl = treatment vs. control group, TraumaHX is trauma history, TraumaTY is type of trauma, TraumaTI is time since trauma, TraumaEV is duration of traumatic event, ConTR is confidence in building therapeutic relationships, and GPS is Global Psychotrauma Screen mean scores.

Overview of the FFMQ Results

To better understand the growth in counselor state mindfulness over time between groups, we fit a two-level longitudinal hierarchical linear model and evaluated it with full maximum likelihood estimation. The estimated grand mean intercept from all students at baseline from Model 1.1 is $\beta_{00} = 124.93$ and their average growth rate over time is $\beta_{10} = 5.46$ (FFMQ ($t(17) = 27.60$, $p < .001$). For every increase in time (e.g., about 7 weeks), counseling students' state mindfulness scores on the FFMQ increased on average by 5.46 and this is statistically significant $t(17) = 2.81$, $p < .012$). This finding suggests that the average growth rate explains the predicted changes in students' state mindfulness over time. Additionally, the level one estimated variance for student FFMQ scores (σ^2) over time is 15.53, indicating that some variability amongst counseling students exists in the data. Additionally, the counseling student's variance component at baseline $\pi_{0i} = 378.58$(χ^2 [11] = 435.72, p <.001) and their growth rates π_{1i} = 40.76 (χ^2 [11] = 75.60, p <.001) were both statistically significantly different than zero. Therefore, we can infer a statistically significant variation among students' initial state mindfulness scores on the FFMQ and rates of growth over time. There was also additional variation among students' initial state mindfulness scores and growth rates, suggesting that additional variables might better explain the current progression in state mindfulness in the sample. Finally, we calculated reliability estimates, which indicated a reliable estimate of initial state mindfulness (.97) and a reliable growth rate over time (.86). The ICC for this model was .87. The mixed model equation for the null model for counseling student mindfulness growth over time is listed below.

$$FFMQRESU_{ti} = \beta_{00} + \beta_{10}*TIME_{ti} + r_{0i} + r_{1i}*TIME_{ti} + e_{ti}$$

We then tested Model 1.2 to explore counseling student state mindfulness change over time between groups. The estimated mean intercept for all students at baseline for Model 1.2 is β00 = 131.57 and their average growth rate over time is β10 = 4.51. In this model, the intercept was statistically significant, but the growth over time was not. For students in the treatment group, their baseline FFMQ score was 9.21 points lower than the control group, but over time, students in the treatment group improved 1.35 points more than the control group for every point in time, though this growth rate was not statistically significant. However, we may infer practical and clinical significance, given that the treatment groups' baseline scores were dramatically lower than the control group, yet the treatment group showed stronger rates of growth over time. For Model 1.2, the counseling student's variance component and growth rates were both statistically significantly different from zero. We calculated reliability estimates for this model at .97, with an ICC of .86, and found that including treatment group in the model helped explain 4.5% of the variance. The equation for Model 1.2 can be viewed below.

$$FFMQRESU_{ti} = \beta_{01}*TRXVSCTR_i + \beta_{10}*TIME_{ti} + \beta_{11}*TRXVSCTR_i*TIME_{ti} + r_{0i} + r_{1i}*TIME_{ti} + e_{ti}$$

We then tested Model 1.3 to explore counseling student state mindfulness change over time between groups with the influence of average GPS trauma scores as a level two counselor predictor variable. The estimated mean intercept for all students at baseline for Model 1.3 is β_{00} = 150.19 and the average growth over time is β_{10} = 2.71. In this model, the intercept was statistically significant, but the growth for time was not. Additionally, the group predictor was not statistically significant at intercept or for the slope of time. However, the GPS result was statistically significant at the intercept (β_{02} = -2.15, p = .011), but not for the slope for time. However, the statistically significant intercept suggests that baseline trauma scores may

influence baseline state mindfulness scores. Including these variables in the model increased the variance explained to 35%. The equation for Model 1.3 can be viewed below.

$$FFMQRESU_{ti} = \beta_{00} + \beta_{01}*TRXVSCTR_i + \beta_{02}*GPSRESUL_i + \beta_{10}*TIME_{ti} + \beta_{11}*TRXVSCR_i*TIME_{ti} + \beta_{12}*GPSRESUL_i*TIME_{ti} + r_{0i} + r_{1i}*TIME_{ti} + e_{ti}$$

We then tested Model 1.4 to explore the role of group, GPS scores, and trauma demographic variables such as trauma history, type of trauma, time since trauma, and duration of trauma. The estimated mean intercept for all students at baseline for Model 1.4 is β00 = 108.68 and the average growth rate over time is β10 = 7.99. In this model, the intercept was statistically significant, but the slope for time was not. The intercept for GPS remained statistically significant, and the slopes for time were statistically significant for type of trauma, duration of trauma, and GPS scores, suggesting that these variables influenced the rate and change of FFMQ progression across time. The reliability estimate for this model was .93, and the ICC was .87. Including these variables in the model explained 56% of the overall variance. The equation for Model 1.4 can be viewed below.

$$FFMQRESU_{ti} = \beta_{00} + \beta_{01}*TRXVSCTR_i + \beta_{02}*TRAUMAHX_i + \beta_{03}*TRAUMATY_i + \beta_{04}*TRAUMATI_i + \beta_{05}*TRAUMAEV_i + \beta_{06}*GPSRESUL_i + \beta_{10}*TIME_{ti} + \beta_{11}*TRXVSCTR_i*TIME_{ti} + \beta_{12}*TRAUMAHX_i*TIME_{ti} + \beta_{13}*TRAUMATY_i*TIME_{ti} + \beta_{14}*TRAUMATI_i*TIME_{ti} + \beta_{15}*TRAUMAEV_i*TIME_{ti} + \beta_{16}*GPSRESUL_i*TIME_{ti} + r_{0i} + r_{1i}*TIME_{ti} + e_{ti}$$

Next, we tested Model 1.5 to explore the influence of group, GPS, trauma demographic variables from Model 1.4, and mindfulness variables such as confidence in clinical skills, confidence in building therapeutic relationships, and mindfulness experience. The estimated mean intercept for all students at baseline for Model 1.5 is $\beta_{00} = 83.31$ and the average growth rate over time is $\beta_{10} = 17.18$. In this model, the intercept and growth over time were not statistically significant, however, the intercept for GPS remained statistically significant.

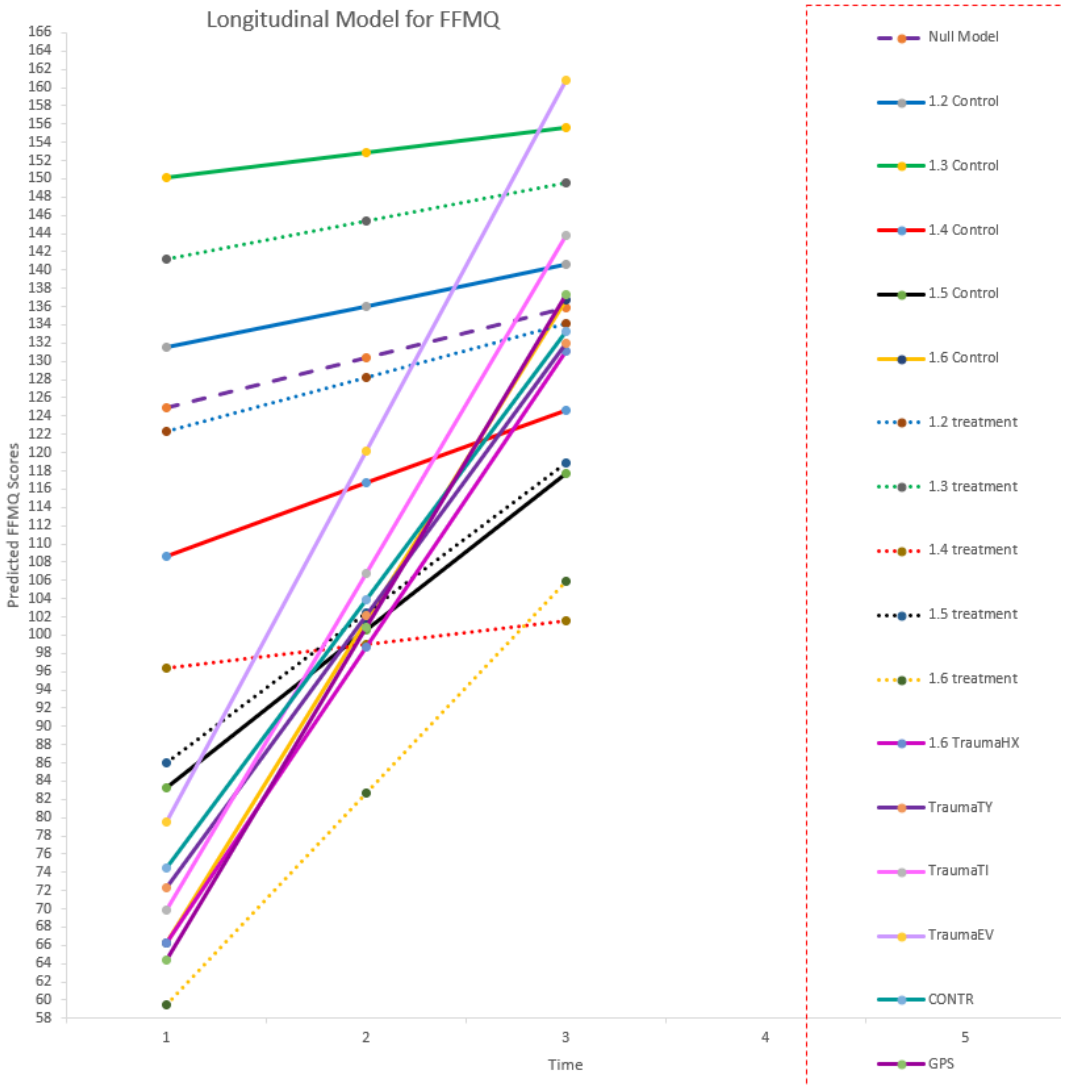
Additionally, the slope for time was statistically significant for confidence in clinical skills, confidence in building therapeutic relationships, and GPS, suggesting that overall confidence in clinical skills and GPS trauma scores related to changes in FFMQ scores over time. The reliability estimate for this model was .95 and the ICC was .87. However, adding these additional variables decreased the variance explained to 46%, indicating that it did not improve the overall model. The equation for Model 1.5 can be viewed below.

$$FFMQRESU_{ti} = \beta_{00} + \beta_{01}*TRXVSCTR_i + \beta_{02}*TRAUMATY_i + \beta_{03}*CONCS_i + \beta_{04}*CONTR_i + \beta_{05}*MINDEXP_i + \beta_{06}*GPSRESUL_i + \beta_{10}*TIME_{ti} + \beta_{11}*TRXVSCTR_i*TIME_{ti} + \beta_{12}*TRAUMATY_i*TIME_{ti} + \beta_{13}*CONCS_i*TIME_{ti} + \beta_{14}*CONTR_i*TIME_{ti} + \beta_{15}*MINDEXP_i*TIME_{ti} + \beta_{16}*GPSRESUL_i*TIME_{ti} + r_{0i} + r_{1i}*TIME_{ti} + e_{ti}$$

Finally, we tested Model 1.6 to explore the influence of group, GPS, and statistically significant trauma and mindfulness variables from prior models. Level two predictors in the final model included treatment group, trauma history, type of trauma, time since trauma, duration of traumatic event, confidence in building therapeutic relationships, and GPS mean scores. The estimated mean intercept was not statistically significant, but the slope for time was statistically significant ($t(10) = 3.56$, $p < .005$). Additionally, the intercept for type of trauma ($t(10) = 2.50$, $p = .032$) and GPS mean scores (($t(10) = -2.66$, $p = .024$) were statistically significant, indicating that these variables influenced baseline FFMQ score differences. Additionally, the slope for time was statistically significant for the intercept ($t(10) = 3.56$, $p = .005$), group ($t(10) = -4.03$, $p = .002$), type of trauma ($t(10) = -6.33$, $p < .002$), duration of traumatic event ($t(10) = 2.86$, $p = .017$), confidence in building therapeutic relationship ($t(10) = - 3.24$, $p = .009$), and GPS mean scores ($t(10) = 4.22$, $p = .002$). Trauma history and time since trauma were not statistically significant.

Figure 10

Longitudinal Graph for FFMQ Final Model 1.6



These results suggest that the treatment group, type of trauma, duration of trauma event, and confidence in building therapeutic relationships, and GPS mean scores explain variance in the rates of change in FFMQ scores over time. The reliability estimate for this model was .94 and the ICC was .89. In using Model 1.6 to understand the data, we could explain 59% of the total variance in FFMQ scores. The graph of fixed effects from Model 1.6 can be viewed in Figure 10. The equation for Model 1.6 can be seen below.

$$FFMQRESUti = \beta00 + \beta01*TRXVSCTRi + \beta02*TRAUMAHXi + \beta03*VIOLENCEi + \beta04*TRAUMATIi + \beta05*TRAUMAEVi + \beta06*THERARELi + \beta07*GPSRESULi + \beta10*TIME + \beta11*TRXVSCTRi*TIMEti + \beta12*TRAUMAHXi*TIMEti + \beta13*VIOLENCEi*TIMEti + \beta14*TRAUMATIi*TIMEti + \beta15*TRAUMAEVi*TIMEti + \beta16*THERARELi*TIMEti + \beta17*GPSRESULi*TIMEti + r0i + r1i*TIMEti + eti$$

Summary of Final FFMQ Model

Model 1.6 represented the best overall fit to the data. Calculations of variance explained for each predictor in the final model can be viewed in Table 16. While the total variance in Model 1.6 is 59%, each individual predictor's variance combined accounted for more than the total variance in the model, suggesting some multicollinearity. Whether counseling students received the intervention or control accounted for almost 5% of the total variance in the final model, which was not a huge amount but was still statistically significantly influential in the slope for time. Models 1.1 to 1.3 predicted the treatment group to grow in FFMQ scores slightly more than the control group; However, by Model 1.4 onward, this trend shifted to favor growth in the control group. This indicates that the addition of other predictor variables influenced the overall predicted model.

In Model 1.6, which accounted for GPS mean scores, trauma variables, and confidence in building therapeutic relationships, counseling students in the treatment group had an initial intercept of 59.52 and their scores were predicted to grow by 23.2 points across each point in time. By midpoint, counseling students in the treatment group were predicted to be at 82.72 points and by endpoint they were predicted to be at 105.68. Counseling students in the control group had an initial intercept of 66.25 and they were predicted to grow by 35 points across each

time point. By midpoint their scores were predicted to be 101.63 and by endpoint they were predicted to be 137.01.

Notably, students in the control group reported more experience with mindfulness prior to the study and had higher baseline FFMQ scores before the intervention. When looking at growth over time by group in Model 1.2, we observed a slightly increased rate of growth in the treatment group compared to the control group, although this difference was not statistically significant. In Model 1.6, the predicted group differences in growth over time favored the control group (see Figure 11). We also noticed that various trauma demographic variables improved the predicted rate of growth on the FFMQ. For example, we discovered that type of trauma explained over 8% of the variance and predicted a slight increase in the slope for FFMQ growth over time. We also discovered that time since trauma predicted nearly 6% of the total variance. Finally, GPS scores alone explained nearly 45% of the variance in the total model, suggesting that active trauma symptoms appear to influence state mindfulness both at baseline scores and in the growth over time. The treatment group had higher rates of trauma and higher scores on the GPS at pretest than the control group, which may have influenced the predicted values in Model 1.6 which highlighted a downward trend in state mindfulness for the treatment group that was not actually the case as seen in Model 1.2. What the results of Model 1.6 indicate is that those with greater trauma scores are predicted to have less state mindfulness growth, yet certain trauma demographic variables appear to contribute to improved FFMQ scores over time.

Due to the unexpected flip in predicted rates of change between treatment and control with the addition of various predictor variables, we also ran a repeated measures ANOVA to better understand the data. We found a statistically significant main effect for time ($F(1,23) = 3.54$, $p = .047$, Wilks' Lambda = .76, Partial Eta Squared = .24, observed power = .60. We did

not find a statistically significant interaction between time by group (F (1,23) = .79, p = .466, Partial Eta Squared = .067, observed power = .20. While the results of the interaction were non-significant, we can observe a slightly larger upward trend from Time 2 to Time 3 for the treatment group in mean scores (see Table 15), whereas the control group tends to plateau (see Figure 11). This plateau may be related to ceiling effects in the assessment, or it could be related to reduced growth over time. These results may have clinical significance, especially considering that the treatment groups' baseline FFMQ scores were considerably lower than the control group.

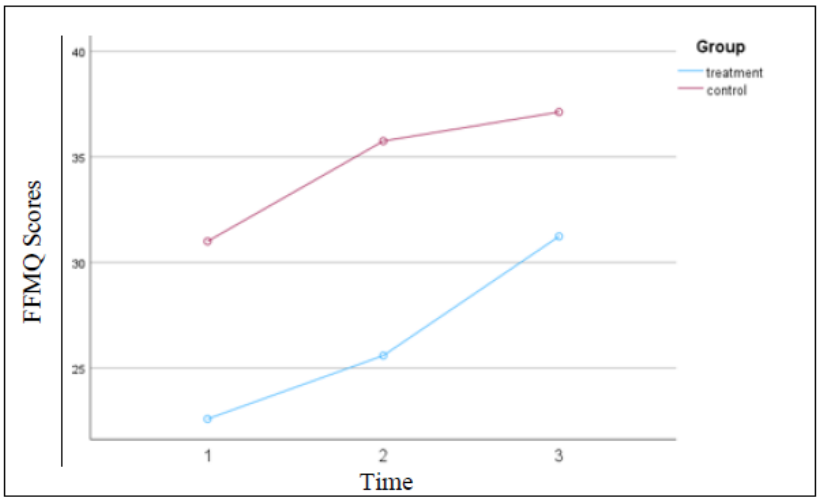
Table 15

Mean Scores for the FFMQ Across Three Timepoints

Group	FFMQ Time	Mean	Std. Error
Treatment	1	122.59	21.00
	2	125.59	17.99
	3	131.24	20.63
Control	1	131.00	16.16
	2	135.75	16.38
	3	137.13	19.25

Figure 11

FFMQ Growth by Group Mean over Three Timepoints



Curious about the influence of some of the predictor variables on the increase in FFMQ slope over time, we ran a series of one-way ANOVAs to better understand the role of these nominal variables in the data. While much of this is outside the scope of RQ2, we thought it would help to better understand some of the growth trends in Model 1.6. In our first ANOVA, we explored differences in mean FFMQ scores between types of trauma. While the ANOVA was not statistically significant, assessment of mean scores indicated that counseling students who reported experiencing emotional abuse had the lowest FFMQ scores at baseline, which endured across the duration of the study. In contrast, counseling students who reported experiencing serious injury, physical or sexual abuse, a life-threatening experience, or death of a loved one trended toward higher mean FFMQ scores at baseline. Those who experienced serious illness or life-threatening situations tended to show increased growth in FFMQ from baseline to post-test, and those who experienced death-related traumas had the highest FFMQ baseline scores but declined the most at posttest. These results may suggest different levels of resiliency and risk across type of trauma that are influential in the rate of FFMQ score change across time.

We were also curious about the influence of time since trauma on the FFMQ slope for time, so we ran another one-way ANOVA to explore group differences. While this ANOVA was also not statistically significant, we discovered that students who experienced a trauma within the last one to six months reported lower mean FFMQ scores across all timepoints, whereas those who experienced a trauma between 6-12 months ago reported consistently higher mean FFMQ scores that endured across time. Interestingly, those who reported a trauma more than 12 months ago showed lower levels across all timepoints compared to the 6-12 month group but remained higher than those between 1-6 months. These results may suggest that recent traumatic events may reduce state mindfulness, but there may be a growth pattern followed by a rebound effect. It

is important to remember our sample size is very small and this may not be generalizable to a larger dataset.

We also explored the role of confidence in building therapeutic relationships. We ran another one-way ANOVA to explore differences between groups, though it was not statistically significant. However, through analysis of mean scores, we discovered that those who rated themselves as average in building therapeutic relationships had the lowest FFMQ scores at baseline and midpoint; those who rated themselves as good at building therapeutic relationships had the highest FFMQ scores across all three timepoints, and those who rated themselves as excellent at building therapeutic relationships reported equally high as the good group at baseline but at posttest their FFMQ scores dropped significantly to be the lowest of all groups, whereas the average group rose dramatically by the endpoint of the intervention.

Finally, we were curious about the role of duration of traumatic event on predicted FFMQ scores. We ran a final ANOVA to explore group differences and discovered that students who experienced multiple traumatic events had higher FFMQ scores across all timepoints, which may explain why this variable predicted greater FFMQ growth over time in our final model.

Table 16

Calculations of Variance Explained for Each Predictor in the Final FFMQ Model

Variable	Variance Explained
Group	4.8%
Trauma History	1.5%
Type of Trauma	8.1%
Time Since Trauma	6.0%
Duration of Traumatic Event	9.5%
Confidence in Building Therapeutic Relationships	1.7%
GPS Mean Scores	45.6%

RQ2.1 Analysis

One of the secondary interests in RQ2 was the role of mindfulness training on counseling students' self-reported therapeutic presence. We ran a hierarchical regression to explore predictors of variance on the Therapeutic Presence Inventory – Therapist version. We assessed statistical assumptions of normality, linearity, homoscedasticity, skewness and kurtosis, multicollinearity, and outliers and found that our data met all assumptions. We added data in three steps, finding that the best model fit included variables seen in step three (see Table 17). We explored the influence of intervention/control group, trauma history, confidence in clinical skills, mindfulness experience, FFMQ scores and GPS scores on predicting therapeutic presence in counseling students. All variables in the final model were statistically significant and explained around 48% of the total variance in TPI-T scores. We assessed beta weights and found that FFMQ (β =.50) positively influenced predicted growth in TPI-T scores. We also discovered that GPS (β =.-29) scores had a negative influence on predicted TPI-T scores, suggesting that higher state mindfulness related to greater self-reports of therapeutic presence and higher trauma scores were related to lower self-reports of therapeutic presence. Finally, beta weights for trauma history (β =.-29) indicated that FFMQ scores rose when students did not report having a trauma history.

Interestingly, those in the control group were predicted to have greater TPIT scores compared to the treatment group. Additionally, those who reported less clinical confidence were predicted to have more therapeutic presence. Assessment of mean scores across time by group supported the hierarchical regression, as those in the control group had higher TPIT scores across time compared to the treatment group (see Table 18). However, the treatment group showed a greater rate of growth from baseline to endpoint that was not observed in the control group.

Table 17

Hierarchical Multiple Regression Analysis Summary Predicting TPI-T Scores

Step and Predictor Variable	B	SE	Beta	*t*	R^2	Adj R^2	R^2 Ch	*p*
Step 1					.005	-.007	.005	.522
Constant	32.27	2.56	-.07	12.63				<.001
Group	-2.06	3.21	.070	-.642				.522
Step 2				.84	.093	.050	.088	.019
Constant	11.07	13.175						.403
Group	-.368	4.00	-.01	-.092				.927
Trauma History	-1.50	2.28	-.08	-.66				.511
Confidence in Clinical Skills	-1.017	2.50	-.05	-.406				.686
Mindfulness Experience	9.10	3.18	.33	2.86				.005
Step 3					.48	.46	.389	<.001
Constant	-.57	13.47		-.04				.966
Group	-6.41	3.15	-.21	-2.03				.045
Trauma History	-5.20	1.83	-.29	-2.84				.006
Confidence in Clinical Skills	-5.88	2.01	-.28	-2.92				.004
Mindfulness Experience	7.81	2.46	.28	3.18				.002
FFMQ Mean	.375	.072	.50	5.20				<.001
GPS Mean	-.95	.318	-.29	-2.99				.004

Note. B = Unstandardized B, Coeff SE = coefficients standard error, Adj = Adjust R^2, R^2 Ch = change, P = significance.

Table 18

Mean Counselor TPI-T Scores by Group at Three Timepoints

Group	FFMQ Time	Mean	Std. Error
Treatment	1	20.35	4.06
	2	32.23	2.94
	3	36.35	3.66
Control	1	33.0	4.02
	2	34.13	4.03
	3	39.25	4.01

RQ3 Analysis Steps

In this analysis, we sought to explore if counseling student trauma as measured by the Global Psychotrauma Screen changed over time depending on treatment group. We used a step-up modeling strategy using full maximum likelihood with a two-level longitudinal HLM with the initial null model incorporating the intercept and time as the single fixed effect, the random effects associated with the counselor intercept, and the residuals (see Table 19). We also used the variance component estimates of the random effects for counselor and residuals to estimate the intraclass correlation coefficient (ICC) of the GPS scores at the counselor level. The null Model 1.1 indicated that the tests of counselor by time should be retained, with an initial reliability of .97 and an ICC of .80.

In Model 1.2 we added treatment group at level two and evaluated the model to determine if receiving the intervention or control had a statistically significant effect on our model. In this model, the reliability dropped to .87 but the ICC remained at .80. The overall variance explained compared to the null model rose by 2.2%, indicating that group only had a slight predictive influence on GPS change over time.

In Model 1.3, we retained the model from 1.2 and added average FFMQ results as a level two counselor predictor. Including FFMQ as a level two predictor dropped the reliability to .84 and the ICC to .74, which is still considered acceptable. The FFMQ predictor was statistically significant at the intercept ($t(15) = -2.93$, $p = .010$), suggesting that state mindfulness has an initial influence on GPS scores at pretest. Adding the FFMQ to the model also increased the variance explained to 36.4%.

Table 19

Fixed Effects and Variance-Covariance Estimates for Counselor Trauma

Model 1.1									
		Coeff	**SE**	**t-ratio**	***df***	***p***	**Rel**	**Dev**	**ICC**
Fixed Effects	Intercept, π0						.87	271.82	.80
	Intercept, β00	8.52	1.07	7.92	17	<.001			
	Time Slope, π1						.30		
	Intercept, β10	-1.12	.38	-2.92	17	.010			
		SD	**Variance**		***df***	***p***	**χ^2**	**Log Likelihood**	
Random Effects	Intercept, r_0	4.23	17.85		11	<.001	138.82	-1.36	
	Time Slope, r_1	.80	.64		11	.126	16.43		
	level-1, e (σ^2)	1.98	3.94						
Variance Explained									
Model 1.2									
		Coeff	**SE**	**t-ratio**	***df***	***p***	**Rel**	**Dev**	**ICC**
Fixed Effects	Intercept, π0						.87	271.32	.80
	Intercept, β00	8.44	2.00	4.22	16	<.001			
	TrxVsCtrl, β01	.11	2.37	.05	16	.964			
	Time Slope, π1						.24		
	Intercept, β10	-1.38	.63	-2.19	16	.044			
	TrxVsCtrl, β11	.40	.78	.51	16	.616			
		SD	**Variance**		***df***	***p***	**χ^2**	**Log Likelihood**	
Random Effects		4.18	17.46		10	<.001	138.77	-1.36	
		.70	.50		10	.115	15.47		
		1.99	3.97						
Variance Explained		***2.2%***							

(table continues)

Model 1.3									
		Coeff	**SE**	**t-ratio**	***df***	***p***	**Rel**	**Dev**	**ICC**
Fixed Effects	Intercept, π_0						.82	263.72	.74
	Intercept, β_{00}	25.74	6.09	4.22	15	<.001			
	TrxVsCtrl, β_{01}	-.89	1.99	-.45	15	.662			
	FFMQ, β_{02}	-.13	.05	-2.93	15	.010			
	Time Slope, π_1						.12		
	Intercept, β_{10}	-6.11	2.24	-2.73	15	.015			
	TrxVsCtrl, β_{11}	.56	.72	.78	15	.50			
	FFMQ, β_{12}	.04	.02	2.07	15	.056			
		SD	**Variance**		***df***	***p***	χ^2	**Log Likelihood**	
Random Effects	Intercept, r_0	3.37	11.36		9	<.001	110.10	-1.32	
	Time Slope, r_1	.44	.19		9	.194	12.35		
	level-1, e (σ^2)	1.95	3.82						
Variance Explained		***36.4%***							
Model 1.4									
		Coeff	**SE**	**t-ratio**	***df***	***p***	**Rel**	**Dev**	**ICC**
Fixed Effects	Intercept, π_0						.83	252.03	.74
	Intercept, β_{00}	35.29	8.66	4.08	12	.002			
	TrxVsCtrl, β_{01}	-.29	1.91	-.15	12	.881			
	Race, β_{02}	-.37	.57	-.64	12	.534			
	Gender, β_{03}	-.56	2.06	-.27	12	.791			
	Age, β_{04}	-.42	.30	-1.39	12	.191			
	FFMQ, β_{05}	-.11	.05	-2.44	12	.031			
	Time Slope, π_1						.30		
	Intercept, β_{10}	-1.43	5.74	-.30	12	.808			
	TrxVsCtrl, β_{11}	.38	.81	-.47	12	.649			

(table continues)

			SE	t-ratio	*df*	*p*	Rel	Dev	ICC
	Race, β_{12}	.06	.25	.23	12	.819			
	Gender, β_{13}	-2.34	1.08	-2.17	12	.051			
	Age, β_{14}	-.18	.22	-.84	12	.419			
	FFMQ, β_{15}	.04	.02	2.29	12	.047			
		SD	**Variance**		***df***	***p***	χ^2	**Log Likelihood**	
Random Effects	Intercept, r_0	3.22	10.37		6	<.001	109.67	-1.26	
	Time Slope, r_1	.71	.051		6	.081	11.24		
	level-1, e (σ^2)								
Variance Explained		***41.9%***							
Model 1.5									
		Coeff	**SE**	**t-ratio**	***df***	***p***	**Rel**	**Dev**	**ICC**
Fixed Effects	Intercept, π_0						.84	251.63	.77
	Intercept, β_{00}	21.91	10.27	2.13	11	.056			
	TrxVsCtrl, β_{01}	-.93	2.45	-.38	11	.713			
	Gender, β_{02}	.79	2.31	.34	11	.740			
	ConCS, β_{03}	-2.4	1.68	-1.43	11	.181			
	ConTR, β_{04}	1.65	1.85	.89	11	.393			
	MindEXP, β_{05}	1.29	1.62	.79	11	.445			
	FFMQ, β_{06}	-.12	.05	-2.63	11	.023			
	Time Slope, π_1						.14		
	Intercept, β_{10}	-2.57	4.24	.61	11	.556			
	TrxVsCtrl, β_{11}	-.99	1.08	-.92	11	.378			
	Gender, β_{12}	-3.22	1.15	-2.80	11	.017			
	ConCS, β_{13}	.68	.80	.86	11	.409			
	ConTR, β_{14}	-1.01	.79	-1.28	11	.230			
	MindEXP, β_{15}	-.90	.71	-1.26	11	.233			
	FFMQ, β_{16}	.05	.02	2.59	11	.025			

(table continues)

		SD	Variance		*df*	*p*	χ^2	Log Likelihood
Random Effects	Intercept, r_0	3.22	10.36		5	<.001	110.34	-1.26
	Time Slope, r_1	.43	.18		5	>.500	3.86	
	level-1, e (σ^2)	1.71	2.93					
Variance Explained		***42.1%***						

Note TrxVsCtrl = group, ConCS = confidence in clinical skills, ConTR is confidence in building therapeutic relationships, MindEXP is mindfulness experience.

In Model 1.4, we retained the predictors from Model 1.3 and added counselor demographic variables including race, gender, and age. We calculated the reliability at .82 and the ICC remained at .74. The FFMQ remained a statistically significant predictor at intercept and the time slope for FFMQ also became statistically significant ($t(12) = 2.22$, $p = .047$). This suggests that the FFMQ influences GPS trauma scores both at baseline and over time, and the overall variance explained increased to 41.9%.

In our final Model 1.5, we included counselor variables of confidence in building therapeutic relationships, confidence in clinical skills, mindfulness experience, and we retained gender and FFMQ scores from Model 1.4. In this model, we calculated the reliability at .84 and the ICC rose to .77. The intercept for FFMQ remained statistically significant, and the slope for time was statistically significant for gender ($t(12) = -2.80$, $p = .017$) and for FFMQ scores ($t(11) = 2.59$, $p = .025$). The overall variance explained in this model increased to 42%. We continued to try and improve on the model by adding trauma variables such as trauma history, trauma type, time since trauma, and duration of traumatic event. However, this reduced the overall variance explained from Model 1.5, so we removed it from the final output and retained Model 1.5.

Overview of GPS Scores

To better understand the change in counselor trauma scores over time between groups, we fit a two-level longitudinal hierarchical linear model and evaluated it with full maximum likelihood estimation. The estimated grand mean intercept for GPS scores from all students at baseline from Model 1.1 is $\beta_{00} = 8.52$ and their average growth was $\beta_{10} = -1.12$ (GPS ($t(17) = 7.92$, $p < .001$) indicating that for every increase in time (e.g., about seven weeks), students GPS scores fell about 1.12 points. This means that over the duration of the semester, all counseling students experienced an average decrease in trauma symptoms. The level one estimated variance

for GPS scores (σ^2) over time is 3.94, indicating slight variability amongst counseling students exists in the data. Additionally, the student's variance component at baseline $\pi_{0i} = 17.85$ (χ^2 [11] = 138.82, $p < .001$) was statistically significant, but their growth rates $\pi_{1i} = .64$ (χ^2 [11] = 16.42, $p = .126$) were not significant. We calculated reliability estimates of initial GPS scores at .87 but the estimated growth rate for time was less reliable at .29. The ICC for this model was .80. The mixed model equation for the null model for counseling student GPS trauma scores over time is listed below.

$$GPSRESUL_{ti} = \beta_{00} + \beta_{10}*TIME_{ti} + r_{0i} + r_{1i}*TIME_{ti} + e_{ti}$$

We then tested Model 1.2 to explore GPS trauma score change over time between groups. The estimated grand mean intercept for all students at baseline for Model 1.2 is $\beta_{00} = 8.43$ and their average growth rate over time is $\beta_{10} = -1.37$. In this model, the initial intercept was statistically significant for GPS but not for group and the slope for time was not statistically significant for either the intercept or the slope for group. We calculated reliability estimates of initial GPS scores at .87 and an ICC of .80, indicating that adding group to the model did not strongly change the model from the null and only added 2.2% of variance explained. The equation for Model 1.2 can be viewed below.

$$GPSRESUL_{ti} = \beta_{00} + \beta_{01}*TRXVSCTR_i + \beta_{10}*TIME_{ti} + \beta_{11}*TRXVSCTR_i*TIME_{ti} + r_{0i} + r_{1i}*TIME_{ti} + e_{ti}$$

We then tested Model 1.3 to explore GPS trauma score change over time between groups with the inclusion of average FFMQ scores as a level two predictor. We were curious about the effect of counselor state mindfulness on trauma scores. The estimated mean intercept for all students at baseline for Model 1.3 is $\beta_{00} = 25.74$ and the average growth rate was $\beta_{10} = -6.11$. In this model, the initial intercept ($t(15) = 4.27$, $p < .001$) and the intercept for the FFMQ ($t(15) =$ -

2.73, p = .010) were statistically significant. The intercept at the slope for time was also statistically significant (t (15) = -2.73), p = .15) and while the slope for FFMQ was not statistically significant, it was extremely close (p = .056), so we continued to add more variables to better understand the effects of the FFMQ over time. Adding the FFMQ to this model increased the reliability to .82, with an ICC of .74. It also improved the variance explained in the model to 36.4%, suggesting that state mindfulness had a noticeable effect on trauma symptoms both at baseline and over time. The equation for Model 1.3 can be viewed below.

$$GPSRESUL_{ti} = \beta_{00} + \beta_{01}*TRXVSCTR_i + \beta_{02}*FFMQRESU_i + \beta_{10}*TIME_{ti} + \beta_{11}*TRXVSCTR_i*TIME_{ti} + \beta_{12}*FFMQRESU_i*TIME_{ti} + r_{0i} + r_{1i}*TIME_{ti} + e_{ti}$$

We retained the variables from Model 1.3 and added demographic variables to explore their effect on GPS between groups for Model 1.4. The estimated grand mean intercept for all students at baseline for Model 1.4 is β_{00} = 35.28 and the estimated growth for time was β_{10} = -1.42. The initial intercept and the FFMQ intercept remained statistically significant. Additionally, the slope for FFMQ was now statistically significant (t(12) = 2.22, p = .047), and the slope for gender was close (.051). We calculated the reliability for this model at .83 and the ICC at .74. The inclusion of counselor demographic variables strengthened the model and increased the overall variance explained to 41.9%. The equation for Model 1.4 can be viewed below.

$$GPSRESULti = \beta00 + \beta01*TRXVSCTRi + \beta02*FFMQRESUi + \beta03*GENDERi + \beta04*RACEi + \beta05*AGEi + \beta10*TIMEti + \beta11*TRXVSCTRi*TIMEti + \beta12*FFMQRESUi*TIMEti + \beta13*GENDERI*TIMEti + \beta14*RACEti*TIMEti + \beta15*AGEti*TIMEti + r0i + r1i*TIMEti + eti$$

Finally, we tested our final Model 1.5 by including counselor mindfulness variables such as confidence in clinical skills, confidence in building therapeutic relationships, and mindfulness

experience. The estimated grand mean for all students at baseline for Model 1.5 is $\beta_{00} = 21.91$ and the average growth rate over time is $\beta_{10} = -2.57$. The initial intercept for FFMQ was statistically significant ($t(11) = -2.63$, $p = .023$). Additionally, the slope for time for gender ($t(11) = -2.80$, $p = .017$) and for FFMQ ($t(11) = 2.59$, $p = .025$) were statistically significant. These results suggest that the FFMQ indeed influenced where students GPS scores began at baseline and how they changed across time. It also suggested that gender was influential in the GPS scores over time. We calculated reliability estimates for this model at .84 with an ICC of .77, and the variance explained increased to 42%. The equation for Model 1.5 can be viewed below.

$$GPSRESUL_{ti} = \beta_{00} + \beta_{01}*TRXVSCTR_i + \beta_{02}*COUNGEND_i + \beta_{03}*CONFIDEN_i + \beta_{04}*THERAREL_i + \beta_{05}*MINDEXP_i + \beta_{06}*FFMQRESU_i + \beta_{10}*TIME_{ti} + \beta_{11}*TRXVSCTR_i*TIME_{ti} + \beta_{12}*COUNGEND_i*TIME_{ti} + \beta_{13}*CONFIDEN_i*TIME_{ti} + \beta_{14}*THERAREL_i*TIME_{ti} + \beta_{15}*MINDEXP_i*TIME_{ti} + \beta_{16}*FFMQRESU_i*TIME_{ti} + r_{0i} + r_{1i}*TIME_{ti} + e_{ti}$$

Summary of Final GPS Model

Model 1.5 represented the best overall fit to the data. Calculations of variance explained for each predictor in the final model can be viewed in Table 20. While the total variance of Model 1.5 is 42%, the variance explained by each predictor individually amounts to more than the total variance in the model, suggesting some multicollinearity. FFMQ scores explained nearly 35% of the total variance, which suggests that state mindfulness influenced how counseling students initially scored on the GPS and how these scores changed across the semester. None of the GPS models indicated statistically significant differences between students in the treatment versus the control group, suggesting that the mindfulness intervention did not change counseling student trauma scores. However, due to the statistically significant null

model, we can infer that all students in both groups experienced a decrease in trauma symptoms across the duration of the study (See Figure 12).

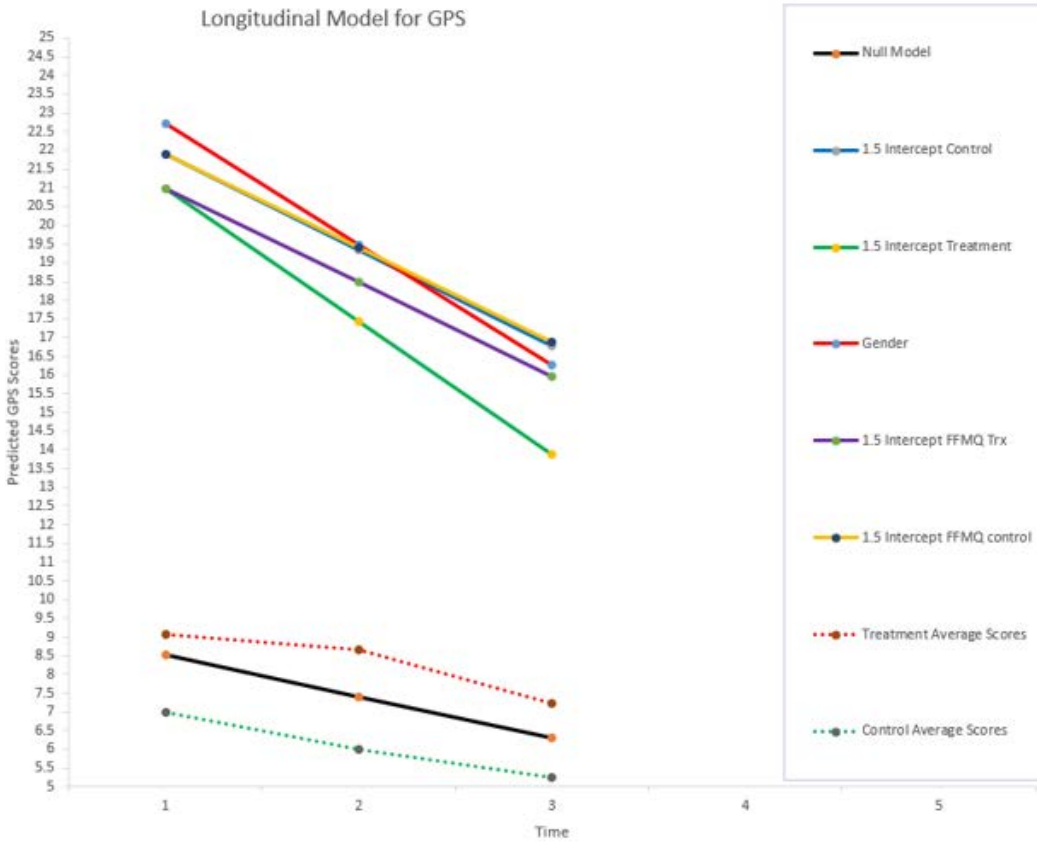
Table 20

Calculations of Variance Explained for Each Predictor in the Final GPS Model

Variable	Variance Explained
Group	2.2%
Gender	.2%
Confidence in Clinical Skills	14%
Confidence in Building Therapeutic Relationships	1.1%
Mindfulness Experience	1.6%
FFMQ Results	34.5%

Figure 12

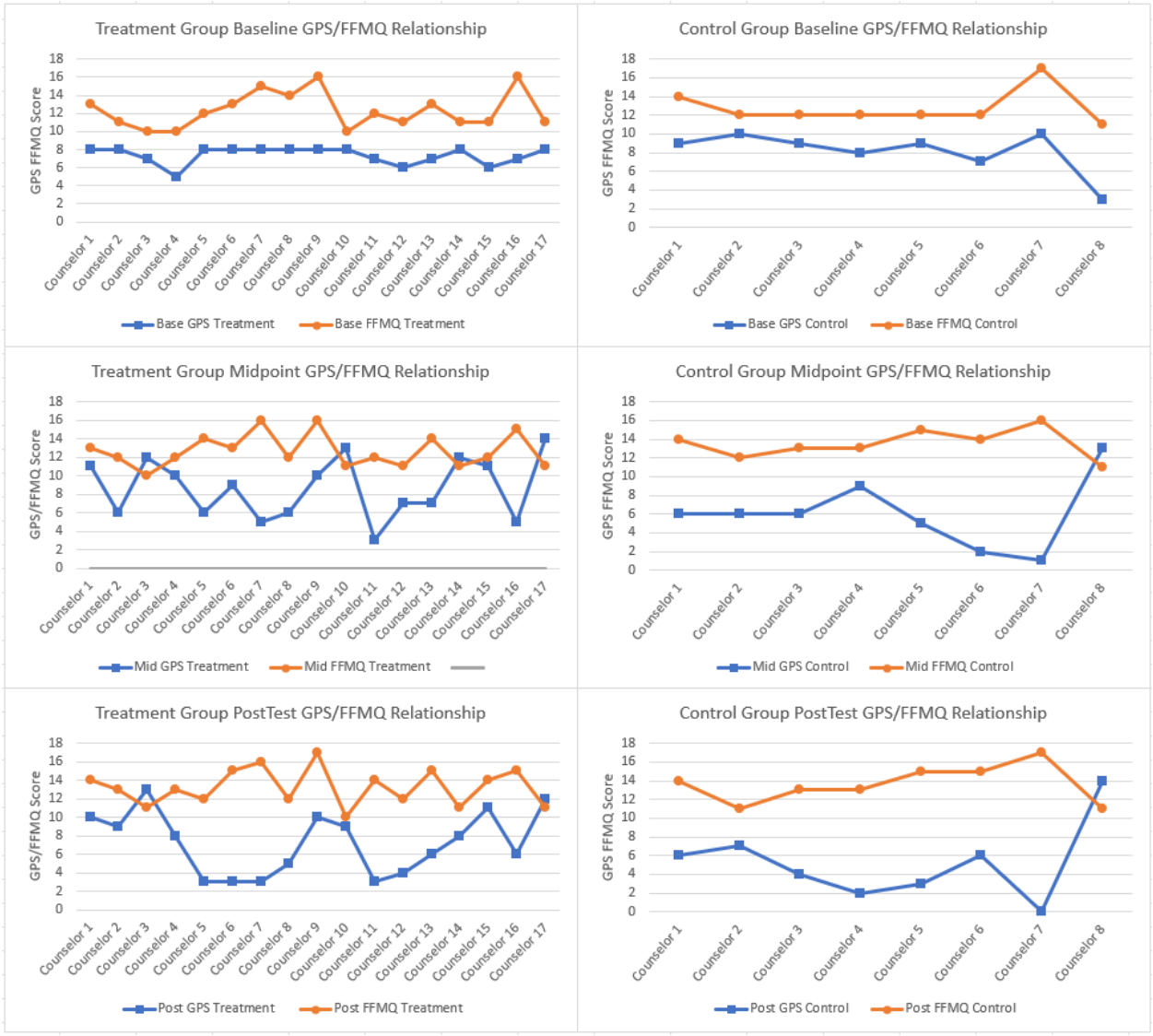
Longitudinal Graph for GPS Final Model 1.5



Given the influence of GPS scores on FFMQ scores in RQ2 and the influence of FFMQ scores on GPS scores in RQ3, there appears to be an inverse relationship between state mindfulness and active trauma symptoms (see Figure 13). While we did not observe this relationship with all students, the pattern is observable in mean GPS/FFMQ scores across time by student. The inverse relationships can be observed in cases where the data between the top and bottom lines show an opposite pattern, which is most evident at the end of the intervention.

Figure 13

Inverse Relationship Between GPS and FFMQ Across Three Timepoints for Both Groups



Summary of Results

The purpose of this study was to address three research questions: RQ1) Do master's counseling students who participate in a 15-week mindfulness training intervention have better client reported therapeutic presence than those who receive no mindfulness training? RQ2) Do master's counseling students who participate in a 15-week mindfulness training intervention have greater self-reported state mindfulness than those who receive no mindfulness training? RQ3) Do master's counseling students who participate in a 15-week mindfulness training intervention have a reduction in self-reported trauma symptoms than those who receive no mindfulness training? We addressed RQ1 using a repeated measures ANOVA, RQ2 with a two-level longitudinal hierarchical linear model and RQ 2.1 with a hierarchical regression, and RQ3 with a two-level longitudinal hierarchical linear model. Participants included 25 counseling students enrolled in a CACREP accredited master's counseling program and 25 of their respective clients (16 of which had enough data to analyze). Counseling students were cluster-randomized at the classroom level to treatment or control, with 17 in the treatment group and eight in the control group. Counseling students filled out mindfulness and trauma assessments at week 1, seven, and 15. They also filled out an assessment to measure therapeutic presence at week 5, 10, and 15. Clients filled out assessments at week 5, 10, and 15.

We explored means and standard deviations of demographic variables and ran a series of *t*-tests to equate groups. One notable finding from preliminary analysis included the observed rate of self-reported trauma history in counseling students. The treatment group had 14 students identify as having a trauma history and one being unsure out of a total of 17. The control group had two students identify having a trauma history and four being unsure out of a total of 8. This equates to 16/25 students who report a trauma history and 5/25 who are unsure for a total of

21/25 students who may have a trauma history. As measured by the GPS, 24/25 indicated a traumatic historical event. When exploring demographics across groups, we discovered that most of the counseling students and their clients identified as White females. We also discovered that counseling students in the control group had statistically significantly more experience with mindfulness prior to the intervention than the control group. They also had higher baseline scores of state mindfulness on the FFMQ and lower active trauma symptoms on the GPS than the treatment group. Finally, counselors of color reported more active trauma symptoms than their White peers, with the highest GPS scores observed in counseling students who identified as African American, followed by Latino.

We then conducted a series of correlations to explore bivariate relationships between primary variables and client covariates. Several statistically significant relationships among covariates emerged, including the relationship between counselor race and client reports of the counselor's therapeutic presence. Clients who had a counselor of color tended to report experiencing lower therapeutic presence than clients who had a White counselor. We also found that White clients tended to report more overall suffering compared to clients of color.

When then explored bivariate relationships between counseling student covariates and primary variables. We discovered that counseling students who reported having a trauma history tended to report lower confidence in clinical skills and have less exposure to mindfulness prior to the study. Additionally, those who had more mindfulness exposure prior to the study reported more confidence in clinical skills and more confidence in forming therapeutic relationships with clients. Counselors with a trauma history also tended to score lower on baseline state mindfulness as seen in pre-test FFMQ scores, whereas counselors with stronger confidence in clinical skills and forming therapeutic relationships scored higher in baseline FFMQ scores.

We then examined data for our primary analyses for research questions 1-3. To answer RQ1, we ran a repeated measures ANOVA to explore changes in client report of counselor therapeutic presence scores by group as measured by the TPI-C. We did not find a statistically significant effect for time, which indicated that clients' perceptions of their counselor's therapeutic presence remained relatively stable between time one and time three. However, there was a statistically significant interaction between time by group. Clients of counselors in the control group reported slightly higher baseline rates of counselor therapeutic presence compared to the treatment group. However, at midpoint, clients seeing counselors in the control group reported a *decrease* in their counselor's therapeutic presence, whereas clients seeing counselors in the treatment group reported a dramatic *increase* in their counselor's therapeutic presence. By posttest, both groups returned to similar baseline scores, which is why there was no significant effect for time. The midpoint TPI-C assessment was done around the time that the counseling students were taking their midterm exams, which could explain some of the discrepancy in scores between the treatment group and control group at midpoint.

To answer RQ2, we ran a two-level longitudinal hierarchical linear model to explore the effects of a mindfulness intervention on counseling student state mindfulness growth over time as measured by the FFMQ. We conducted a step-up modeling strategy and found that Model 1.6 was the best overall fit to the data, explaining 59% of the total variance. The null Model 1.1 demonstrated a statistically significant effect for time and Model 1.2 highlighted a trend in state mindfulness growth over time that showed the treatment group as having slightly better rates of growth from baseline to posttest, though the slope for time in Model 1.2 was not statistically significant. The control group had dramatically higher state mindfulness scores at baseline than the treatment group, which appeared to influence the predicted growth over time in the final

model that ultimately favored the control group. While the control group had higher scores across time, the treatment group showed a larger range of growth from beginning to end compared to control. We also found that counseling student trauma scores on the GPS predicted nearly 45% of the total variance in the final model, suggesting a strong relationship between the variables.

Additionally, we also discovered several trauma demographic variables and clinical skills variables that influenced the predicted growth in state mindfulness. While this was outside the scope of the research question, we were curious about the role of these nominal variables, so we ran a series of one-way ANOVAs. Upon further analysis, we discovered that students who experienced emotional abuse growing up tended to have lower state mindfulness scores that remained relatively low across the duration of the study, whereas students who experienced serious illness, a life-threatening emergency, or the death of a loved one tended to show higher mindfulness scores at baseline. Those who experienced serious injury, or a life-threatening situation trended toward FFMQ growth over time, whereas those who experienced the death of a loved one trended downward relatively dramatically at posttest. Additionally, those that reported a trauma history tended to show slightly less growth in FFMQ scores over time, whereas those who reported a longer duration of traumatic event tended to show more growth over time. Finally, we explored the influence of clinical confidence on FFMQ growth over time. Those who reported average confidence in clinical skills tended to have lower baseline FFMQ scores which grew modestly over time. Those who reported good confidence in clinical skills tended to score high on FFMQ scores at baseline which endured through posttest. Unexpectedly, those who reported excellent confidence in clinical skills had very high baseline FFMQ scores that declined dramatically across the duration of the study.

To answer the second part of RQ2, we ran a hierarchical multiple regression to understand the growth in state mindfulness as it relates to self-reported therapeutic presence. We discovered that treatment group, confidence in clinical skills, prior mindfulness experience, FFMQ mean scores, and GPS mean scores were statistically significant predictors of therapeutic presence. FFMQ scores ($\beta = .50$) explained a large amount of variance in TPI-T, influencing predicted positive growth in the slope, whereas GPS scores ($\beta = .-29$) also explained a substantial amount of variance, influencing predicted negative decline in the slope.

Finally, to answer RQ3, we ran another two-level longitudinal hierarchical linear model to understand the influence of the mindfulness intervention on changes in trauma scores across time. We conducted a step-up modeling strategy and found that Model 1.5 was the best overall fit to the data, explaining 42% of the total variance. Our initial model demonstrated a statistically significant effect for time, suggesting that all students in the study showed decreased trauma scores across the duration of the semester. However, in this analysis, we found no statistically significant differences between treatment and control groups in trauma change. However, the FFMQ was a statistically significant predictor for the intercept and the slope for time in the final model and on its own explained nearly 35% of the total variance in the model.

Overall, we can conclude that counseling students in our study who completed the mindfulness intervention had clients report an increase in perceived therapeutic presence at the midpoint of treatment, which coincided with a high-stress time for the counseling students. Additionally, we can conclude that counseling students who participated in the mindfulness intervention showed a greater increase in state mindfulness development as measured by mean score change across time, whereas the control group tended to plateau between time two and time three. However, the treatment group ultimately scored lower at baseline and posttest than

the control group, likely related to the group differences found in preliminary analyses. Finally, we can conclude that students who received the mindfulness intervention and students who were in the control group all experienced a reduction in trauma scores across the duration of the semester, though whether students were in the intervention or the control group did not appear to influence these differences.

CHAPTER 5

DISCUSSION

In this chapter, we discuss the findings of the results from our three analyses. The purpose of the study is to explore the effects of a cluster-randomized 15-week mindfulness intervention on clients' perceptions of their counselors therapeutic presence, counseling student mindfulness, and counseling student trauma. We also compare our results to similar findings in the literature and offer implications for counseling, counselor education, and future research. Finally, we outline the limitations of this study and discuss how future research might improve upon this work.

Discussion of Primary Findings

In the following section, we provide an overview and explanation of the primary findings for our three research questions and compare the findings to previous research.

Findings from RQ1

To answer our first research question on clients' perceptions of counselors' therapeutic presence, we intended to run a three-level longitudinal hierarchical linear model, but the HLM produced a singularity likely due to low sample size and a degree of missing data. This resulted in the HLM SSI software not being able to complete the analysis. We decided to run a repeated measures ANOVA to analyze the data, which limited our ability to explore deeper nuances of time nested within client nested within counselor. We did not find a statistically significant effect for time, suggesting that clients tended to rate their counselor's therapeutic presence relatively consistently between pretest and posttest. Unexpectedly, we did find a statistically significant interaction between time by group. Clients who worked with counselors in the control group tended to report more baseline therapeutic presence compared to clients in the treatment group.

However, at midpoint assessment, clients who worked with counselors in the control group reported a dramatic *decrease* in their counselor's therapeutic presence, whereas clients who saw counselors in the treatment group reported a dramatic *increase* in their counselor's therapeutic presence. We tried to understand what would cause such a discrepancy in midpoint results and then realized that we conducted midpoint assessment during the time of the semester when the counseling students were taking their midterm examinations, which is typically a time of increased anxiety and stress. It is possible that the mindfulness intervention had an effect on the way that the counseling students experienced stress, perhaps through the development of positive coping skills. It may be that those in the treatment group could better compartmentalize their anxiety while working with clients, or they improved their ability to practice strategies to reduce distraction or increase focus and presence during a time of stress.

The results of RQ1 in the present study compared to other studies are mixed. For example, Schomaker and Ricard (2015) explored the effects of a mindfulness intervention on counselor-client attunement and found that the treatment group had statistically significantly higher client ratings of attunement than the control group, despite the treatment group having dramatically less counseling experience compared to control. This aligns with the results of this study, which favored the control group in terms of prior mindfulness experience, higher FFMQ scores, and lower trauma scores at baseline, yet the treatment group demonstrated greater rates of improvement on the FFMQ and the TPI-C, including improved client-rated therapeutic presence during a time of stress compared to control. Additionally, Swift and colleagues (2017) conducted a brief five-week randomized crossover study to explore the role of a manualized mindfulness training program on psychotherapy trainees self-reported therapeutic presence and client outcomes. In their study, they provided a 30-minute manualized mindfulness intervention once

per week for five weeks to the treatment group and compared it to a no-treatment control. They found that the trainee psychotherapists in the treatment group self-reported greater therapeutic presence compared to control, but they did not find any differences in client outcomes between either treatment condition. Similarly, Avera (2017) conducted a related study on counselors in training in a CACREP program to explore the role of counselor mindfulness on therapeutic bond, task alignment, goal alignment, and client outcomes. He utilized a five-minute manualized mindfulness intervention once per week for the duration of a semester (about 15-weeks). Similar to Swift and colleagues (2017), Avera did not find group differences in client-reported outcomes, though he did find some improvement in self-reported therapeutic bond.

An interesting difference between these two studies is that Avera (2017) included a longer duration of sessions (15 weeks) compared to Swift and colleagues (five weeks), but the intensity of the Avera study (five-minutes) was low whereas the intensity of the Swift and colleagues (2017) study was moderate (30-minutes). It is likely that a five-week intervention at 30-minute weekly sessions or a 15-week intervention at five minute weekly sessions may not be an adequate combination of frequency, intensity, and duration that may be necessary for the deeper qualities of mindfulness to develop (e.g., Eberth et al., 2019). Eberth and colleagues conducted a meta-analyses of mindfulness interventions and found that the deeper qualities of mindfulness that necessitated greater outwardly observable change required the development of both insight and equanimity. They found that these qualities only developed when the mindfulness interventions had greater intensity, frequency, *and* duration, as opposed to a mix and match of one or more. Therefore, while both the Avera (2017) and Swift and colleagues (2017) studies found improvements in counselor self-reported mindfulness and therapeutic presence, these changes did not translate to strongly observable client-report.

In contrast, similar studies exist that parallel some of the results of the present study, but from different mental health specialties and different client populations. For example, Grepmair and colleagues (2007) conducted a randomized controlled trial to explore the effects of a daily Zen meditation training program on psychotherapists in training and its influence on therapeutic relationships and client outcomes at an inpatient facility in Germany. Grepmair and colleagues required their therapists in training to meditate for one hour daily prior to seeing clients and their results indicated that clients who saw therapists in the meditation group reported statistically significant differences in their evaluation of their therapist, improved clarification and problem-solving perspectives, and a reduction in scores on a symptom severity outcome assessment that measured somatization, insecurity, obsessiveness, anxiety, anger, phobias, paranoia, and psychosis. It is possible that the increased intensity of meditation (one hour daily), and the timeliness of it (e.g., directly before seeing clients) influenced some of these outcomes. It is also possible that differences in symptom severity and treatment setting influenced results. There may be more at stake for inpatient clients to report positive outcomes, particularly if they are hospitalized against their consent and hoping to demonstrate enough improvement to necessitate discharge.

One of the only other known studies to similarly explore the links between therapist mindfulness and client reports of therapeutic presence, working alliance, or symptom change is the work by Ryan and colleagues (2012), who explored dispositional (trait) mindfulness in psychiatry interns at an inpatient center and its role in the working alliance and client outcomes. While they did not provide a mindfulness intervention to their trainees, they did explore differences between two treatment conditions (brief relational therapy and CBT) and found that therapist dispositional mindfulness was positively correlated with the working alliance. They

also found that the acting with awareness and accepting without judgement subscales on the FFMQ were positively correlated with overall client symptom change. However, given the inpatient nature of the study, it is possible that similar influences like those possible in the Grepmair study contributed to positive outcomes.

Finally, Baker (2015) conducted qualitative research on mindfulness meditation training as a precursor to psychology trainees developing qualities for relational depth through therapeutic presence. They found that mindfulness appeared to facilitate a "being versus doing" quality related to therapeutic presence and relational depth, which may improve feelings of authenticity in the role of counselor that may also be translated to the client's sense of safety in the relationship. These results support the utility of mindfulness training for therapeutic presence, which may improve therapeutic relationships and translate to better client outcomes.

Findings from RQ2

For our second research question, we explored the effects of a 15-week mindfulness training program on counselor mindfulness development. For this study, we had enough data to run a two-level longitudinal hierarchical linear model. After a step-up model building strategy, we found a model fit that explained 59% of the total variance. In the initial unconditional model, we found a statistically significant effect for time, suggesting that counselors in both groups improved in mindfulness development across the duration of the semester. These results support both the utility of mindfulness training for those who initially have lower state mindfulness as well as the positive effects of clinical training on state mindfulness development.

Additionally, in Model 1.2 we explored the role of the intervention on counselor mindfulness outcomes. In this model, we found that the treatment group tended to increase in state mindfulness by five and a half points at each measurement time, while the control group

increased by about four points at each measurement time. However, these differences were not statistically significant. Additionally, the treatment group began the intervention with dramatically less mindfulness experience, higher rates of trauma history, higher trauma scores on the GPS, and lower scores on the FFMQ compared to control, which influenced both where their state mindfulness started at baseline and its rate of growth over time. Because of this, the treatment group ended the study with lower scores on the FFMQ compared to control, but their growth from baseline to endpoint indicated a wider range of change. Counseling students in the control group tended to plateau between time two and time three, which may indicate some ceiling effects in the state mindfulness measure. However, for students with little to no prior mindfulness experience and lower baseline state mindfulness scores, incorporating a mindfulness intervention into their clinical training seemed to help them improve in state mindfulness relatively dramatically from pretest to posttest. It would have been interesting to see whether they experienced this same growth solely as a function of taking their practicum class without the intervention, given the discrepancy in scores between groups prior to the study. It may be possible that students in the control group who had higher prior mindfulness experience and higher FFMQ scores at baseline could rely on those qualities to further develop presence and self-awareness qualities from the content of their practicum class, which may have assisted in their positive state mindfulness growth over the duration of the study. We cannot know whether this same rate of growth would have occurred in the treatment group solely through the content of their practicum course. While we cannot definitively conclude that the mindfulness intervention was responsible for changes between groups, the increased range and rate of growth in the treatment group compared to control is promising, particularly given that the treatment group reported greater rates of trauma history, higher trauma scores, and lower mindfulness

experience and state mindfulness scores at baseline. These results may support the incorporation of mindfulness training in counselor education to help integrate important aspects of course content that build self-awareness and qualities of presence.

We also found an interesting interaction between GPS trauma scores and the slope for time in FFMQ mindfulness scores. GPS trauma scores explained nearly 45% of the variance in FFMQ scores alone. Students who had higher trauma scores on the GPS primarily made up the treatment group, and they were predicted in the final model to show less mindfulness growth over time compared to the control group. Inversely, students who had lower trauma scores on the GPS tended to make up a majority of the control group, who were predicted to show more mindfulness growth over time compared to the treatment group. These results may be suggestive of an inverse relationship between active trauma symptoms and state mindfulness. While we cannot definitively explain the directionality of this relationship, it may be that those with higher state mindfulness have better coping strategies to better manage the effects of traumatic experiences and associated symptomology. However, it may also be that higher trauma symptomology is painful and psychologically distracting, which impairs facets of state mindfulness.

We also found several interesting demographic variables that appeared to influence the slope for time in the final FFMQ model. For example, students who experienced emotional abuse tended to score lower in mindfulness across the duration of the study, whereas students who experienced serious illness or a life-threatening experience, tended to score higher in mindfulness across the study. Those who reported death of a loved one had the highest baseline mindfulness scores but dropped dramatically across time. We also found that those who experienced a more recent trauma (e.g., within the past 1-6 months), reported the lowest

mindfulness scores compared to those who experienced their trauma more than six months ago, suggesting heightened risk factors that reduce state mindfulness. The increase in FFMQ slope for time with the incorporation of various trauma demographic variables may highlight various risk and resiliency factors, which are worthy of future exploration.

The influence of resiliency or risk across types of trauma is interesting and supports findings on the insidious effects of emotional abuse on mental health and interpersonal functioning. Researchers consistently find that emotional abuse produces some of the most distressing negative consequences compared to other forms of trauma such as physical and sexual abuse because it negatively impacts the view of self, including self-efficacy, self-trust, and self-determination (Spinazzola et al., 2014). This supports our findings that counseling students who experienced emotional abuse reported greater GPS symptomology and poorer state mindfulness across the duration of the intervention. In contract, we found that students who experienced great losses reported higher baseline state mindfulness and tended to grow steadily across the duration of the study. Perhaps being forced to deal with the existential issues of loss may contribute to posttraumatic growth and resiliency. Other trauma demographic variables influenced the FFMQ slope over time. We discovered that students who experienced a longer duration of trauma compared to a single incident showed greater FFMQ score improvement. It is possible that the enduring nature of the trauma forces the development of resiliency or coping strategies to survive the ongoing nature of the event.

Finally, we found that level of confidence in clinical skills influenced FFMQ growth over time. Those who reported average clinical skills tended to have lower baseline FFMQ scores that grew modestly over time, whereas those who reported good clinical skills had higher mindfulness at baseline and posttest. Finally, those who reported excellent clinical skills at

baseline also reported the highest baseline state mindfulness, but their scores trended downward dramatically over the duration of the study. This may suggest links between overconfidence in clinical ability and reduced ability to accurately self-assess, which could be linked to poorer self-awareness at the beginning of the intervention that became more realistic as the study continued, suggesting that greater state mindfulness may be related to more accurate self-assessment of abilities. This may suggest the importance of mindfulness training in counselor education to temper hubris and improve self-reflection and self-evaluation strategies.

In the second part of RQ2, we also sought to understand how mindfulness training influenced counseling students' self-reported therapeutic presence. We ran a hierarchical multiple regression to understand what variables predicted counselor therapeutic presence and found treatment group, trauma history, confidence in clinical skills, GPS trauma scores, and FFMQ scores to be statistically significant predictors of FFMQ growth over time. FFMQ scores explained a sizable portion of the variance, which suggest links between increased state mindfulness and increased therapeutic presence. Additionally, GPS scores also explained a good amount of variance in the model and supported the inverse relationship between active trauma scores and state mindfulness. GPS scores had a negative weight on the slope for therapeutic presence, suggesting that more active trauma symptoms equated to a reduction in therapeutic presence. Prior mindfulness experience also influenced the slope for therapeutic presence (β =.28), further supporting the links between therapeutic presence and mindfulness development.

Our findings in RQ2 support the large body of research that exists on the role of mindfulness training for counselors and counseling students in building facets of mindfulness and associated characteristics. Researchers demonstrate the utility of mindfulness training for developing a wide array of characteristics of effective counselors, including improved

socioemotional competence (Alahari, 2017), clinical skills development (Buser et al., 2012), managing personal distress (Butts & Gutierrez, 2018), and improving counselor self-efficacy (Campbell & Christopher, 2012). Others demonstrate the utility of mindfulness training for improving counseling students' professional identity development (Dong et al., 2018), self-care strategies (Friedman, 2017), compassion/empathy (Fulton & Cashwell, 2015), and multicultural competence (Martinez & Dong, 2020). Still others provide supervision strategies for fostering state mindfulness in supervisees and found that mindfulness practices improved mindful awareness during sessions with their clients (Johnson et al., 2020)

Our findings also support the research for mindfulness training and improved therapeutic presence. Firstly, therapeutic presence as an operationalized concept in clinical work may be credited to Geller and colleagues (2010), who developed the therapeutic presence inventory for therapists and clients to better understand what improves these qualities and what hinders them. McCollum and Gehart (2010) also developed mindfulness curriculum to teach counselors in training about therapeutic presence and found it to be a useful addition to clinical training, though they did not go so far as to explore client reports to corroborate self-report and control for social desirability bias. Additionally, Swift and colleagues (2017) conducted a randomized crossover study and found that a mindfulness intervention for counselors in training demonstrated statistically significant differences in self-reported therapeutic presence for those in the treatment group. These results are suggestive of the important role of mindfulness education and training in building qualities of effective counselors and improving therapeutic presence and effective working alliances.

Findings from RQ3

For our third research question, we explored the effects of a 15-week mindfulness

intervention on counseling student trauma symptoms. We ran a two-level hierarchical linear model to explore the results. We conducted a step-up modeling strategy and found a statistically significant effect for time in our null model, which suggested that all students regardless of treatment group showed a decrease in active trauma symptoms over the duration of the study. We did not find any statistically significant effects for group in Model 1.2. These results may indicate the benefits of clinical training on trauma symptom management. Interestingly, our control group reported statistically significantly higher baseline mindfulness and lower baseline trauma symptoms compared to our treatment group, which may have influenced these results. It is possible that the mindfulness intervention still had an effect on counseling student trauma symptom reduction, but these results were not measurable due to the imbalance in baseline scores between groups and the differences in dispositional mindfulness between treatment and control. Regardless, these results bode well for the benefits of clinical training and the strategies utilized by counselor educators in practicum courses to help students develop adaptive coping strategies. In our final Model 1.5, we found a statistically significant effect for state mindfulness on GPS score change over time. The FFMQ predicted nearly 35% of the total variance in the model, which further supported the results of RQ2, which suggests an inverse relationship between trauma symptoms and state mindfulness.

Despite the non-significant results in the interaction of time by group, the benefits of mindfulness for reducing trauma symptoms are well established in the literature. Researchers exploring the effects of mindfulness training on PTSD symptoms found that an eight-week MBSR training reduced PTSD and emotional dysregulation symptoms for the treatment group but not the control group (Gallegos et al., 2020). Others explored the utility of mindfulness to reduce burnout and vicarious traumatization in human service professionals and found that

higher mindfulness was a significant predictor of lower distress and burnout (Harker et al., 2016). Additionally, Kachadourian and colleagues (2021) explored the mediation effects of mindfulness on trauma exposure and mental health outcomes for veterans and found that mindfulness partially mediated the relationship between lifetime trauma and PTSD symptoms. Finally, the body of work related to interpersonal neurobiology consistently stresses the inverse relationship between trauma and therapeutic presence, suggesting the value of assisting counseling students with managing trauma to improve their ability to forge strong therapeutic alliances and facilitate co-regulation through therapeutic presence (Schore, 2021; Siegel, 2010).

Despite the abundant research linking mindfulness to trauma reduction, to date, almost no research explores how trauma affects counselors outside of the scope of vicarious traumatization and burnout (e.g., Laneir & Carney, 2019). Additionally, almost no research directly explores the effects of active trauma on counselors, their client outcomes, or the potential benefits of embedding mindfulness training into counselor education to improve client outcomes. Given the observed trends in counseling student historical trauma observed via GPS scores in the present study (24/25 students), which mirror rates of trauma found in graduate students in the helping professions by Black and colleagues (1993), it may be an underexplored area. Black and colleagues found that upwards of 50% of graduate students in the helping professions have a significant trauma history that may benefit from being addressed in clinical training to help graduate students in helping professions develop resiliency, reduce vicarious trauma risk, and accurately self-reflect when they are approaching burnout or at risk of impaired practice. The results of the present study may have similar implications while aligning with the research on interpersonal neurobiology. Siegel (2010) and others continue to stress the importance of

counselor mindfulness both for managing trauma responses that impair therapeutic presence and for facilitating co-regulation with clients that is vital to healing attachment wounds.

Discussion of Secondary Findings

Beyond the findings from our three primary analyses, there are also several interesting secondary findings. Most strikingly is perhaps the correlation between counselor race and client report of counselor therapeutic presence. We found a statistically significant relationship between counselor race and client TPI-C scores. Further analysis of the nominal data indicated that clients who attended therapy with White counseling students reported experiencing more therapeutic presence than clients who attended therapy with a counseling student of color. This may be indicative of racial bias on the part of the client, or it could be related to cultural differences. A majority of the clients were also White, and White clients tended to rate White counseling students as the most therapeutically present. The most discrepancy appeared to be when the counselor was Asian and the client was Latino, which could be related to cultural practices such as interpersonal warmth or expectations of engaging in more self-disclosure before beginning counseling.

We also found statistically significant relationships between race and trauma symptoms. Counseling students of color reported statistically significantly more trauma symptoms compared to their White peers. These results suggest the negative implications of racial trauma on interpersonal functioning, and the increased vulnerability of counseling students of color. Researchers consistently demonstrate the increased risks of dropout, microaggressions, and additional traumatization for graduate students of color (Pierre-Canel, 2022), meaning better understanding of the increased risks to marginalized counseling students is necessary.

Finally, we found statistically significant relationships between counseling students who had a trauma history and their overall confidence in clinical skills and confidence in building therapeutic relationships. Having a trauma history was consistently linked to lower confidence in clinical skills and building therapeutic relationships, which has implications for self-efficacy, professional development, longevity in a challenging career, effective practice, and risks of burnout. Additionally, having a trauma history was also linked to lower baseline scores on the FFMQ, meaning they had lower reports of state mindfulness prior to the study compared to counseling students who were unsure about their trauma history or reported no trauma history. These same students who reported having a trauma history also reported less exposure or experience with mindfulness prior to the study than those who did not have a trauma history. These results also support the inverse relationships between state mindfulness and active trauma symptoms.

Implications for Counselor Educators and Supervisors

Implications of RQ1

We found that clients of counselors in the treatment group reported more therapeutic presence from clients during heightened times of counseling student stress, whereas clients of counselors in the control group reported reduced therapeutic presence during heightened times of stress. The implications of these results suggest that mindfulness has an important role in buffering some of the negative effects of stress on clinical practice, such as distraction, compassion fatigue, or reduced cognitive complexity. It also suggests that it assists with building skills to improve presence and maintain co-regulation with clients even when external circumstances may make that more challenging. Counselor educators and supervisors may support these positive effects by infusing mindfulness training into pedagogical models to help

reduce the effects of counselor stress on clients' perceptions of their counselors' presence and attunement and build strategies to maintain and improve upon qualities of mindfulness that help maintain presence and attunement even during times of stress.

Implications of RQ2

In our analysis of RQ2 data, we found greater mindfulness improvement across time for counseling students in the treatment group compared to the control, though the study was underpowered so the interaction was not statistically significant. However, given the dramatic discrepancy in baseline scores between groups, a larger rate and range of growth in the treatment group may suggest clinical and practical significance. Infusing mindfulness into counselor education with students with increased risk factors such as low baseline state mindfulness, greater rates of trauma history, and higher active trauma symptoms may contribute to a rapid increase in state mindfulness across the duration of the semester that may help students improve their grasp of practicum learning material that builds on skills also learned through mindfulness training such as self-awareness and presence.

Additionally, the results of this analysis also support the utility of smartphone-based mindfulness applications like Healthy Minds as an adjunct to counselor education. Healthy minds is an evidenced-based, free to use, widely accessible, and easy to administer mindfulness training strategy that avoids many of the pitfalls of other forms of mindfulness training that may require the counselor educator to have extensive prior experience with meditation, adequate training in mindfulness-based interventions, or access to expensive alternative applications. Healthy Minds also allows counselor educators to manualize mindfulness training in a way that can be consistent across environments, which may support its utility in infusing mindfulness education into additional courses in counselor education beyond practicum. The utility of

Healthy Minds as a mindfulness instrument in education is established in the literature. Goldberg and colleagues (2021) conducted an RCT for mindfulness training in college students to reduce anxiety and improve awareness and found statistically significant results for the treatment group. However, they also cautioned to the risk of attrition, as students reported finding mindfulness training under-stimulating and struggled to practice outside of direct intervention. This has implications for the ways in which counselor educators provide background knowledge into the benefits of mindfulness, such as through theoretical training in interpersonal neurobiology that links counselor presence with therapeutic outcomes. Better awareness of the long-term potential benefits of mindfulness may improve motivation to practice, which may assist with improving the frequency, intensity, and duration required to reap the benefits of transformation seen through insight and equanimity (Eberth et al., 2019).

Additionally, to date there is no known research on the utility of Healthy Minds specifically for training counseling students in mindfulness. Despite the potential of Healthy Minds as an adjunct to counselor education, educators should still be cautious to understand the depth and breadth of mindfulness, both in terms of training and outcomes. Kabat-Zinn (2003) and Avera (2017) caution that mindfulness must be practiced within the appropriate context and should not be viewed as a skill or intervention to be peppered into either clinical treatment or pedagogical models, but instead it should be infused within a larger framework. This is where more theoretical training in interpersonal neurobiology may be warranted. It may also be important to integrate mindfulness training into all courses beyond practicum as part of comprehensive education on contemplative science as a theoretical model to address human suffering. This has implications for both counselor education and clinical practice.

Finally, the results of the present study highlight important links between mindfulness and trauma as evidenced through the inverse relationship between GPS and FFMQ scores. Given the links between mindfulness and characteristics of effective counselors, it is important for counselor educators and supervisors to understand how trauma may act as a barrier to state and trait mindfulness and how this may impact self-awareness, therapeutic presence, and potential client outcomes.

Implications of RQ3

Finally, the results of RQ3 have important implications for trauma-informed counselor education. We discovered that 16/25 of the counseling students in our study reported a trauma history and 5/25 were unsure, leaving 21/25 counseling students who potentially had a history of trauma. Additionally, 24/25 students indicated some form of trauma history on the GPS. The results of the present study parallel the results of Black and colleagues (1993) who found that upwards of 50% of graduate students in the helping professions have a trauma history. The implications of the rates of trauma in counseling students in the present study are dramatic and put the dearth of research on this topic into striking fluorescence. Given the rates of burnout and abundant risk of vicarious traumatization for professional counselors (e.g., Lanier & Carney, 2019), it is imperative that counselor educators and supervisors better screen counseling students for trauma and PTSD not just as a vicarious consequence to client work but as a consequence of their lived experiences. With the current state of the world, including increased political unrest, climate threats, racial disparity, homophobic and transphobic political rhetoric, the fallout of the COVID-19 pandemic, increased cost of living, and wage inequality, it should be assumed that young people entering graduate school are entering with the entirety of their ecological system, which includes the effects of the environments in which they live. For many, these environments

have contributed to rates of trauma that, if not adequately addressed, may impair their ability to manage stress in their graduate programs. Improperly managed stress may translate to poorer skill development, problems with interpersonal boundaries with colleagues, peers, or professors, and could also translate to greater difficulty with therapeutic presence and boundaries with clients, which may have a negative effect on client treatment. Ultimately, counseling students have a responsibility to their own wellness so that they may work ethically to support the wellness of their clients. Subsequently, counselor educators and supervisors have a responsibility to cultivate wellness in their counseling students as an aspect of comprehensive training. This responsibility requires counselor educators and supervisors to recognize trauma-related impairment in their students and supervisees and to have strategies to help them manage and overcome this impairment as an aspect of comprehensive training – both through pedagogical initiatives and perhaps through greater rates of required personal counseling. Addressing counseling student trauma and cultivating wellness allows students to use their lived experiences as a way to deepen their understanding of suffering and pathways out of suffering, which may deepen relational depth and help students work more ethically and effectively with clients while reducing the risk of using clients as a pathway to their own healing.

Counselor educators and supervisors may better serve their students by building awareness to the scope of trauma in the counseling student population and developing trauma-informed pedagogical models that mitigate risks to students and their clients. They may also assist students by requiring more personal counseling from highly trained professionals as part of program requirements. Additionally, counselor educators should be aware of the differences in which active trauma symptoms may show up in high-functioning graduate students versus the treatment seeking client population and how to engage in pedagogical approaches that do not

retrigger an over-activated nervous system. These implications may be even more dramatic for counseling students of color, who consistently demonstrate additional risk factors such as racial trauma and battle fatigue. Therefore, improving trauma awareness in counselor education requires greater awareness of social justice issues, marginalization, oppression, racial and class disparity, barriers to success, and multicultural humility.

Additional ways to reduce counseling student trauma symptoms and improve wellness may be evident through the results from analysis of RQ3, which demonstrated an inverse relationship between state mindfulness and active trauma symptoms. This suggests that mindfulness training may provide adaptive coping strategies for people with trauma and could also be a potential resiliency builder. While we did not find a statistically significant interaction for time by group for trauma symptoms, we found that all students experienced a decrease in their active trauma symptoms across the duration of the semester. This also suggests that counselor educators may be providing positive learning materials during clinical practicum that address some of these trauma factors, and finding strategies to continue to support and improve upon this process may further improve outcomes.

Implications for Future Research

This study has important implications for future research. Primarily, it is important for future researchers to more deeply explore the links between counselor mindfulness and client outcomes by using client outcome ratings to measure symptom changes. It is also imperative to garner an adequate sample size to run a three-level longitudinal hierarchical linear model to better explore nested effects of client change over time within counselor. This may provide a more nuanced understanding of the casual relationships between counselor mindfulness and client outcomes which better accounts for individual strengths and areas for growth.

Additionally, given that similar studies incorporated different approaches to frequency, intensity, and duration of mindfulness training, it may be important for future researchers to explore what has demonstrated efficacy and what has not proven effective in facilitating improved therapeutic presence and client outcomes. For example, Grepmair and colleagues (2007) required their therapist interns to practice Zen meditation for one hour daily directly before seeing clients in an inpatient facility, and they found statistically significant differences in client reports of the working relationship and symptom outcomes in the meditation group. Their study had strong frequency, intensity, and duration. In contrast, Swift and colleagues (2017) had moderate intensity and a short duration, whereas Avera (2017) had a short intensity and a moderate duration and neither found differences in client outcomes between groups. It may be that future researchers will benefit from finding strategies to increase frequency, duration, *and* intensity to reap the deeper benefits of meditation as suggested by Eberth and colleagues (2019).

Despite the clear benefit of increasing frequency, intensity, and duration of practice, this involves several barriers to practicality and feasibility of research. For example, it is established that many of the deeper qualities of mindfulness are developed through regular and sustained practice, which requires a large degree of commitment and intentionality from study participants and a longer duration of time in which to run an intervention. This poses several barriers to research in counselor education, including increased resources required to run a long-term study and the feasibility of access to the same students beyond the 16-week semester course. Therefore, it may be necessary to embed mindfulness education into all courses across the duration of a 2–3-year graduate program to help students get the most benefit from the training and have the opportunity to develop skills at a more manageable pace.

Other significant barriers include the already strained availability of time and mental resources in graduate students who may be unlikely to commit to such an intensive meditation protocol and the rates of burnout in academics. Increasing frequency, duration, and intensity may require participants to take up a regular practice outside of the study timeframe, which prior researchers demonstrated typically does not work and risks significant attrition that impairs outcome results (Goldberg et al., 2021). This may require researchers to find ways to increase interest in mindfulness or improve tolerance to under stimulation. One possible option is the inclusion of virtual reality devices that provide mindfulness training, such as Tripp. Tripp is a virtual reality meditation program that provides incredibly visually stimulating imagery that can be adjusted to the user's preference while also providing guided audio meditation to improve focus, reduce anxiety, or build self-awareness and presence. While not aimed at building specific mindfulness strategies in the same was as Healthy Minds, it may increase willingness to engage in the process and reduce attrition by increasing interest through greater stimulation. One downside to Tripp is that it requires the use of a virtual reality headset that presents significant financial barriers not incurred with the free Healthy Minds smartphone application, but possible options for grant funding may be explored as a way to utilize technological advances to reduce attrition in mindfulness education through increased stimulation.

Future researchers should also explore the benefits of mindfulness training on developing therapeutic presence as it pertains to the links between co-regulation and client outcomes. If the tenets of interpersonal neurobiology are true, then more mindful counselors may demonstrate more sustained therapeutic presence, which may translate to more sensitivity to subtle shifts in client experience and translate to better client attunement. It may also mean that more mindful counselors are more aware of their own needs and internal states, including awareness of when

their attention wanders, when their presence wanes, or when they are experiencing compassion fatigue and in need of self-care.

Additionally, researchers should further explore the utility of smartphone or virtual reality-based mindfulness applications to streamline mindfulness training in counselor education. The present research is the first known study to utilize the Healthy Minds application to train counseling students in mindfulness skills. The benefits of this application include reduced need for counselor educators to have an extensive meditation background, reduced reliance on knowledge of specific evidence-based manualized mindfulness training protocol, and increased access and availability. The program is free to use and accessible to anyone who has a smartphone capable of downloading applications. While the benefits of mindfulness education in counselor education are well established, accurate incorporation of strategies are vital. This is particularly important if mindfulness education is to be embedded into all classes throughout a graduate program to increase the duration of exposure to the material. Using the same program across different courses also provides consistency to training, particularly when there may be varying experience with mindfulness between instructors. It may also allow for long-term research on mindfulness development in counseling students across the duration of an entire master's program, with interesting follow-up at ten years into the profession to explore rates of burnout compared to the typical counselor population.

Finally, the results of the present study indicate that much more research on counseling student trauma is necessary. If counseling student trauma is not addressed, then these students go on to become professional counselors with unaddressed trauma, which may impair the ability to carry out the demands of the profession, put them at risk of vicarious traumatization, potentiate client harm, or risk professional burnout. The potential implications for trauma and burnout or

client harm makes addressing this an ethical issue for counselor educators and supervisors. Thus, researchers should further explore rates of counseling student trauma symptoms across a wider range of environments and improve trauma screening to develop trauma-informed pedagogical models. They should also work across disciplines and with wider university support resources to recognize these issues and help their students connect to resources and better understand the impact of unresolved trauma on professional functioning and clinical work. Wider research on rates of trauma in the counseling student population may also be warranted, perhaps through correlational research through the CACREP database. Greater understanding of counseling student trauma history and symptoms and better strategies to promote student wellness will further assist counseling student personal and professional development, which may potentiate posttraumatic growth and resiliency development, which likely translates to better sustainability in a highly demanding career.

Limitations of the Study

Despite the evidence to suggest myriad benefits of integrating mindfulness training into a master's counseling program, there are several limitations to this study. Firstly, the cluster-randomized controlled design limits several benefits of a randomized design at the individual level, such as control over equating groups and extraneous variables (Hayes & Moulton, 2009). The cluster-randomized design also did not account for varying levels of counseling student development prior to entering this program, which affected baseline results and likely influenced many of our outcomes. Additionally, using master's practicum students came with several risks. These students worked with clients who were the first of their professional lives and thus had the lowest level of skill of their career. Lack of experience and anxiety may translate to reduced

performance with clients that may not be representative of typical counselor-client relationships, meaning interpreting these results should be done with caution.

It is also worth mentioning the protected nature of the environment in which the study took place and the typical demographic of the clients. Counseling students in this study worked with clients who were strategically filtered for severe symptomology within a clinic that is embedded into the university. Many of the clients were master's counseling students in the early portion of their program and were required to receive counseling as part of course credit, which could have influenced how clients rated therapeutic presence. We also risked several dual relationships in a moderately sized program embedded into a small physical environment. Students across groups may know each other and may have discussed what they were learning with those in the control group or provided them with the mindfulness resources despite being guided not to do this in the initial meeting, which could have influenced between-group differences. Counseling students may also have discussed the study with their clients, which could risk clients overreporting therapeutic presence due to the desire to please their counselor.

For practical reasons, we randomized students by course and conducted recruitment during their class time. Despite seeking informed consent from each participant before commencing the study, the integration of this intervention into the class may have created a sense of obligation to participate, which might have negatively impacted the results. Finally, the subjective nature of mindfulness research makes it impossible to objectively know if participants are meditating during the intervention or simply sitting in silence, so relying on self-report is one of the only options. While we did try to control for this by adding a client rating of therapeutic presence, clients tend to like their counselors and want to please them, which can often influence results of this nature.

Other practical limitations include the low sample size, and a large degree of missing data at the client level, causing several of our analyses to be significantly underpowered. This affected the ability to derive statistical significance for time by group in some analyses, though we did find important clinical and practical significance when statistical significance was lacking. It also prevented us from running a three-level hierarchical linear model and forced us to resort to a repeated measures ANOVA to answer RQ1. The low sample size and range, degree of missing data, and the limitations in analysis mean that results should be interpreted with caution.

Other issues in this study limit the generalizability of the data. For example, we had a relatively homogenous sample of counselors and clients. Most of the participants in our sample identified as White and all were from a single training program within an embedded clinic. There may be features related to this environment that are not well understood and subsequently not controlled for in the analysis.

The links between mindfulness and trauma should also be interpreted with caution. Given that our sample included masters counseling students, the relationship between trauma and mindfulness may not generalize to the wider population. This may also be the case for some of the resiliency factors seen in trauma demographic variables. Those who go on to train as counselors may have additional factors that help them develop resilience to traumatic experiences that may not be seen in the general population, meaning more is needed to understand the links between counseling students, trauma presentation, and treatment.

Conclusion

The purpose of this study was to explore the effects of a 15-week mindfulness intervention for counseling students to understand how their clients rate their therapeutic presence. Additionally, we sought to explore the benefits of the mindfulness intervention in

improving state mindfulness of counseling students and in reducing counseling student symptoms of trauma. Participants in this study included 25 counseling students enrolled in a CACREP accredited counseling program at a large public university in the southwestern United States and 25 of their clients. We used a cluster-randomized controlled design at the classroom level to place counseling students in the treatment or the control group. At week 1, counseling students filled out the Five Facet Mindfulness Questionnaire (Baer et al., 2008), the Global Psychotrauma Screen (Schnyder et al., 2017), and a demographic questionnaire. They repeated the FFMQ and the GPS at week 7 and week 15. They also filled out the Therapeutic Presence Inventory – therapist Version (Geller et al., 2010) after their first week of seeing clients (week 5), and again at week 10 and week 15. Finally, the clients filled out the Therapeutic Presence Inventory – Client Version (Geller et al., 2010) at their first counseling session (week 5) and again at week 10 and week 15.

The primary researcher provided a 20-minute mindfulness instruction audio recording from the Healthy Minds application awareness section at the beginning of each weekly practicum class in the treatment groups from week 2 to week 15. The mean session attendance was 14 and the mode was 14. The amount of therapy sessions attended by clients was tracked and the mean number of sessions was six.

We used a combination of repeated measures ANOVA and longitudinal hierarchical linear modeling to answer our three research questions. For our first research question, we found that clients with counselors in the mindfulness group reported an increase in therapeutic presence at the midpoint of their therapy whereas clients with counselors in the control group reported a decrease in therapeutic presence at the midpoint of their therapy. This midpoint aligned with counseling student midterm exams, which has important implications for the utility of

mindfulness training in counselor education regarding stress management and reduced distraction.

For RQ2, we found that treatment group, trauma demographic variables, confidence in clinical skills, and GPS trauma scores explained the overall variance, with GPS scores explaining a majority of the variance between groups. We found that all students in both groups experienced an improvement in state mindfulness across the study and that students in the treatment group improved on average five points at each timepoint (e.g., about seven weeks) and students in the control group improved on average four points at each timepoint. We also discovered several potential facets of resiliency, such as differences in type of trauma experienced, and duration of traumatic event affecting differences in baseline and growth in state mindfulness scores.

Finally, we found no statistically significant differences between groups for trauma symptoms change, but we did find a statistically significant effect for time, suggesting that all students experienced a reduction in trauma-related suffering from the beginning to end of treatment. We also found that over 80% of our counseling student sample had an actual or probable personal trauma history, which supports the very limited but impactful prior research on rates of trauma in graduate students in the helping professions (e.g., Black et al., 1993).

The overall findings of our study have important implications for counselor education, supervision, and future research, including how mindfulness may play a role in improving client reports of therapeutic presence, and the inverse relationship demonstrated between state mindfulness and trauma scores. It may be important to improve mindfulness training in counselor education to develop strong and resilient counselors who are adept at facilitating co-regulation with clients. It may also be important to better understand the rates and degree of active trauma symptoms in counseling students to improve trauma-informed pedagogy and to

better understand the short, mid, and long term impact of counselor trauma on professional functioning and client outcomes.

This study also included a range of limitations, including a small sample size with a wide range of scores and a large degree of missing data at the client level. These limitations impeded our ability to conduct a three-level longitudinal HLM analysis and subsequently reduces the nuances of our results due to the inability to analyze nested effects of client change over time within counselor. We were also constrained with the amount of time we ran each mindfulness module and the duration of the study across the semester. Future researchers could explore the potential benefits of integrating mindfulness education into all counselor education classes to improve the overall reach of the material and to provide counseling students with a better opportunity to increase the frequency, duration, and intensity of their practice as a way to potentiate the development of deeper qualities of mindfulness.

APPENDIX A

DEMOGRAPHIC SURVEYS

Counseling Student Demographic Form The following questions will ask some basic demographic questions. Please answer to the best of your knowledge	
Q1 What is your gender?	Male (1) Female (2) Non-binary / third gender (3) Prefer not to say (4)
Q2 What is your date of birth (month, day, year, written as xx/xx/xxxx?	
Q3 What is your age in years?	
Q4 What is your race?	Asian (1) Alaskan Native or Native American (2) African American or Black (3) Latino or Hispanic (4) Native Hawaiian or Pacific Islander (5) White (6) Other (7)
Q5 Would you consider yourself to have a trauma history?	Yes (1) No (2) I don't know/Unsure (3)
Q6 How would you describe your experience with mindfulness?	I don't know what mindfulness is (1) I have some understanding of mindfulness but I have not practiced it (2) I have some understanding of mindfulness and I have practiced it a little bit (3) I have a regular mindfulness practice (e.g., I meditate at least one hour per week) (4)
Q7 How would you rate your ability to form therapeutic relationships with clients?	Excellent (1) Good (2) Average (3) Poor (4) Terrible (5)
Q8 How would you rate your confidence level in working with clients?	Excellent (1) Good (2) Average (3) Poor (4) Terrible (5)

Client Demographics Form Q1 What is the full name of your counselor who you are/will be seeing at the CHDC. If you do not know their last name, just enter as much of their name as you remember.	
Q2 What is your date of birth?	
Q3 What is your age in years?	
Q4 What is your gender?	Male (1) Female (2) Non-binary / third gender (3) Prefer not to say (4)
Q5 About how many sessions have you had with your current counselor?	Between 0-4 (1) Between 5-8 (2) 9 or more (3)
Q6 Have you received any form of counseling or therapy before? If so, indicate an average amount of sessions you believe you have attended	I have never received counseling before (1) I have attended somewhere between 1-10 sessions (2) I have attended somewhere between 11-20 sessions (3) I have attended somewhere between 21-40 sessions (4) I have attended more than 40 sessions (5)
Q7 Please indicate for which condition you are seeking counseling.	Anxiety/Stress (1) Depression/Mood (2) Trauma (3) Relationships (partners/friends/family) (4) Personal growth (5) Academics/Focus/Attention (6) Other (7)
Q8 Please indicate how much mental/emotional/psychological suffering you are currently experiencing from 0-10, if 0 is no suffering at all and 10 is the worst you have ever felt.	

APPENDIX B

APPROVAL LETTERS

College of Education
Department of Counseling and Higher Education

Institutional Review Board, University of North Texas
1155 Union Circle
Denton, TX 76203

July 18, 2022

Dear UNT IRB,

Based on my review of the proposed research by Ph.D. student Lindsey Warwick and her dissertation chair, Dr. Matthew Lemberger-Truelove, I give permission for her and her research team to conduct the study entitled *The Role of Counselor Mindfulness in Client Outcomes* within the Counseling and Human Development Center (CHDC) at the University of North Texas. As part of this study, I authorize the researcher(s) to recruit clients who seek counseling services at the CHDC both in-person and electronically (e.g., phone, email), to collect paper and electronic data, and to use this data in formal research manuscripts for publication, presentation, education, and/or additional research. Individuals' participation will be voluntary.

We understand that our organization's responsibilities include: allowing the research team to contact our CHDC clients and provide them paper/electronic surveys to fill out for data collection. We reserve the right to withdraw from the study at any time if our circumstances change.

We understand that the research will include Lindsey Warwick and the research team approaching clients at the CHDC in-person or electronically to ask them to provide paper/ electronic survey data feedback on their counselor and their overall clinical experiences at three timepoints throughout the Fall 2022 semester. This authorization covers the time period of August 15th, 2022, to December 20th, 2022.

I confirm that I am authorized to approve research in this setting. I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the research team without permission from the UNT IRB.

1155 Union Circle #123456
Denton, Texas 76203-5017

940.565.2000
940.565.0000 fax

web.option.unt.edu
www.unt.edu

College of Education
Department of Counseling and Higher Education

Institutional Review Board, University of North Texas
1155 Union Circle
Denton, TX 76203

July 18, 2022

Dear UNT IRB,

Based on my review of the proposed research by Ph.D. student Lindsey Warwick and her dissertation chair, Dr. Matthew Lemberger-Truelove, I give permission for her and her research team to conduct the study entitled *The Role of Counselor Mindfulness in Client Outcomes* within the master's counseling program in the department of counseling and higher education at the University of North Texas. As part of this study, I authorize the researcher(s) to recruit master's students in the program both in-person and electronically (e.g., phone, email), to collect paper and electronic data, and to use this data in formal research manuscripts for publication, presentation, education, and/or additional research. I also give her permission to run her intervention study providing a mindfulness training to master's student participants as part of their practicum course. Additionally, the research team has permission to use the necessary rooms (practicum classroom, group therapy room, etc.) in the department to conduct the intervention. Individuals' participation will be voluntary.

We understand that our organization's responsibilities include: allowing the research team to contact our master's students and provide them paper/electronic surveys to fill out for data collection. We also recognize that we will be providing space in the classrooms/therapy rooms in the department for in-person meetings related to the intervention. We reserve the right to withdraw from the study at any time if our circumstances change.

We understand that the research will include Lindsey Warwick and the research team approaching master's students in the counseling program in-person or electronically to ask them to provide paper/electronic survey data feedback on their growth in mindfulness, their trauma symptoms, and their self-report of therapeutic presence at three timepoints throughout the Fall 2022 semester. We also understand that this research will involve specific participants being assigned to a treatment or a control group and being provided a mindfulness intervention as part of their practicum class. This authorization covers the time period of August 15th, 2022, to December 20th, 2022.

I confirm that I am authorized to approve research in this setting. I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the research team without permission from the UNT IRB.

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Denton, Texas 76203-5017 | 940.565.0000 fax | www.unt.edu

APPENDIX C

RECRUITMENT SCRIPTS

Subject: Paid Research Opportunity at UNT

Dear Participant,

Under the guidance of Dr. Matthew Lemberger-Truelove in the University of North Texas Department of Counseling and Higher Education, Lindsey Warwick, Ph.D., student, is seeking participants who are 18 years old and older and who are about to begin counseling services or have just begun counseling services with a practicum counseling student at the Counseling and Human Development Center (CHDC) at the University of North Texas. You are being asked to participate in a research study titled, "The Role of Counselor Mindfulness in Client Outcomes." You have been identified because you are currently or about to begin counseling services with a master's counseling practicum student at the CHDC. The purpose of this study is to explore your perception of your counselor's therapeutic presence and to provide data on your overall experience in counseling, including your perception of your overall outcome. This data will help to explore whether integrating a mindfulness intervention for counseling master's practicum students helps improve client outcomes. Your responses will NOT be made available to your counselor. You will receive a prepaid amazon voucher for your time.

Participation in this study takes approximately 10 minutes, three times over the semester (30 minutes total) and include the following activities:

- You will be asked to fill out a three-question survey on your perception of your counselor's therapeutic presence with you at three timepoints throughout the semester.
- You will be asked to fill out one 45 question outcome survey at the beginning, middle, and end of your counseling services.

It is important to remember that participation is voluntary. For more information about this study, please contact the research team by phone at (714) 299-8140 or email at lindsey.warwick@unt.edu.

Link to survey: **https://unt.az1.qualtrics.com/jfe/form/SV_9Gk9TNsCBuKwe2i**

Thank you,

Lindsey Warwick, Student Investigator
Email: lindsey.warwick@unt.edu
Phone: 940 565 2910

Dr. Matthew Lemberger-Truelove, Ph.D, Principal Investigator
Email: matthew.lemberger-truelove@unt.edu
Phone: 940 565 2910

APPENDIX D

INFORMED CONSENT FOR CLIENTS

Informed Consent for Studies with Adults

TITLE OF RESEARCH STUDY: The Role of Counselor Mindfulness in Client Outcomes
IRB Protocol Number: IRB-22-423
RESEARCH TEAM:
Lindsey Warwick (Student Investigator – doctoral student)
Doctoral Student – University of North Texas
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Denton, TX 76203-5017
Lindsey.warwick@unt.edu
Phone: [redacted]
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Dr. Trey DeJong, Ph.D.
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1155 Union Circle #310829
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Trey.DeJong@unt.edu

Madison Walker – Co-Investigator, Ph.D. student at University of North Texas
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Lillian Chen – Co-Investigator, Ph.D. student at University of North Texas
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Fax: (940) 565-2905
Lillian.Chen@unt.edu

You are being asked to participate in a research study. Taking part in this study is voluntary. The investigators will explain the study to you, and will any answer any questions you might have. It is your choice whether or not you take part in this study. If you agree to participate and then choose to withdraw from the study, that is your right, and your decision will not be held against you.

You are being asked to take part in a research study to explore the effects of integrating a 15-week mindfulness intervention into a master's counseling clinical practicum class to understand if it leads to improvement in client outcomes. The second purpose is to explore whether that same intervention improves mindfulness in counseling practicum students. The third purpose is to explore whether that same intervention reduces trauma symptoms in counseling practicum students.

Your participation in this research study involves providing some feedback on your experience of your counselor's therapeutic presence at three timepoints throughout the Fall 2022 semester, and then filling out one survey on your overall counseling outcome experience. More details will be provided in the next section.

You might want to participate in this study if you have just begun or are about to begin receiving counseling at the Counseling and Human Development Center at the University of North Texas and your counselor is a master's practicum student. Participating in this study will allow you provide feedback on your experience of your counselor, how attentive they are to you, and your overall outcome after you finish your counseling sessions with your counselor. However, you

might not want to participate in this study if you do not have the time or interest in providing some brief details about your counseling experience.
You may choose to participate in this research study if you are over the age of 18 and have just begun or are about to begin counseling at the Counseling and Human Development Center (CHDC) with a master's practicum student counselor at the University of North Texas.

The reasonable foreseeable risks or discomforts to you if you choose to take part is the potential for loss of confidentiality. However, the possible benefits of engaging in this study include informing future research and education for counselors, which may contribute to improvement in counseling services for clients in the future. You will receive compensation for participation (a $10 prepaid amazon voucher) if you completely fill out all surveys and all questions at all timepoints. You will not be compensated if you do not complete all of the necessary requirements. If you choose not to be in this study, your choices may include continuing your counseling sessions with your provider without providing feedback.

DETAILED INFORMATION ABOUT THIS RESEARCH STUDY: The following is more detailed information about this study, in addition to the information listed above.

PURPOSE OF THE STUDY: The purpose of the study is to provide a 15-week mindfulness intervention to master's counseling practicum students to explore its utility in facilitating improvements in client outcomes. It will also be used to explore mindfulness development in counseling students and changes in trauma symptoms in counseling students. As the client participant, you will be able to provide feedback on your perception of your counselor's growth in therapeutic presence, and data on your overall counseling experience.

TIME COMMITMENT: The study will require you to fill out a 45 question baseline assessment at beginning, midpoint, and endpoint, and a 3-question survey at beginning, midpoint, and endpoint of the semester The total time that this should take you is no more than 30 minutes at each timepoint. These assessments are not part of the standard counseling center data that is collected and will not be stored in your clinical file.

STUDY PROCEDURES: By participating in this research, you will be contacted by the PI, Lindsey Warwick, and provided an electronic link to a survey at three timepoints during the semester. You can fill it out electronically and the data will then be accessible by the researcher.

The assessments being used include: Demographic questionnaire, with basic questions such as age, gender identity, racial/ethnic background, and counseling experience. The survey you will fill out at three timepoints includes Therapeutic Presence Inventory – Client (TPI-C: Geller et al., 2010) to provide feedback on your counselor's level of presence with you.

POSSIBLE BENEFITS: While there are no direct benefits to the participants, the potential benefits to participating in this study include the ability to provide direct feedback on client needs that help inform future education and research in counselor training.

POSSIBLE RISKS/DISCOMFORTS: Participation in online surveys within this study involve risks to confidentiality similar to a person's everyday use of the internet and there is always a risk of breach of confidentiality.

This research study is not expected to pose any additional risks beyond what you would normally experience in your regular everyday life. However, if you do experience any discomfort, please inform the research team

Participating in research may involve a loss of privacy and the potential for a breach in confidentiality. Study data will be physically and electronically secured by the research team. As with any use of electronic means to store data, there is a risk of breach of data security.

Participating in this research study may involve increased risk of exposure to COVID-19 due to in-person interactions with the research team. The study team will follow local regulations and institutional policies, including using personal protective equipment (masks) and social distancing guidelines while those regulations and policies are in effect. If you have any questions or concerns, please discuss them with your research team.

If you experience excessive discomfort when completing the research activity, you may choose to stop participating at any time without penalty. UNT does not provide medical services, or financial assistance for emotional distress or injuries that might happen from participating in this research. If you need to discuss your discomfort further, please contact a mental health provider, or you may contact the researcher who will refer you to appropriate services. If your need is urgent, helpful resources include Denton County MHMR crisis hotline at 1-800-762-0157; UNT Mental Health Emergency line at 940-565-2741; Family Violence Shelter of Denton County Crisis Line at 940-382-7273; National Suicide Prevention Hotline at 988; UNT Survivor Advocate for students effected by Violence or Sexual Assault at 940-565-2648].

Additionally, due to the collection of data involving trauma symptoms, the UNT Survivor Advocate connects students who have been impacted by violence to resources (counseling, health, safety, academics, legal, etc.), and act as their advocate. The UNT Survivor Advocate can be reached by emailing SurvivorAdvocate@unt.edu or calling 940-565-2648. If there is an emergency, please call the police at 911 or the Denton County Friends of the Family 24-hour crisis line at 940-382-7273.

COMPENSATION: Compensation will be given for full completion of participation in this study in the form of a $10 pre-paid amazon voucher. The researchers would like to openly and transparently disclose that they have contributed their personal money to complete this research. This project is not being formally funded by any external or internal organization. If you have any questions or concerns about this, please contact UNT's Research Integrity and Compliance at oric@unt.edu"

Internal Revenue Service (IRS) considers all payments made to research subjects to be taxable income. Your personal information, including your name, address, and social security number may be acquired from you and provided to UNT System Tax Office for the purpose of payment. If you are an employee, we will be collecting your employee ID. If your total payments for the

year exceed $600.00, UNT will report this information to the IRS as income and you will receive a Form 1099 at the end of the year. If you receive less than $600.00 total payments in a year, you are personally responsible for reporting the payments to the IRS. There are no alternative activities offered for this study, but withdrawal of the study will not affect your counseling services in any way.

CONFIDENTIALITY: Efforts will be made by the research team to keep your personal information private, including research study data, and disclosure will be limited to people who have a need to review this information. All paper and electronic data collected from this study will be stored in a secure location on the UNT campus and/or a secure UNT server for at least three (3) years past the end of this research. Paper data will be uploaded to an encrypted and password protected drive owned by the PI and then paper documents will be destroyed. Research records will be labeled with a code and the master key linking names with codes will be maintained in a separate and secure location. No identifying information will be stored.

The results of this study may be published and/or presented without naming you as a participant. The data collected about you for this study will be used for future research studies that are not described in this consent form. If that occurs, an IRB would first evaluate the use of any information that is identifiable to you, and confidentiality protection would be maintained.

While absolute confidentiality cannot be guaranteed, the research team will make every effort to protect the confidentiality of your records, as described here and to the extent permitted by law. In addition to the research team, the following entities may have access to your records, but only on a need-to-know basis: the U.S. Department of Health and Human Services, the FDA (federal regulating agencies), the reviewing IRB, and sponsors of the study.

This research uses third party software from three companies. The first is Qualtrics, which is used to collect data and is subject to the privacy policies of this software, which are noted here: https://www.qualtrics.com/privacy-statement/. The second company is SPSS, which is used to analyze data and is subject to the privacy policies of this software noted here: https://www.ibm.com/us-en/privacy.

CONTACT INFORMATION FOR QUESTIONS ABOUT THE STUDY: If you have any questions about the study you may contact the SI, Lindsey Warwick, at (714) 299-8140 or lindsey.warwick@unt.edu. Any questions you have regarding your rights as a research subject, or complaints about the research may be directed to the Office of Research Integrity and Compliance at 940-565-4643, or by email at untirb@unt.edu.

CONSENT:

- Your signature below indicates that you have read or have had read to you all of the above.
- You confirm that you have been told the possible benefits, risks, and/or discomforts of the study.
- You understand that you do not have to take part in this study and your refusal to participate or your decision to withdraw will involve no penalty or loss of rights or benefits.

- You understand your rights as a research participant and you voluntarily consent to participate in this study; you also understand that the study personnel may choose to stop your participation at any time.
- By signing, you are not waiving any of your legal rights.

Please sign below if you are at least 18 years of age and voluntarily agree to participate in this study.

SIGNATURE OF PARTICIPANT DATE

*If you agree to participate, please provide a signed copy of this form to the researcher team. They will provide you with a copy to keep for your records.

For the Principal Investigator or Designee:
I certify that I have reviewed the contents of this form with the subject signing above. I have explained the possible benefits and the potential risks and/or discomforts of the study. It is my opinion that the participant understood the explanation.

_____ _____
Signature of Principal Investigator or Designee Date

APPENDIX E

INFORMED CONSENT FOR COUNSELORS

Informed Consent for Studies with Adults

TITLE OF RESEARCH STUDY: The Role of Counselor Mindfulness in Client Outcomes
IRB Protocol Number: IRB-22-423
RESEARCH TEAM:
Lindsey Warwick (Student Investigator – doctoral student)
Doctoral Student – University of North Texas
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Dr. Trey DeJong, Ph.D.
Dissertation Committee Member, Adjunct Faculty – University of North Texas
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1155 Union Circle #310829
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Lillian Chen – Co-Investigator, Ph.D. student at University of North Texas
Assistant Director, Counseling and Human Development Center
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Lillian.Chen@unt.edu

You are being asked to participate in a research study. Taking part in this study is voluntary. The investigators will explain the study to you, and will any answer any questions you might have. It is your choice whether or not you take part in this study. If you agree to participate and then choose to withdraw from the study, that is your right, and your decision will not be held against you.

You are being asked to take part in a research study to explore the effects of integrating a 15-week mindfulness intervention into a master's counseling clinical practicum class to understand if it leads to improvement in client outcomes. The second purpose is to explore whether that same intervention improves mindfulness in counseling practicum students. The third purpose is to explore whether that same intervention reduces trauma symptoms in counseling practicum students.

Your participation in this research study involves partaking in a 20 minute per week mindfulness intervention conducted prior to your clinical practicum and providing some survey data at three timepoints during the intervention. More details will be provided in the next section.

You might want to participate in this study if you are currently enrolled in a clinical practicum class at the University of North Texas in the master's counseling program. Participating in this study will allow you to receive several weeks of mindfulness training, which research indicates helps improve clinical skills and client outcomes (e.g., Siegel, 2010), and thus may be beneficial to your overall counseling training. However, you might not want to participate in this study if

you have any specific objections to engaging in mindfulness training or are not able to commit to attending the sessions.

You may choose to participate in this research study if you are over the age of 18 and currently enrolled in the clinical practicum master's class at the University of North Texas in the department of counseling and higher education.

The reasonable foreseeable risks or discomforts to you if you choose to take part is the potential for loss of confidentiality. There is a chance you may find mindfulness training somewhat difficult, especially if you have never engaged in the practice before. However, the possible benefits of engaging in this study may include improved therapeutic presence, improved capacity for client empathy, improved cognitive flexibility and complexity, better ability to self-regulate during difficult client sessions, and improvement in a variety of clinical skills deemed important for improving the best possible client outcomes. You will receive compensation for participation (a $10 prepaid amazon voucher) if you attend all mindfulness training sessions and fill out all assessments at all timepoints. Instead of being in this research study, your choices may include continuing your counseling training in the program without the potential benefit of mindfulness training, or seeking mindfulness training externally.

DETAILED INFORMATION ABOUT THIS RESEARCH STUDY: The following is more detailed information about this study, in addition to the information listed above.

PURPOSE OF THE STUDY: The purpose of the study is to provide a 15-week mindfulness intervention to master's counseling practicum students to explore its utility in facilitating improvements in client outcomes. It will also be used to explore mindfulness development in counseling students and changes in trauma symptoms in counseling students.

TIME COMMITMENT: The study will require you to attend a 20-minute guided mindfulness intervention once per week for 15 weeks that will occur right before your clinical practicum class. You will also be required to fill out assessments at three timepoints throughout the Fall 2022 semester. These will take approximately 10 minutes per point for 30 minutes total. The total estimated time involved for this study is 330 minutes over the entirety of the Fall 2022 semester, which is 5.5 hours.

STUDY PROCEDURES: By participating in this research, you will be randomly assigned by practicum class to either a treatment group or a control group. The treatment group will receive a 20-minute smartphone-guided mindfulness training activity embedded into their counseling practicum class once per week for 15 weeks across the Fall 2022 semester. The activity will include sitting in a room with your classmates and listening to a guided mindfulness meditation pre-recorded on a smartphone device and facilitated by the SI, Lindsey Warwick. You will also be instructed to download this cost-free application to use between class sessions. The recorded mindfulness intervention will guide you through various techniques to pay attention to inner experience, to practice becoming self-aware, to maintain focus internally (e.g., on bodily cues) and externally (e.g., to sounds in the environment), and to stay in the present moment. Participants in the treatment group and control will be required to fill out brief assessments on mindfulness, trauma symptoms, and therapeutic presence at three timepoints during the semester.

These include at the beginning of the study, at the midpoint, and at the end when the mindfulness intervention concludes. The assessments should take no more than 10 minutes to complete at each timepoint.

The assessments being used include: Demographic questionnaire. This will ask basic questions related to age, gender, race, ethnicity, and some questions about background in mindfulness. The Five Facet Mindfulness Questionnaire (FFMQ: Baer et al., 2007), which measure five subscales of mindfulness, including acting with awareness, observing, describing, nonjudging, and nonreactivity. Trauma symptoms will be assessed using the Global Psychotrauma Screen (GPS, Schnyder et al, 2017). This checklist will be used to explore trauma symptoms in counseling students based on prior research that found greater risk of personal trauma in counseling graduate students (e.g., Black et al., 1993). Mindfulness has been established as effective way to reduce trauma and trauma-related symptoms in adults (Vujanovic et al., 2020). Therapeutic presence will be measured using the Therapeutic Presence Inventory – Therapist (TPI-T: Geller et al., 2010) to self-assess their level of presence with their clients.

POSSIBLE BENEFITS: The potential benefits to participating in this study include possible improvement in various characteristics of effective counseling, such as improved presence, improved empathy, improved self-awareness, and improved cognitive flexibility and cognitive complexity. Additionally, other possible benefits include better ability to facilitate an effective therapeutic relationship with your clients. Finally, participation in this study may include increased improvement for your clients compared to counseling students who do not train in mindfulness.

There are also several anticipated benefits to the field of counselor education. Almost no research has been done exploring the links between counselor self-development (e.g., mindfulness) and the links to client outcomes. Should this study find statistically significant results, it could pioneer the field of counselor education and accreditation standards to incorporate more mindfulness education into counselor training to help create counselors with better clinical skills, interpersonal skills, and better self-regulation. These improvements in skills stand to improve client treatment outcomes, which could ultimately help the overall community of people seeking mental health services.

POSSIBLE RISKS/DISCOMFORTS: Participation in online surveys within this study involve risks to confidentiality similar to a person's everyday use of the internet and there is always a risk of breach of confidentiality.

It is possible that mindfulness meditation may bring up distressing mental content. If that occurs, you may end the meditation session for that week or pull out of the study entirely, at your discretion. Additionally, some people may find it distressing to fill out survey data on trauma symptoms. You may fill out as much or as little of the surveys as you wish. You will also have access to counseling services as part of the master's counseling program free of charge, should you need them. Should a crisis occur, though it is not foreseen, you may contact: Denton County MHMR crisis hotline at 1-800-762-0157; UNT Mental Health Emergency line at 940-565-2741; Family Violence Shelter of Denton County Crisis Line at 940-382-7273; National Suicide

Prevention Hotline at 988; UNT Survivor Advocate for students effected by Violence or Sexual Assault at 940-565-2648].

Participating in research may involve a loss of privacy and the potential for a breach in confidentiality. Study data will be physically and electronically secured by the research team. As with any use of electronic means to store data, there is a risk of breach of data security.

Participating in this research study may involve increased risk of exposure to COVID-19 due to in-person interactions with the research team. The study team will follow local regulations and institutional policies, including using personal protective equipment (masks) and social distancing guidelines while those regulations and policies are in effect. If you have any questions or concerns, please discuss them with your research team.

Participating in this research study may involve increased risk of exposure to COVID-19 due to in-person interactions with the research team. The study team will follow local regulations and institutional policies, including using personal protective equipment (masks) and social distancing guidelines while those regulations and policies are in effect. If you have any questions or concerns, please discuss them with your research team.

If you experience excessive discomfort when completing the research activity, you may choose to stop participating at any time without penalty. The researchers will try to prevent any problem that could happen, but the study may involve risks to the participant, which are currently unforeseeable. UNT does not provide medical services, or financial assistance for emotional distress or injuries that might happen from participating in this research. If you need to discuss your discomfort further, please contact a mental health provider, or you may contact the researcher who will refer you to appropriate services. If your need is urgent, helpful resources include Denton County MHMR crisis hotline at 1-800-762-0157; UNT Mental Health Emergency line at 940-565-2741; Family Violence Shelter of Denton County Crisis Line at 940-382-7273; National Suicide Prevention Hotline at 988; UNT Survivor Advocate for students effected by Violence or Sexual Assault at 940-565-2648].

Additionally, due to the collection of data involving trauma symptoms, the UNT Survivor Advocate connects students who have been impacted by violence to resources (counseling, health, safety, academics, legal, etc.), and act as their advocate. The UNT Survivor Advocate can be reached by emailing SurvivorAdvocate@unt.edu or calling 940-565-2648. If there is an emergency, please call the police at 911 or the Denton County Friends of the Family 24-hour crisis line at 940-382-7273.

COMPENSATION: Compensation will be given for full completion of participation in this study in the form of a $10 pre-paid amazon voucher. The researchers would like to openly and transparently disclose that they have contributed their personal money to complete this research. This project is not being formally funded by any external or internal organization. If you have any questions or concerns about this, please contact UNT's Research Integrity and Compliance at oric@unt.edu"

Internal Revenue Service (IRS) considers all payments made to research subjects to be taxable income. Your personal information, including your name, address, and social security number may be acquired from you and provided to UNT System Tax Office for the purpose of payment. If you are an employee, we will be collecting your employee ID. If your total payments for the year exceed $600.00, UNT will report this information to the IRS as income and you will receive a Form 1099 at the end of the year. If you receive less than $600.00 total payments in a year, you are personally responsible for reporting the payments to the IRS. There are no alternative activities offered for this study.

CONFIDENTIALITY: Efforts will be made by the research team to keep your personal information private, including research study data, and disclosure will be limited to people who have a need to review this information. All paper and electronic data collected from this study will be stored in a secure location on the UNT campus and/or a secure UNT server for at least three (3) years past the end of this research. Paper data will be uploaded to an encrypted and password protected drive owned by the PI and then paper documents will be destroyed. Research records will be labeled with a code and the master key linking names with codes will be maintained in a separate and secure location.

Due to Senate Bill 212, all University of North Texas employees are required to report all events of sexual harassment, sexual assault, dating violence, or stalking that involve a current student or employee. These reports are made to the University's Title IX Coordinator. You should understand that some of the information you provide during this study will be disclosed by the researchers to the appropriate authorities, if required by the law.

The results of this study may be published and/or presented without naming you as a participant. The data collected about you for this study will be used for future research studies that are not described in this consent form. If that occurs, an IRB would first evaluate the use of any information that is identifiable to you, and confidentiality protection would be maintained.

While absolute confidentiality cannot be guaranteed, the research team will make every effort to protect the confidentiality of your records, as described here and to the extent permitted by law. In addition to the research team, the following entities may have access to your records, but only on a need-to-know basis: the U.S. Department of Health and Human Services, the FDA (federal regulating agencies), the reviewing IRB, and sponsors of the study.

This research uses third party software from three companies. The first is Qualtrics, which is used to collect data and is subject to the privacy policies of this software, which are noted here: https://www.qualtrics.com/privacy-statement/. The second company is SPSS, which is used to analyze data and is subject to the privacy policies of this software noted here: https://www.ibm.com/us-en/privacy

CONTACT INFORMATION FOR QUESTIONS ABOUT THE STUDY: If you have any questions about the study you may contact the SI, Lindsey Warwick, at (714) 299-8140 or lindsey.warwick@unt.edu. Any questions you have regarding your rights as a research subject, or complaints about the research may be directed to the Office of Research Integrity and Compliance at 940-565-4643, or by email at untirb@unt.edu.

CONSENT:

- Your signature below indicates that you have read, or have had read to you all of the above.
- You confirm that you have been told the possible benefits, risks, and/or discomforts of the study.
- You understand that you do not have to take part in this study and your refusal to participate or your decision to withdraw will involve no penalty or loss of rights or benefits.
- You understand your rights as a research participant and you voluntarily consent to participate in this study; you also understand that the study personnel may choose to stop your participation at any time.
- By signing, you are not waiving any of your legal rights.

Please sign below if you are at least 18 years of age and voluntarily agree to participate in this study.

SIGNATURE OF PARTICIPANT DATE

*If you agree to participate, please provide a signed copy of this form to the researcher team. They will provide you with a copy to keep for your records.

For the Principal Investigator or Designee:
I certify that I have reviewed the contents of this form with the subject signing above. I have explained the possible benefits and the potential risks and/or discomforts of the study. It is my opinion that the participant understood the explanation.

_____ _____

Signature of Principal Investigator or Designee Date

APPENDIX F

IRB APPROVAL LETTERS

DIVISION OF
RESEARCH & INNOVATION
Research Integrity
& Compliance

August 17, 2022

PI: Matthew Lemberger-truelove
Study Title: The Role of Counselor Mindfulness in Client Outcomes
IRB # IRB-22-423

Dear Dr. Matthew Lemberger-truelove:

As permitted by federal law and regulations governing the use of human subjects in research projects (45 CFR 46), the UNT Institutional Review Board has reviewed your proposed project titled "The Role of Counselor Mindfulness in Client Outcomes." The submitted protocol is hereby approved for the use of human subjects in this study.

Your informed consent document can be found in the Study Details section under the Attachments tab in Cayuse IRB. Please store them in a secure location and **use the approved copy** for your study subjects.

Any and all changes to an approved research study must be submitted for review and approval prior to implementing the change(s) into the research study.

Please contact the Office of Research Integrity and Compliance at 940-565-4643, if you wish to make changes or need additional information.

Note: Please do not reply to this email. Please direct all questions to untirb@unt.edu

Sincerely,

Gabe Ignatow, Ph.D.
Professor
Chair, Institutional Review Board

GI:db

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