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Abstract

This ABA single-case study tested Constructed Awareness (CA) for treating complex posttraumatic stress disorder (CPTSD) and prolonged grief disorder (PGD) in a single client (n=1). We measured symptom changes using PCL-5 and ICG scales across baseline, treatment, and follow-up phases. Percentage of nonoverlapping data (PND) scores for PCL-5 and ICG ranged from 83.33% to 100%, with significant p values ($p < 0.05$), suggesting CA's effectiveness in treating CPTSD and PGD for the participant under study.

***Keywords*:** Constructed Awareness, complex posttraumatic stress disorder, prolonged grief disorder, single-case study, ABA design.

Trauma therapy has evolved significantly over the last five decades, giving rise to a variety of approaches aimed at helping individuals heal from traumatic experiences (Walker, 2017). While these therapies provide valuable approaches for addressing specific dimensions of trauma, they potentially emphasize one aspect of the client's experience more than others, leaving some elements less explored. For instance, cognitive therapies often focus on the mind by identifying and altering disturbing or destructive thought patterns (Nakao et al., 2021). In response to this cognitive focus, somatic therapies have emerged to shift attention to the body, helping clients engage with and process their bodily sensations (Levine, 2015; Ogden & Fisher, 2015). However, while these approaches offer valuable tools, they often prioritize one aspect of the client's experience over others. Constructed Awareness (CA) emerges as a novel therapeutic model that seeks to resource and process trauma by balancing and integrating key domains of the human experience, specifically focusing on thoughts, sensations, and external senses (Orr et al., 2024). This paper presents a single-case study using an ABA time-series design to test CA's effectiveness in treating a client with complex posttraumatic stress disorder (CPTSD) and prolonged grief disorder (PGD).

Rationale for the Current Study

CA is an emerging model for treating trauma that uses mindful awareness to resource and process traumatic experiences. By helping clients engage with their thoughts, sensations, and external environment, CA aims to facilitate deeper self-awareness and emotional healing. However, CA's theory and interventions are relatively untested. The lead author developed

the CA theory and techniques through clinical practice and observations in which clients reported and demonstrated reduced trauma symptoms. To date, one empirical study (Orr et al., 2024) found that CA was an effective trauma treatment, showing comparable results to eye movement desensitization and reprocessing (EMDR; Shapiro, 2017). However, that study focused on a sample of clients with various diagnoses. This study's rationale emerged from a need for evidence regarding the effectiveness of CA as a treatment for specific diagnoses. This single case study aims to clinically test and provide preliminary information about CA as a treatment for a client diagnosed with CPTSD and PGD.

In this study, we explore two research questions. (a) How effective is CA over time as a treatment for a single client with CPTSD; (b) How effective is CA over time as a treatment for a single client with PGD?

The Origin of Constructed Awareness

The lead author, a certified EMDR (Shapiro, 2017) therapist and EMDR International Association (EMDRIA) approved consultant, first noticed clients orienting to specific building blocks while implementing EMDR in his private practice in 2017. The most common question EMDR therapists ask is, "What are you noticing now?" The lead author noticed that most clients answered the question using only one part of their experience. Some clients answered mostly with thoughts, trying to rationalize their discomfort. Other clients focused more on their somatic experience: they cried, moved their bodies cathartically, and primarily reported sensations. Whereas others focused more outside of themselves, concerning themselves with how the lead author was feeling or editing their emotional responses to ensure that he was not uncomfortable. This observation led to a theory that reality is constructed by three building blocks (i.e., thoughts, sensations, and external senses), and most people rely more on one building block and less on the other two, which led the lead author to wonder if determining the dominant building block and developing resources to improve awareness of the less dominant building blocks would improve EMDR processing.

From 2017-2020, the lead author experimented with and created the theory and interventions that would become CA, working with approximately 200 private practice clients. He observed that clients processed more efficiently and provided more robust responses to the question "What are you noticing now?" when they could connect with and express details about all parts of themselves (Orr et al., 2024). Although this type of history-taking and resourcing was initially intended to address issues within EMDR, the CA theory and methods evolved into a distinct therapeutic model, differing from the core definition and tenets of EMDR. To understand CA's tenets and interventions, it is essential to first explore its foundational principles.

The Three Principles of Constructed Awareness

CA relies on three principles (Orr et al., 2024):

- Bringing awareness to a client's experience changes their experience.
- The human experience is comprised of three building blocks: thoughts, sensations, and external senses.
- Most clients naturally orient their awareness more strongly to one of the three building blocks.

First Principle

CA's first principle is that bringing mindful awareness to a client's experience changes their experience (Orr et al., 2024). This mindful awareness is understood as the purposeful, present-focused, and non-judgmental attention to experience (Kabat-Zinn, 2013). An example is the Hawthorne Effect, which states that the presence of a researcher influences the behavior of those being studied (McCambridge et al., 2014). While effort and hard work may lead to task completion, CA posits that willpower alone is rarely sufficient to overcome disturbing emotions and behaviors. Instead, CA practitioners view mindful awareness as the key mechanism driving change (Orr et al., 2024).

Second Principle

CA's second principle is that the conscious human experience is comprised of three domains (Orr et al., 2024). These domains are known in CA as the three *building blocks*: mental building block, sensation building block, and external building block. For example, a client might notice the sound of a dog barking outside the therapy office (external building block). This sound might trigger a disturbing memory of the time they were attacked by a dog (mental building block), which then triggers tightness in their chest (sensation building block). Therapists trained in CA offer a unique approach to enhancing mindful awareness of how the building blocks construct human experience. Improving awareness of how these building blocks create our reality can improve how clients focus their attention, regulate themselves, and connect with the world (Orr et al., 2024).

The second principle is informed by Barrett's (2017a & 2017b) theory of constructed emotion (TCE). Barrett breaks away from the classical theories of emotion (Darwin, 1872; Ekman & Friesen, 2003) by proposing that instances of emotion are predicted and constructed by the brain as needed in the moment based on internal and external stimuli and past experiences. The classical view of emotion assumes that feelings and thoughts are at odds and that rationality is the antidote for the unpredictable impulses of emotions (Givens & Wilkinson, 2022). We see the classical view's influence on cognitive behavioral therapy (CBT), which assumes self-regulation results from applying rational thinking to manage irrational feelings (Dobson & Dobson, 2018; Givens & Wilkinson, 2022). Alternatively, TCE highlights the interconnectedness of thought and feeling that intersect whenever emotion is experienced (Barrett, 2017b).

TCE represents a paradigm shift for counselors (Givens & Wilkinson, 2022) and provides new implications for knowledge, case conceptualization, and counseling techniques (Barrett, 2017b). CA puts Barrett's theory into clinical practice by defining *emotion* as a combination of mental, sensation, and external building blocks (Orr et al., 2024). Emotions are viewed simply as concepts that describe the collective experience of the building blocks. Rather than working with emotions, CA practitioners help clients explore the building blocks that make up emotions. In fact, the approach is called CA because clients learn to bring awareness to the building blocks that construct their emotional experiences.

Third Principle

The third principle of CA is that most clients naturally orient their awareness more strongly to one of the three building blocks, relying on one more than the others to self-regulate and connect with people (Orr et al., 2024). Each building block corresponds to a specific orientation. *Mentally-Oriented* clients regulate emotions by using logic and reason. They prefer intellectual connections, processing feelings through analysis. *Externally-Oriented* clients focus on

their environment, adapting to external demands and responding to social and environmental cues. They prioritize managing tasks and relationships over exploring internal experiences. *Sensation-Oriented* clients are attuned to their bodily sensations and often express emotions physically. They also tend to connect more physically, finding comfort in touch and movement.

CA defines *orientation* as how a client uses these building blocks to direct attention, connect with others, and regulate emotions (Orr et al., 2024). Understanding a client's orientation helps counselors select resources that best meet the client's needs. For instance, a Mentally-Oriented client may benefit more from resources that enhance awareness of bodily sensations and external stimuli to balance their system.

Siegel and Drulis (2023) reported that mindful awareness enhances brain function, mental activity, and interpersonal relationships, a process Siegel (2009) referred to as *internal attunement*. Siegel (2009) defines internal attunement as "the linkage of differentiated elements of a system that leads to the flexible, adaptive, and coherent flow of energy and information in the brain, the mind, and relationships" (p. 137). CA refers to this harmonious state as *being in tune*, where all three building blocks are integrated and balanced (Orr et al., 2024), enabling clients to develop a vital and resilient sense of self.

Siegel's (2009) concept of internal attunement aligns with CA's practice of *tuning*—a technique rooted in the mindfulness concept of self-regulation of attention (Cavicchioli et al., 2018). This practice involves focusing on thoughts, sensations, and external senses, and intentionally shifting attention among them (Turcotte et al., 2023). Tuning systematically enhances clients' self-regulation and awareness across all three building blocks by guiding them to shift focus from mental images to external objects or sensations (Orr et al., 2024). While CA draws on Siegel's (2009) concept of internal attunement, it extends beyond this by offering a structured framework that emphasizes a more explicit and intentional engagement with the three building blocks. This integration of the building blocks through tuning is consistent with Siegel's (2009) statement: "The integration of consciousness involves the linkage of differentiated aspects of attention into a state of mindful awareness in the moment" (p. 167).

Treatment Phases

CA has two phases of treatment: the Resourcing Phase and the Reconstruction Phase (Orr et al., 2024). In the Resourcing Phase, the counselor helps the client develop awareness of all three building blocks and tune between them, allowing the client to see in their direct experience how these building blocks construct their reality. Counselors also identify the client's orientation and implement resources based on the client's specific needs, usually resources that promote the building blocks that are less developed. In the Resourcing Phase, clients learn not only to bring awareness to the three building blocks but also to shift or *tune* awareness between the three building blocks.

The Reconstruction Phase focuses on processing traumatic and disturbing memories (Orr et al., 2024). CA practitioners guide clients through a scripted method called *Memory Reconstruction* to process and update the disturbing material by repeatedly tuning awareness from a mental image to sensations arising in the body and external sense perceptions. Memory Reconstruction is informed by the empirical study of memory

reconsolidation (Ecker & Vaz, 2022; Nader et al., 2000) and mindfulness (Kabat-Zinn, 2013).

Method

For the remainder of this paper, "Client" will be used to identify the participant, and "Counselor" will be used to identify the interventionist and principal investigator (PI) of the present study. This section includes information about the Client, the Counselor, the chief investigator (CI), the Client's diagnoses, the measures used, and the research design.

Participant

The Client was referred to the study by a therapist not trained in CA or other trauma-focused approaches. The referring therapist had diagnosed the Client with CPTSD and PGD. The referring therapist also noted that despite employing CBT and narrative therapy for eight months, the Client's trauma and grief symptoms showed no improvement. Before working with the Counselor, the Client had never received CA or any other trauma-focused therapy that could have influenced the results of this study. Details about the Client's life were sufficiently modified in this paper to obscure her identity following section G.4.d of the American Counseling Association (ACA; 2014) Code of Ethics. Also, the Client reviewed the completed manuscript and agreed to its publication.

Investigators

The Counselor, the PI, is a licensed professional counselor (LPC) with approximately ten years of experience in private practice. He holds a master's degree in clinical mental health counseling and is a doctoral student in counselor education and supervision. The Counselor is the creator of CA and is also trained in EMDR, as well as somatic and mindfulness approaches. As the PI, he oversaw the development, conducting, reporting, and ethical supervision of the study.

The co-author was the CI. He holds a Ph.D. in counseling and is a counseling professor with approximately 35 years of experience. The CI was not trained in CA nor involved in administering the study's assessments or interventions, which allowed him to control for bias and threats to validity, given that the PI was the creator of CA and interventionist of the study. As the CI, he provided consultation and oversight to ensure the ethical development, implementation, and reporting of the study. Additionally, peer debriefing sessions were also conducted regularly to discuss findings and interpretations, helping to mitigate subjective influences on the study's outcomes.

Diagnoses

The Client was initially diagnosed with CPTSD and PGD, by her referring therapist. Before starting treatment, the Counselor and the Client met for an intake session, where the Client detailed a history of prolonged childhood sexual abuse from a family member. She further conveyed that the family member who abused her had taken their own life around ten years prior, leading to persistent and debilitating experiences of grief, guilt, shame, and anxiety. To verify the referring therapist's diagnoses, the Counselor and the Client reviewed the World Health Organization's (WHO; 2019) eleventh revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-11) criteria for CPTSD. They also reviewed the Diagnostic and Statistical Manual for Mental Disorder-Fifth Edition-Text Revised (DSM-5-TR; American Psychiatric Association, 2022) criteria for PGD and found the diagnoses appropriate. Additionally, her baseline scores on the Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5; Weathers et al., 2013) and the Inventory of

Complicated Grief (ICG; Prigerson et al., 1995) confirmed these diagnoses.

Complex Posttraumatic Stress Disorder

The ICD-11 (WHO, 2019) recognized a diagnosis, CPTSD, distinct from posttraumatic stress disorder (PTSD), which describes the more complex symptoms associated with exposure to persistent, repeated, and prolonged trauma. CPTSD includes the three core clusters of PTSD (re-experiencing the traumatic event in the present, avoidance of traumatic reminders, and a sense of current threat), as well as three additional symptom clusters related to disturbance of self-organization (dysregulated affect, negative self-affect, and disturbed relationships). Whereas PTSD generally follows a circumscribed traumatic event, CPSTD includes exposure to sustained interpersonal trauma (Perkonigg et al., 2016), such as torture, prolonged domestic abuse, and repeated childhood physical and sexual abuse (Cloitre et al., 2014; Hyland et al., 2017; World Health Organization, 2019).

Prolonged Grief Disorder

PGD was introduced to the DSM-5-TR in March 2022. Including PGD provides counselors with a diagnostic standard to differentiate between acute and persistent, debilitating grief. PGD often occurs comorbid with other mental health disorders like PTSD, anxiety disorders, and depressive disorders (Szuhany et al., 2021). For a diagnosis of PGD, a minimum of one year must pass since the death of the loved one for adults and six months for children (American Psychiatric Association, 2022). Additionally, the grieving client must have experienced at least three of the following symptoms nearly every day for at least the last month: (a) identity disruption; (b) marked sense of disbelief about the death; (c) avoidance of reminders that the person is dead; (d) intense emotional pain related to the death; (e) difficulty with reintegration; (f) emotional numbness, (g) feeling that life is meaningless; and (h) intense loneliness.

Measures

Two self-report measures were used in this study. We used the PCL-5 (Weathers et al., 2013) to measure Client's trauma symptoms. We also used the ICG (Prigerson et al., 1995) to measure her grief.

Posttraumatic Stress Disorder Checklist for DSM-5

The PCL-5 (Weathers et al., 2013) is a 20-item revised version of the Posttraumatic Stress Disorder Checklist (PCL; Weathers et al., 1993). The assessment measures the 20 symptoms of PTSD according to the Diagnostic and Statistical Manual for Mental Disorders-Fifth Edition (DSM-5; American Psychiatric Association, 2013). The PCL-5 is used to monitor trauma symptoms during and after treatment, screen mental health clients for PTSD, and assist in making a provisional PTSD diagnosis in conjunction with clinical interviewing (Bovin et al., 2017). However, it should be noted that the PCL-5 has not been updated to reflect the changes made in the DSM-5-TR.

We selected the PCL-5 because of its strong psychometric properties compared to newer assessments that specifically measured CPTSD. Given that CPTSD is a new diagnosis, Seiler et al. (2023) stated that CPTSD assessments may require further research to ensure that such assessments accurately detect and diagnose CPTSD. Therefore, we chose to proceed with the PCL-5 as a more established measure. Additionally, the PCL-5 instructions allow researchers to measure symptoms within the past week rather than the past month. This adaptation best fit our research method, given that the Client provided weekly measures.

Bovin et al. (2017) tested the psychometric properties of the PCL-5 and found the test-retest correlations for three groups were r = .84, .86, and .82. The total Cronbach's alpha for the 20 items was .96, indicating excellent internal reliability. They also found excellent convergent and discriminant validity. Respondents rate how bothered they have been by each item in the past week, using a five-point Likert scale (0 = not at all, 1 = a little bit, 2 = moderately, 3 = quite a bit, 4 = extremely) with a 0-80 range. A score of 31 is optimally efficient for diagnosing PTSD (Bovin et al., 2017).

Inventory of Complicated Grief

The ICG (Prigerson et al., 1995) is an instrument commonly used in research to assess clinical levels of PGD symptoms (Jordan & Litz, 2014). It consists of 19 items associated with grief-related thoughts and behaviors. Respondents rate their level of disturbance on a five-point Likert scale (0 = never, 1 = rarely, 2 = sometimes, 3 = often, 4 = always) with a range of 0-76. A score above 25 is considered suggestive of a PGD diagnosis. Prigerson et al. (1995) reported good internal consistency (Cronbach's α = .94), concurrent validity, and test-retest reliability.

Research Design

This single-case research study used an ABA time series design (Sheperis, 2016) to measure the rate of trauma and grief symptoms (dependent variables) throughout CA treatment (independent variable), where behavior was measured during a baseline phase (A_1), again during the intervention (B), and finally after the intervention was withdrawn to observe if symptoms returned to baseline (A_2). We followed the ACA (2014) Code of Ethics Section G: Research and Publication and principles of The Belmont Report (U.S. Department of Health and Human Services, National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979) in the design and execution of the study. We also received Institutional Review Board (IRB) approval from the Pentecostal Theological Seminary before collecting data to confirm that the study met national and international guidelines for research on humans. The Client signed an informed consent document before collecting data and gave verbal consent before treatment. Other ethical considerations included determining that the Client did not qualify as a member of a vulnerable population according to Sussman and Sinclair (2022) and limiting personal data pursuant to section G of the ACA (2014) Code of Ethics. Additionally, journal article reporting standards for quantitative research (JARS-Quant; Appelbaum et al., 2018) were used to guide reporting.

We selected some design procedures a priori, while others were based on the data. At the onset of the study, we selected the dependent and independent variables and the PCL-5 and ICG as the instruments. We also decided that each individual counseling session would be approximately 50 minutes long and occur in a virtual private practice setting. We collected data using Google Forms, and data were stored on a HIPAA-compliant Google Drive. For Phase B, data collection occurred weekly on the mornings of each session rather than shortly after each session to ensure that the Client rated her experience of the whole week leading up to the sessions. Rating before each session also prevented threats to validity that could have occurred if she had rated how she felt immediately after sessions. To analyze the time-series data, we selected the percentage of nonoverlapping data (PND; Scruggs & Mastropieri, 1998) procedure to calculate PND effect size and p values (Tarlow & Penland, 2016b). The cutoff for determining significance was $p < .05$.

A benefit of single-case designs is their flexibility, allowing researchers to refine research components based on incoming data (Fisher et al., 2022). We tentatively decided ahead of time that the study would be at least an AB design but allowed the data to determine the need for more phases. Also, we allowed the data and the Client's needs and availability to determine the number of measures in each phase.

Although visual analysis of the baseline measures appeared unstable, the Client's baseline scores met Neuman and McCormick's (1995) minimum standard for within-phase stability. The *stability criterion* is satisfied if at least 80% of the data in the phase fall within a 15% range of the median of all data points. Inspection of the baseline measures for the PCL-5 and ICG found that four out of five (80%) of the measures were within range. Additionally, the Client's referring therapist reported that the Client demonstrated a pattern of emotional instability from session to session during the eight months they worked together. We saw this pattern reflected in the baseline measures and predicted that a visually stable baseline was unlikely. Therefore, we decided to proceed with treatment after five baseline measures, considering the phase met Neumann and McCormick's (1995) standard.

Phase B consisted of 12 sessions. Sessions B1 to B7 focused on CA psychoeducation and resourcing. The Counselor introduced the three principles of CA and identified the Client as Externally Oriented using interview techniques utilized by CA therapists. The Client resonated with this identification, as she put the needs of others first and regulated others to regulate herself. Over the course of seven sessions, the Client learned new ways of connecting with the three building blocks to understand and regulate herself. During this time, she also learned to tune, or shift, her awareness between building blocks—thoughts, sensations, and external senses—which helped her experience the different parts of herself more clearly and holistically.

From session B8 until B11, the Client and the Counselor used the Memory Reconstruction intervention to process three memories. During this intervention, the Counselor employed *tuning techniques*—adaptations of CA resources designed to enhance the process and maintain the participant's presence (Orr et al., 2024). These techniques are similar to EMDR's cognitive interweaves (Shapiro, 2017). During Memory Reconstruction, the Counselor guided the Client in tuning until she experienced no bodily disturbance when visualizing the reprocessed memory—a state CA refers to as *mind/body agreement* (Orr et al., 2024). By session B12, the Client reported having met her treatment goals. After discussion, the Client and the Counselor agreed to terminate treatment. In the final session, they reviewed the ICD-11 diagnostic criteria for CPTSD and DSM-5-TR criteria for PGD, confirming she no longer met the criteria for either, as validated by her PCL-5 and ICG scores at the end of Phase B.

After reviewing the results of the AB design, we believed the two phases painted an incomplete picture of CA's long-term effect and posed a potential threat to validity, which led us to ask the Client to provide additional baseline measures (Phase A_2). After a three-month follow-up period, we gathered three additional baseline measures that achieved stability. The follow-up allowed time for any temporary effects of CA to wane, acted as a control for validity threats, and provided information about CA's long-term effects.

In the end, we collected 20 weekly measures over three phases. The Client provided five

initial baseline data points during Phase A_1. We collected twelve treatment phase data points during Phase B while the Client worked exclusively with the Counselor using CA. Finally, the Client provided an additional three follow-up measures during Phase A_2.

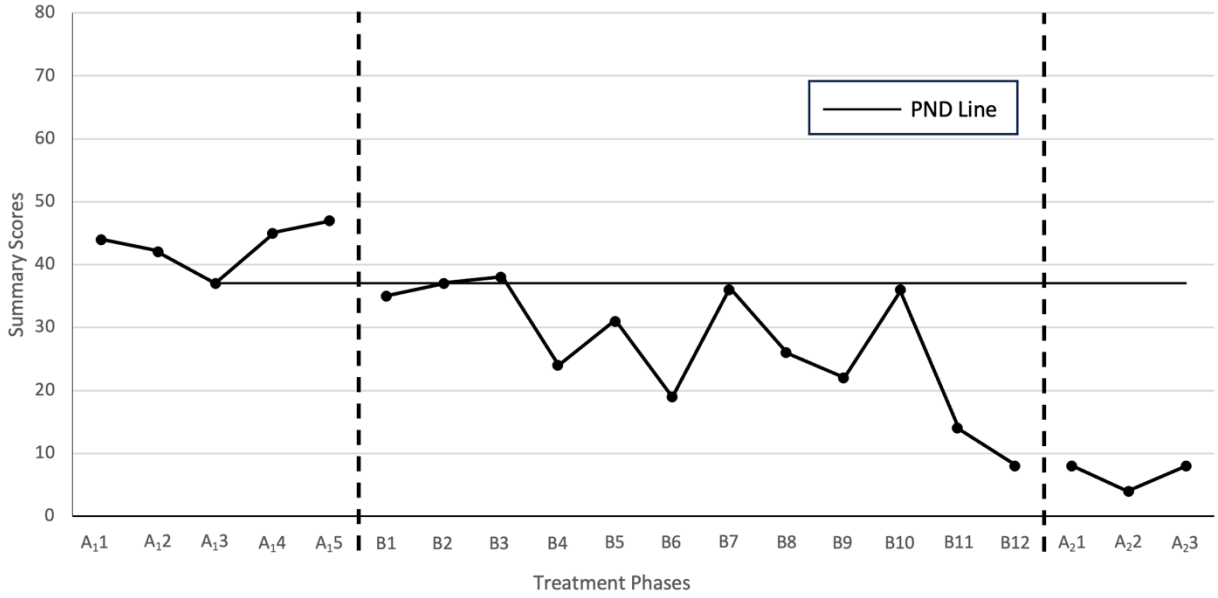
Results

In this study, we used two assessments, i.e., the PCL-5 (Weathers et al., 2013) and the ICG (Prigerson et al., 1995), to measure trauma and grief symptoms with a single client diagnosed with CPTSD and PGD. We selected PND (Scruggs & Mastropieri, 1998) because it is a widely used statistic for effect size measurement of single-case time-series designs (Tarlow & Penland, 2016a). For an ABA single-case study design, PND scores range from 0% to 100%, with greater nonoverlap indicating a greater treatment effect size (Tarlow & Penland, 2016a). We calculated PND scores and *p* values using Tarlow and Penland's (2016b) PND calculator, which divided the number of nonoverlapping treatment phase scores by the total scores in the treatment phase. Given that lower PCL-5 and ICG scores indicate decreases in symptomology, we determined nonoverlapping treatment phase scores by choosing items that were less than the minimum scores in the baseline phase. For the remainder of the paper, we used the lowest baseline scores instead of the highest when comparing Phase A_1 to Phases B and A_2 to remain consistent with the PND model and to resist inflating the results.

Analysis revealed that the PCL-5 Phase A_1 scores fluctuated, within ten points, with the highest being 47 and the lowest 37. The Client's score decreased by 12 points after the first treatment session (B1) and remained steady before decreasing by 11 points at measure B4. PCL-5 scores fluctuated until B10 when the Client's score dropped to 14 at B11 and 8 at B12. Her scores decreased from 37 at $A_1$3 (the baseline nonoverlapping measure) to 8 at B12. This 29-point reduction out of a range of 80 indicated a 36% decrease in symptomology. The

Figure 1

PCL-5 Percentage of Nonoverlapping Data



Note. $n = 1$

PCL-5's Phase B PND effect size was calculated at 83.33% (p = 0.0034). Additionally, the Client PCL-5 scores decreased from 37 at $A_1$3 to 8 at $A_2$1, representing a 36% decrease in trauma symptoms. The PCL-5's Phase A_2 PND effect size was 100% (p = 0.0111). See Figure 1 for the PCL-5 time-series results and PND analysis.

An ICG baseline was established in Phase A_1 across five measures, with the highest being 33 and the lowest 27. The Client's score decreased by seven points after B1 and fluctuated as it declined to a final score of 14 at B12. The Client's scores decreased by 13 points from 27 at $A_1$2 (the baseline nonoverlapping measure) to 14 at B12. This 13-point reduction out of a range of 76 indicated a 17% decrease in grief symptoms. The ICG Phase B PND effect score was calculated at 91.67 (p = 0.0007). Additionally, the Client ICG scores decreased from 27 at $A_1$2 to 5 at $A_2$1, representing a 29% decrease in grief symptoms. The ICG's Phase A_2 PND effect size was 100% (p = 0.0111). See Figure 2 for the ICG time-series results and PND analysis.

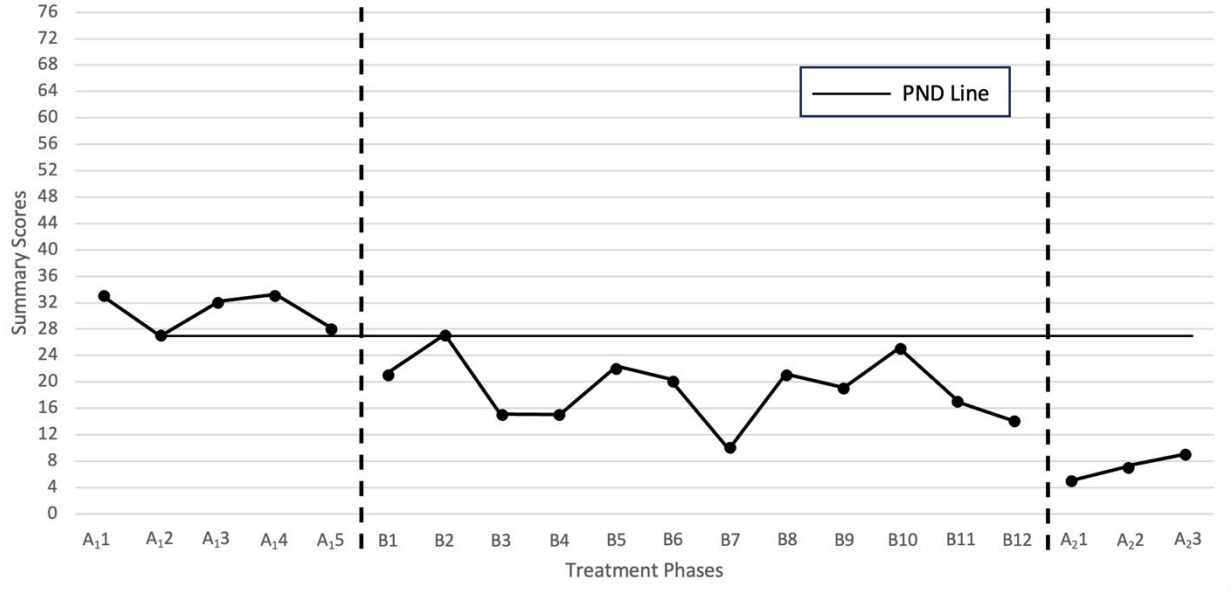
Discussion

This single-case ABA time-series design aimed to introduce CA, a mindfulness-based trauma therapy, and test its effectiveness as a treatment for an individual diagnosed with CPTSD and PGD. We used the PCL-5 and ICG to measure changes in the Client's symptomology across three phases using the PND (Scruggs & Mastropieri, 1998) procedure to calculate effect size and p values. In this study, we explored two research questions. 1) How effective is CA over time as a treatment for a single client with CPTSD? 2) How effective is CA over time as a treatment for a single client with PGD?

The PCL-5 and ICG data over 12 treatment measures in Phase B and three baseline measures in Phase A_2 reveal statistically and

Figure 2

ICG Percentage of Nonoverlapping Data



Note. n = 1

meaningfully significant decreases in symptomology. According to the guidelines created by Scruggs and Mastropieri (1998), the PCL-5's Phase B PND score of 83.33% (p = 0.0034) indicates effective treatment, and the ICG's Phase B PND score of 91.67 (p = 0.0007) is considered very effective. Additionally, Phase A_2 PCL-5 and ICG PND scores of 100% (p = 0.0111) are considered very effective.

Visual inspection shows an adequate trend and level throughout Phase B, though stability was interrupted by symptom increases at B7 and B10. These spikes in symptomology appear to be linked to specific triggers. For example, the B7 measure occurred after the Client reported a negative interaction with her son, and the B10 measure rose in anticipation of reprocessing a distressing childhood sexual abuse memory. These instances highlight how triggers can temporarily heighten emotional responses. Despite these increases, the Client showed reductions in symptomology in the weeks following these sessions, and measures B7 and B10 do not fall above the nonoverlapping lines.

A premise of ABA designs is often that the target problem should worsen when the intervention is withdrawn (Engel & Schutt, 2014). However, this premise is problematic in counseling research, as the point of an intervention is to reduce the target problem and for the effect of the intervention to be experienced long after the client has stopped treatment (Engel & Schutt, 2014). The Client's PCL-5 measures of 8 at B12 and 8 at A_21 show that CA's effect on trauma symptoms continued to hold after a three-month follow-up period. Her ICG measure of 14 at B12 and 5 at A_21 show that CA's effect decreased grief symptoms after the three-month follow-up period. For both measures, CA's effect appears to persist after treatment. Given that such persistence is desirable, we interpret the carryover effect from Phase B to Phase A_2 as an indicator of successful treatment. We also see stable PCL-5 and ICG measures in phase A_2, indicating that CA's effect not only continued to hold after three months but also stabilized.

Additionally, the Client's B12 and Phase A_2 PCL-5 and ICG scores were below the recommended diagnostic cutoffs, as recommended by Bovin et al. (2017) and Prigerson et al. (1995). Bovin et al. (2017) recommend that PCL-5 scores above 31 are optimally efficient for diagnosing PTSD. The Client's lowest Phase A_1 score was 37, supporting her initial CPTSD diagnosis. Her final Phase B score was 8, and her initial Phase A_2 score was 8, both well below the threshold set by Bovin et al. (2017). These reductions in scores support our conclusion that she did not meet the ICD-11 criteria for CPTSD at the end of Phases B and A_2. Prigerson et al. (1995) recommend that an ICG score above 25 suggests PGD. The Client's lowest ICG baseline score was 27, which supported her initial PGD diagnosis. Her scores at B12 (14) and A_21 (5) were below those suggested by Prigerson et al. (1995) and support her not meeting the DSM-5-TR criteria for PGD at the end of treatment.

In conclusion, this single case study aimed to explore and provide preliminary information about the clinical efficacy of CA as a treatment for a client who met the ICD-11 criteria for CPTSD and DSM-5-TR criteria for PGD. The significance of the PND data effectively answers both research questions and shows that CA was an effective treatment, according to Scruggs and Mastropieri (1998), for the client under study. The Client's Phases B and A_2 PCL-5 and ICG scores and the Counselor's diagnostic interview, which confirmed she no longer met the criteria for CPTSD and PGD, support the current findings. Though no single-case example is generalizable to the larger population, the

present study shows CA's promise as a clinically effective treatment for CPTSD and PGD.

Limitations and Future Research Directions

The most obvious limitation of the present study is its measurement of a single participant. The Client's experience is not universal. Thus, further studies with larger samples are warranted to generalize our findings. Another limitation is focusing on only two diagnoses (i.e., CPTSD and PGD). Other diagnoses should be explored in future research.

While counseling researchers commonly use self-report measures for data collection, given their ease of use in single-case designs and other experimental and quasi-experimental designs, we acknowledge the possibility of self-report bias that arises when researchers exclusively use self-report measures (Bauhoff, 2014). Given that she was Externally Oriented and prone to focusing more on the needs of others, the Client may have reported favorably to please the Counselor. However, the Client's successful completion of the treatment phase and the Counselor's diagnostic interview and clinical observations offered some support that the Client's reports were sincere. Regardless, we understand the limitations of self-report questionnaires to paint an accurate picture of the Client's experience. We recommend future quantitative and qualitative research that uses observational methods and imaging techniques to better understand the mechanisms that lead to change during CA resourcing and reconstructing.

Another limitation exists in that both the Client and the Counselor were White, heterosexual, middle-class, cis-gendered, and able-bodied. This limitation raises questions about CA's applicability to other demographic populations. Future research should explore CA's cultural limitations and biases. Significant differences exist in the ways individuals experience trauma, especially among populations that do not share a Eurocentric and Western perspective (Engelbrecht & Jobson, 2016). Though CA theorizes that all people construct reality using the three building blocks, future research is needed to support this claim.

Finally, while this paper presents CA as an intervention, it is important to recognize that CA is more than just a technique. CA is a comprehensive therapeutic model that provides a philosophy and methods of conducting therapy. CA is grounded in fundamental principles, concepts, and assumptions about how individuals develop, function, and experience distress. These principles guide counselors in understanding client issues and selecting appropriate interventions. Additionally, CA offers a broad framework for understanding human behavior, personality development, the role of emotions, and mechanisms of change in therapy. However, many of these elements fall outside the scope of this single-case study, and further research is needed to establish and validate CA as a fully developed theoretical model.

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