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CLINICAL RESEARCH ARTICLE

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Ketamine Assisted EMDR Therapy™ for PTSD: investigating the synergistic effects of pharmacotherapy and psychotherapy

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ABSTRACT

Background: Posttraumatic stress disorder (PTSD) is associated with maladaptive memory reconsolidation and overgeneralized fear responses. EMDR therapy promotes trauma reprocessing by activating the brain's intrinsic memory reconsolidation mechanism, facilitating memory updating, and abandoning outdated emotional schemas. Ketamine may also facilitate adaptive updating of traumatic memory due to its neurobiological and subjective effects. Research remains limited on the combined effects of EMDR therapy and ketamine for PTSD. Ketamine Assisted EMDR Therapy™ (KA-EMDR) integrates low-dose sublingual ketamine with EMDR memory reprocessing, providing a potentially synergistic trauma treatment by improving memory access, reducing hyperarousal, and enhancing adaptive reconsolidation of fear-based memories.

Objective: To examine whether incorporating low-dose sublingual ketamine into EMDR therapy reduces PTSD symptom severity and functional impairment in individuals with PTSD.

Methods: A retrospective clinical chart review examined data collected from eight clients with PTSD in a private psychotherapy practice who received KA-EMDR. Sublingual ketamine (37.5–75 mg) was self-administered during EMDR reprocessing after memory activation. The International Trauma Questionnaire (ITQ) assessed PTSD symptoms and functional impairment at baseline and after four KA-EMDR reprocessing sessions (T1). Paired-samples t-tests analysed symptom changes. Clients also completed a subjective experience questionnaire.

Results: PTSD symptom scores significantly decreased from baseline ($M = 15.50$, SD = 2.98) to T1 ($M = 9.88$, SD = 4.94), $t(7) = 3.21$, $p < .05$, with a large effect size ($g = 1.01$). Functional impairment scores significantly declined from baseline ($M = 8.50$, SD = 2.78) to TI ($M = 5.25$, SD = 3.24), $t(7) = 2.60$, $p < .05$, with a large effect size $g = 0.82$. Clients reported reduced fear, increased self-compassion and emotional clarity, less resistance, and minimal adverse effects.

Conclusions: KA-EMDR may be a promising treatment for PTSD, particularly for those with treatment-resistant trauma. Larger randomized controlled studies are needed to confirm these findings.

Terapia EMDR asistida con Ketamina™ para el TEPT: investigación de los efectos sinérgicos de la farmacoterapia y psicoterapia

Antecedentes: El Trastorno de Estrés Postraumático (TEPT) se asocia con una reconsolidación desadaptativa de las memorias y respuestas de miedo sobregeneralizadas. La terapia EMDR promueve el reprocesamiento del trauma activando el mecanismo intrínseco de reconsolidación de la memoria del cerebro, lo que facilita la actualización de la memoriay el abandono de esquemas emocionales obsoletos. La ketamina interrumpe la reestabilizacion de las memorias basadas en el miedo, creando una ventana para modificar las memorias perturbadoras antes de la reconsolidacion. Las investigaciónes sobre los efectos combinados de la terapia EMDR y ketamina para el TEPT sigue siendo limitada. La Terapia EMDR Asistida con Ketamina™ (KA-EMDR por sus siglas en inglés) integra ketamina sublingual en dosis bajas con reprocesamiento de la memoria a través de EMDR, lo que proporciona un tratamiento potencialmente sinérgico para el tratamiento del trauma al mejorar el acceso a las memorias, reducir la hiperactivación y mejorar la reconsolidación adaptativa de las memorias basadas en el miedo.

Objetivo: Examinar si al incorporar ketamina sublingual en dosis bajas a la terapia EMDR reduce la gravedad de los síntomas de TEPT y el deterioro funcional en personas con TEPT.

Métodos: Se realizó una revisión retrospectiva de las historias clínicas para examinar los datos recopilados de ocho pacientes con TEPT en una consulta privada de psicoterapia que recibieron KA-EMDR. La ketamina sublingual (37.5–75 mgrs) se autoadministró durante el reprocesamiento por EMDR tras la activación del recuerdo. El Cuestionario Internacional de Trauma (ITQ por sus siglas en inglés) evaluó los síntomas de TEPT y el deterioro funcional al inicio y después de cuatro sesiones de reprocesamiento KA-EMDR (T1). Se analizaron los cambios en los síntomas mediante pruebas de t para muestras pareadas. Los clientes también completaron un cuestionario de experiencia subjetiva.

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PALABRAS CLAVE

EMDR; TEPT; ketamina; psicoterapia asistida por ketamina; reconsolidación de memoria; trauma

HIGHLIGHTS

- Synergistic Approach to PTSD Treatment: the article explores how Ketamine Assisted EMDR Therapy™ (KA-EMDR) integrates low-dose (psycholytic) sublingual ketamine with EMDR therapy, leveraging ketamine's neurobiological and subjective effects to enhance trauma memory reprocessing during EMDR therapy.
- Mechanisms of Action: it explains how EMDR facilitates adaptive memory reconsolidation and how ketamine enhances neuroplasticity, potentially facilitating the adaptive updating of traumatic memories during reconsolidation when paired with EMDR therapy.
- Clinical Findings & Future Directions: a retrospective chart review of eight clients with PTSD suggests KA-EMDR significantly reduces PTSD symptoms and functional impairment, supporting the need for larger randomized controlled studies to confirm its effectiveness.

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Resultados: La puntuación de síntomas de TEPT disminuyó significativamente desde el inicio (M = 15.50, DE = 2.98) hasta T1 (M = 9.88, DE = 4.94), $t(7) = 3.21$, $p < 0.05$, con un tamaño del efecto grande ($g = 1.01$). Las puntuaciones de deterioro funcional disminuyeron significativamente desde el inicio (M = 8.50, DE = 2.78) hasta T1 (M = 5.25, DE = 3.24), $t(7) = 2.60$, $p < 0.05$, con un tamaño del efecto grande ($g = 0.82$). Los clientes reportaron una reducción del miedo, un aumento de la autocompasión y la claridad emocional, una menor resistencia y efectos adversos mínimos.
Conclusiones: La KA-EMDR puede ser un tratamiento promisorio para el TEPT, particularmente para quienes presentan trauma resistente al tratamiento. Se necesitan estudios controlados aleatorizados mas grandes para confirmar estos hallazgos.

1. Introduction

1.1. Background on PTSD

Posttraumatic stress disorder (PTSD) is a severe and debilitating mental health condition that can arise after experiencing traumatic events. It is marked by symptoms such as intrusive memories, avoidance of trauma-related triggers, negative shifts in mood and cognition, and heightened arousal and reactivity (American Psychiatric Association, 2013). The complex nature of PTSD and its significant impact on individuals and communities underscore the importance of continued research into its prevalence, underlying mechanisms, and effective treatments.

Continued research and interdisciplinary collaboration are paramount to addressing the unmet needs that remain in PTSD care.

1.2. Current PTSD treatment landscape

Treatment approaches for PTSD encompass both psychological and pharmacological interventions. Among psychological treatments, trauma-focused cognitive behavioural therapy (TF-CBT), exposure therapy, and Eye Movement Desensitization and Reprocessing (EMDR) are the most evidence-based (Bisson et al., 2013; Schnyder et al., 2015). EMDR therapy has demonstrated effectiveness in reducing PTSD symptoms by facilitating the processing and integration of traumatic memories, which reduces emotional and physiological reactivity while fostering more adaptive beliefs. Its mechanisms of action may involve enhancing memory reconsolidation processes, reducing emotional arousal, and normalizing neural activity in areas such as the amygdala and prefrontal cortex, as shown in functional MRI studies (Novo Navarro et al., 2018; Rousseau et al., 2019). Advances in psychotherapy have also explored the role of self-relatedness and identity reconstruction in alleviating PTSD symptoms, with research highlighting the involvement of the default mode network (DMN) (Ho et al., 2017; Lanius et al., 2020).

Pharmacological treatments, though widely used, face challenges in achieving optimal outcomes. Current options include selective serotonin reuptake inhibitors (SSRIs) and serotonin- norepinephrine reuptake inhibitors (SNRIs), which provide modest symptom relief. The need for novel pharmacological strategies has been emphasized due to limitations in efficacy and tolerability of existing medications (Kelmendi et al., 2017). Emerging therapies, such as ketamine and MDMA-assisted psychotherapy, hold promise but require further empirical validation.

1.3. EMDR therapy and memory reconsolidation

EMDR therapy has been shown to effectively address PTSD by facilitating the reprocessing and adaptive integration of traumatic memories (Shapiro, 2018). Francine Shapiro, the creator of EMDR therapy, acknowledged that memory reconsolidation is an important mechanism in EMDR therapy (Shapiro, 2018). Ecker and Bridges (2020) describe memory reconsolidation (MR), a process first identified between 1997 and 2000, as an intrinsic brain mechanism by which new experiences actively modify previously stored memories. This updating not only alters subjective experience but also changes the underlying neural patterns. They argue that the key to therapeutic change lies in addressing the deep-seated emotional learning underlying specific symptoms – a long-formed mental model or schema acquired during intense emotional events that continues to influence behaviour outside of conscious awareness. By disrupting and reconfiguring this entrenched schema through MR, the root of personal emotional distress can be effectively resolved. Ecker et al. (2023) further elaborate that EMDR therapy achieves this goal by utilizing what they refer to as the therapeutic reconsolidation process (TRP). Memory reconsolidation can help to reduce PTSD symptoms by modifying and integrating traumatic memories, and reducing their emotional impact. When traumatic memories are properly reprocessed, they no longer trigger the same distressing reactions, and can become part of a more balanced, integrated, and adaptive perspective on both past memories as well as present moment experiences (Shapiro, 2018).

1.4. Ketamine's neurobiological and subjective effects

Ketamine is a legal medication classified as a Schedule III drug in the United States and is used off-label for psychiatric conditions. Ketamine functions as an NMDA glutamate receptor antagonist, thereby increasing the availability of glutamate – the primary excitatory neurotransmitter in the brain (Krystal et al., 2024). Ketamine also reduces functional connectivity within the default mode network (DMN), which plays a key role in symptoms of PTSD (Lanius et al., 2020).

At low, psycholytic (sub-psychedelic) doses, ketamine also offers anxiolytic and empathogenic properties, promoting feelings of comfort and relaxation, compassion, empathy, and peace (Kolp et al., 2014). Ketamine has been described as having 'entactogen' effects, which may increase social connectedness (Hess et al., 2024). These subjective effects would theoretically support individuals undergoing trauma-focused psychotherapy by expanding the window of tolerance for processing difficult material.

1.5. Ketamine's therapeutic effects and role in memory reconsolidation

Ketamine has shown promise in influencing memory reconsolidation when employed strategically. Veen et al. (2018) suggested that ketamine shows promise as an adjunct to trauma-focused psychotherapy for PTSD. Research with individuals with PTSD indicates that ketamine, given after trauma memory retrieval and paired with subsequent trauma-focused psychotherapy, can create neural changes consistent with reconsolidation-based updating (Duek et al., 2023). However, caution must be taken with regards to the timing of the use of ketamine in relation to fear-based memories, as Honsberger et al. (2015) found that ketamine given to rats pre-activation of fear memory actually enhanced the fear memory.

Clinical evidence further supports the positive impact of ketamine on trauma symptoms. Feder et al. (2014) found that ketamine infusion produced a swift reduction in trauma symptom severity in patients with PTSD, indicating that combining ketamine with psychotherapeutic strategies aimed at facilitating memory reconsolidation may enhance treatment outcomes. A systematic review by Sicignano et al. (2024) investigated the effects of ketamine for PTSD and found significant reductions in PTSD scores and increased time to relapse, compared to control.

It is important to note that while some studies, such as Borgogna et al. (2024), indicate limited effectiveness of ketamine as a standalone treatment for PTSD, these investigations did not examine its use as a targeted adjunct to trauma-focused psychotherapy. This distinction suggests that combining ketamine with psychotherapeutic approaches, particularly those focused on memory reconsolidation like EMDR therapy, could harness synergistic mechanisms that more effectively mitigate trauma-related symptoms.

With an impressive safety profile documented over more than 50 years of research (Li & Vlisides, 2016), ketamine administered in controlled clinical settings, with adjunctive psychotherapy, appears to present minimal risks while offering significant therapeutic benefits (Averill et al., 2020).

1.6. Low-dose, or psycholytic, sublingual ketamine

Low-dose, or psycholytic, sublingual ketamine leverages the drug's neurobiological and subjective effects while minimizing adverse side effects typically associated with higher dissociative or psychedelic doses. Sublingual administration is particularly advantageous due to its noninvasive nature, ease of use (can be self-administered by a client in psychotherapy), and short half-life (Dutton et al., 2023).

Psycholytic therapy utilizes low doses of psychedelics to promote enhanced access to unconscious material with reduced defenses, preservation of ego functions, strengthened therapeutic alliance, incremental and sustainable change, and reduced risk of overwhelming experiences (Passie et al., 2022). This approach creates a conducive state for EMDR reprocessing by supporting dual awareness and encouraging emotional openness, cognitive flexibility, mental clarity, and an awareness of the safety of the therapeutic alliance. The use of lower dose ketamine in KA-EMDR may optimize EMDR therapy's effectiveness by maintaining the ability to target specific memory networks while ketamine is active in the client's system, potentially supporting deeper and more efficient trauma resolution.

The approach is both practical and accessible; the shorter, less intense sessions associated with psycholytic doses of ketamine make KA-EMDR treatment more cost-effective and easier to implement in clinical practice than adjunctive higher dose ketamine treatment. Additionally, low-dose ketamine is generally well-tolerated with minimal side effects, addressing common concerns about dissociation or loss of control (Veen et al., 2018). Integrating low-dose ketamine with EMDR therapy may provide a structured method for enhancing memory reconsolidation, expanding the window of tolerance, and accelerating trauma resolution, particularly for treatment-resistant PTSD cases.

1.7. Rationale for combining ketamine with EMDR

Due to ketamine's unique pharmacological properties and subjective effects, it could be an effective adjunct

to EMDR therapy. The KA-EMDR approach leverages ketamine's ability to enhance neuroplasticity and support the integration of corrective learning during EMDR reprocessing (Duek et al., 2023). Additionally, by decreasing activity in the default mode network (DMN), ketamine reduces persistent self-referential thought and mental chatter, creating a more receptive state that may help patients overcome common obstacles to engaging with trauma-related material during EMDR therapy, as well as allowing for the building of a more adaptive sense of self. Its glutamatergic modulation further enhances connectivity among critical brain regions and may reverse neurobiological changes linked to chronic stress disorders (Averill et al., 2020). At low doses, ketamine can create an open and calm emotional state that is ideal for reprocessing challenging material. Collectively, these effects lessen the emotional charge of traumatic memories, and create a more receptive neural and psychological state, potentially enhancing memory reconsolidation and improving therapeutic outcomes for individuals with chronic stress disorders.

1.8. Study objectives

The aim of this study was to assess the impact of incorporating low-dose sublingual ketamine into EMDR therapy for individuals diagnosed with PTSD, with a hypothesis of enhanced reprocessing of traumatic memories and improved treatment effectiveness.

2. Methods

2.1. Participants

This retrospective clinical chart review evaluated data collected from clients who received Ketamine Assisted EMDR Therapy™ (KA-EMDR) in a private psychotherapy practice in Washington, DC between June and November 2024. The review included all clients in the practice who met the following criteria: (a) met full PTSD criteria based on a completed baseline International Trauma Questionnaire (ITQ), (b) completed four KA-EMDR reprocessing sessions, and (c) completed another ITQ after four KA-EMDR reprocessing sessions. These data collection procedures were part of the primary clinician's standard of practice in evaluating client outcomes. No clients in the private practice meeting these criteria were excluded from this review.

2.2. Ketamine Assisted EMDR Therapy™ intervention

Treatment began with a comprehensive screening process. Initially, the therapist assessed each client for any psychological contraindications to EMDR therapy and ketamine use. If no contraindications were identified, the client was referred to a medical provider.

Prior to initiating Ketamine Assisted EMDR Therapy™, all clients underwent a comprehensive medical evaluation by a licensed medical provider to determine their suitability for ketamine treatment. Upon receiving medical clearance, clients were prescribed low-dose sublingual ketamine, which they self-administered during EMDR therapy sessions with the treating therapist. Therapy sessions were conducted weekly or bi-weekly, depending on each client's therapeutic needs and goals.

The intervention proceeded with the standard EMDR preparation. The therapist conducted history taking (EMDR Phase 1) sessions, during which target traumatic memories for reprocessing were collaboratively identified and developed into a treatment plan. During preparation (EMDR Phase 2) sessions, clients were assessed for their readiness to proceed with traumatic memory reprocessing and guided through skills to help them emotionally regulate during the process. Clients were also provided with psychoeducation about the Ketamine Assisted EMDR Therapy™ rationale and protocol.

To align with current neuroscience research on memory reconsolidation and pharmacologically enhanced trauma therapy, KA-EMDR reprocessing sessions followed a structured sequence designed to optimize the timing of ketamine administration relative to memory activation and EMDR reprocessing (Figure 1).

Each reprocessing session began with the clinician guiding the client in a brief target memory activation procedure (EMDR phase 3). This memory activation occurred prior to ketamine administration to ensure that the neural network was fully activated without being impacted by ketamine.

Following memory activation, clients self-administered a sublingual ketamine troche (37.5–75 mg). The troche was held under the tongue and 'swished' while it dissolved for approximately 10 min to allow for mucosal absorption before being expectorated. Initial ketamine doses were typically 50 mg, with minor adjustments (±12.5 mg). All dosing decisions were made by the prescribing medical provider prior to the EMDR session and documented in the clinical record. The average administered dose across clients was 56.25 mg.

EMDR Reprocessing began approximately 10 min after the client began self-administering ketamine, as subjective effects emerged, and continued throughout the peak ketamine window (Rolan et al., 2014). This timing allowed the intervention to take place during the hypothesized neuroplastic window in which reconsolidation mechanisms could be most effectively modulated.

Once the ketamine self-administration was complete, bilateral stimulation – via tapping and auditory

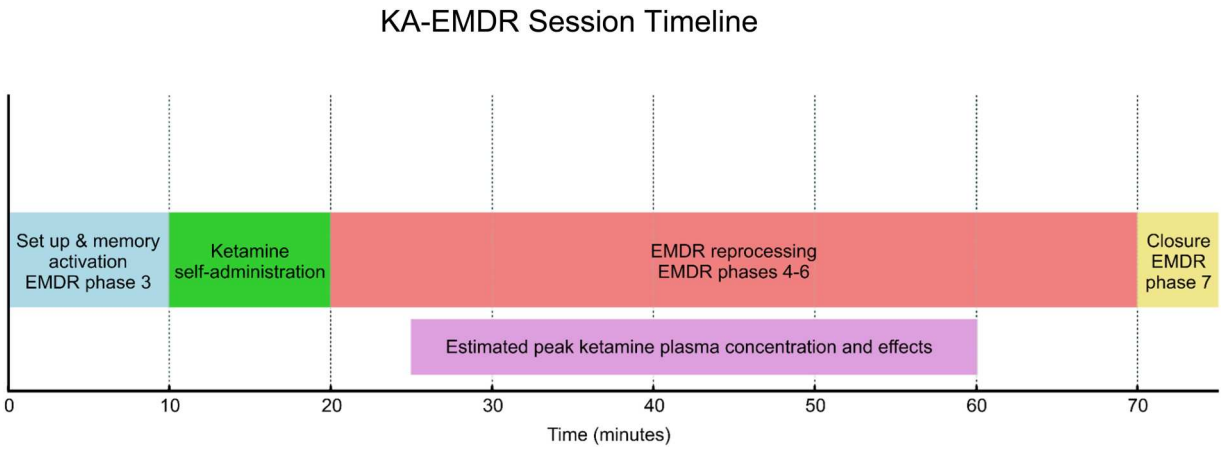

Figure 1. KA-EMDR session timeline.

tones – was introduced to begin the Desensitization phase (EMDR Phase 4). After completing the Desensitization phase, the client then completed the Installation (EMDR Phase 5), Body Scan (EMDR Phase 6), and Closure (EMDR Phase 7) phases, according to standard protocol, ensuring that the traumatic material was adequately addressed. The typical 75-minute session duration spanned both the rising and peak plasma concentrations of sublingual ketamine (Rolan et al., 2014), thereby maximizing the opportunity for memory reconsolidation and therapeutic integration during the theorized neurobiologically optimal window for change. Re-evaluation of the target memory (EMDR Phase 8) occurred at the beginning of the next session, when the client had returned to a normal state of consciousness.

2.3. Data collection

Demographic data was collected at the start of treatment, including age, gender, race/ethnicity, and prior experience with ketamine. PTSD symptom severity and PTSD functional impairment were collected via the ITQ at baseline and after four KA-EMDR reprocessing sessions (T1). Qualitative feedback was collected via a subjective treatment experience questionnaire that inquired about positive subjective effects as well as adverse effects, given after four KA-EMDR reprocessing sessions (T1).

2.4. Validity of the International Trauma Questionnaire (ITQ)

The ITQ is a self-report measure designed to assess symptoms of PTSD and complex PTSD (CPTSD) as defined by the ICD-11 framework (Cloitre et al., 2018). This framework aligns with contemporary understandings of trauma-related disorders, emphasizing simplicity and global applicability. Research has demonstrated that the ITQ reliably detects clinically significant changes in PTSD and CPTSD symptoms across various treatment contexts (Cloitre et al., 2021). Its psychometric properties include high internal consistency, strong construct validity, and sensitivity to treatment effects, making it a robust tool for monitoring symptom change over time. The ITQ also incorporates a measure of functional impairment, effectively linking symptom evaluation to real-world impact.

2.5. Data analysis

This study was reviewed by Sterling Institutional Review Board (IRB00001790) and determined to be exempt from formal ethics review under US federal regulation 45 CFR 46.104(d)(4), which permits the use of de-identified data in retrospective chart reviews without constituting human subjects research. Following IRB determination, de-identified data were obtained from a secure, HIPAA-compliant electronic health record system. All identifiable information was removed prior to analysis, ensuring confidentiality and data security.

Paired-samples t-tests were utilized for pre- and post- treatment comparisons of the ITQ data. Hedges g correction was used to determine effect size due to small sample size. SPSS software was used for quantitative analyses. Subjective experiences questionnaires were reviewed for each participant and summarized.

3. Results

3.1. Participant characteristics

The average age of participants was 41.4 years, with 87.5% identifying as female and 12.5% as male. The racial and ethnic composition included 75% White, 12.5% Asian, and 12.5% African American. None of the participants had prior experience with ketamine.

Table 1. Paired samples *t*-test statistics for the mean changes between baseline and post-treatment ($n = 8$).

	N	Baseline mean (SD)	Post-treatment mean (SD)	*t*	Sig.	Effect size (*g*)
ITQ PTSD total score	8	15.50 (2.98)	9.88 (4.94)	3.21	0.015	1.01
ITQ PTSD functional impairment score	8	8.50 (2.78)	5.25 (3.24)	3.21	0.035	0.82

3.2. Quantitative findings

PTSD total scores were statistically significantly reduced from baseline ($M = 15.50$, $SD = 2.98$) compared to T1 after the treatment ($M = 9.88$, $SD = 4.94$), $t(7) = 3.21$, $p < .05$ (Table 1, Figure 2). The effect size was large, $g = 1.01$ (Hedges' correction was utilized due to small sample size). PTSD functional impairment scores were statistically significantly reduced from baseline ($M = 8.50$, $SD = 2.78$) compared to T1 after the treatment ($M = 5.25$, $SD = 3.24$), $t(7) = 2.60$, $p < .05$ (Table 1, Figure 3). The effect size was large, $g = 0.82$.

3.3. Qualitative findings

Seven of the eight total clients completed a subjective experiences questionnaire. Clients subjectively reported that during KA-EMDR memory reprocessing sessions, they could process their traumatic memories with less fear. Clients expressed feeling more connected to their emotions with less resistance to difficult material. Comments highlighted improved emotional connection, reduced self-judgment, and a sense of safety. Minimal adverse effects were reported.

Clients endorsed the following positive subjective effects during the KA-EMDR memory reprocessing sessions: Compassion for others (6 out of 7 clients); clarity (6 out of 7 clients); self-compassion (5 out of 7 clients); relaxation (5 out of 7 clients); peacefulness (5 out of 7 clients); enhanced access to memory/traumatic material (4 out of 7 clients); expansiveness (4 out of 7 clients); mystical/spiritual experiences (4 out of 7 clients), feelings of love (4 out of 7 clients); joy (3 out of 7 clients), euphoria (2 out of 7 clients) (Table 2).

Clients endorsed the following adverse effects during or after the KA-EMDR memory reprocessing sessions: Wooziness/loopiness (5 out of 7 clients); numbness in the mouth or face (5 out of 7 clients); terrible taste in the mouth (4 out of 7 clients); tiredness/fatigue (4 out of 7 clients); heavy body feeling (3 out of 7 clients); blurred vision (3 out of 7 clients); dizziness/faintness (2 out of 7 clients); nausea (2 out of 7 clients); vivid dreams (2 out of 7 clients); dry mouth (1 out of 7 clients) (Table 3).

4. Discussion

4.1. Interpretation of results

This study aimed to explore the potential effectiveness of KA-EMDR for treating PTSD. The key findings demonstrate promising outcomes, including a statistically significant reduction in PTSD symptoms and functional impairment following the intervention. Ketamine, self-administered in low doses following memory activation, during the reconsolidation window, may enhance the efficacy of EMDR therapy and allow individuals to process traumatic memories with more ease. Clients reported favourable subjective experiences with minimal adverse effects. Previous

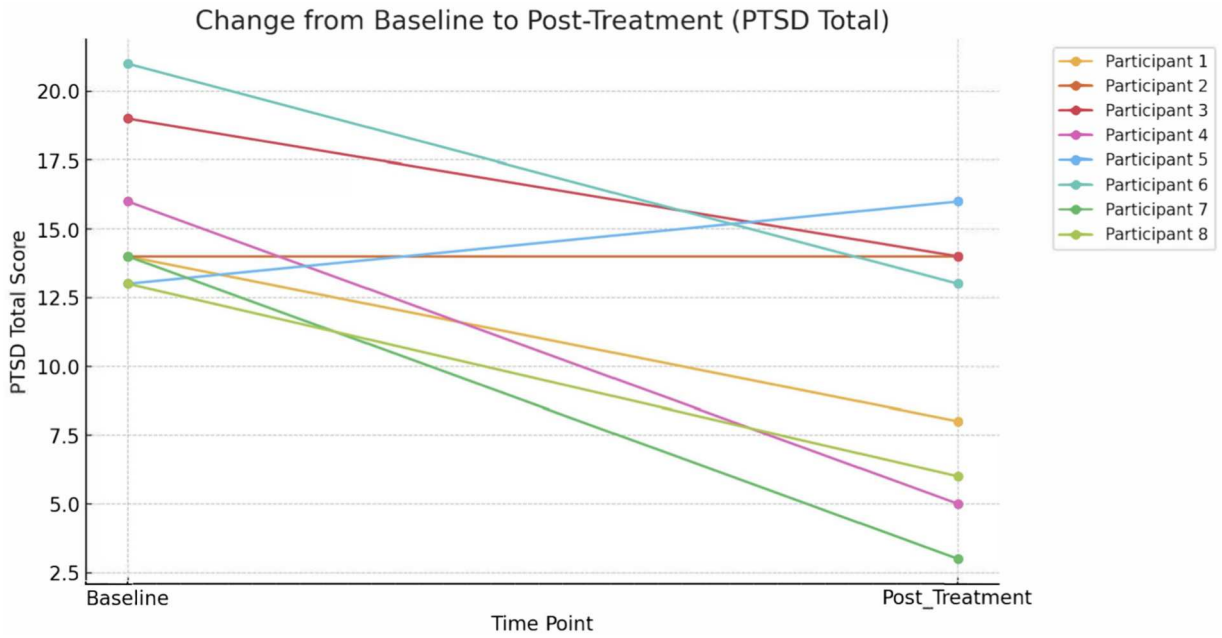

Figure 2. Effect of KA-EMDR on PTSD total score ($n = 8$).

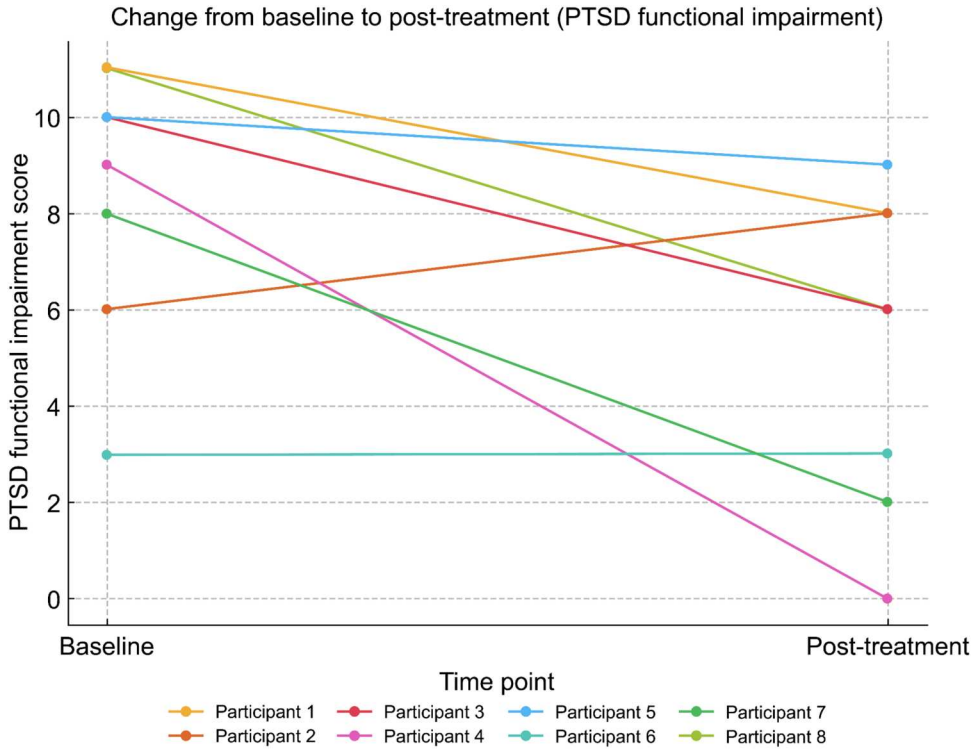

Figure 3. Effect of KA-EMDR on PTSD functional impairment (n = 8).

research offers strong support for the idea that combining ketamine with EMDR therapy may yield faster and more targeted relief of PTSD symptoms compared to existing standard treatments such as CBT or SSRIs.

Pharmacological treatments like selective serotonin reuptake inhibitors (SSRIs) are widely used as first-line interventions for PTSD, but often have limited efficacy, delayed onset, and high dropout rates (Hoskins et al., 2015). In a comprehensive review, Kelmendi et al. (2017) noted that while SSRIs can provide symptom relief, their effects are often modest, and many patients fail to achieve full remission. In contrast**,** Feder et al. (2014) found that a single intravenous ketamine infusion led to rapid and significant PTSD symptom reduction within 24 h, outperforming midazolam as an active placebo.

From a psychotherapeutic perspective, EMDR has demonstrated comparable or superior efficacy to CBT, often with faster symptom reduction and fewer sessions. In a meta-analysis comparing EMDR and CBT, Chen et al. (2015) found that EMDR was more effective at reducing PTSD symptoms, especially in early-phase treatment. Yunitri et al. (2023) further confirmed that EMDR significantly reduces PTSD symptoms and may outperform trauma-focused CBT (TF-CBT) in specific populations. Bisson et al. (2013) reached similar conclusions in their Cochrane review, noting both approaches are effective but EMDR may have advantages in terms of tolerability and speed of response.

Van der Kolk et al. (2007) conducted one of the only randomized controlled trials comparing a trauma-focused psychotherapy (EMDR) directly to a pharmacological treatment (fluoxetine). While both groups showed improvement by the end of treatment, EMDR led to significantly greater and more durable symptom reductions at six-month follow-up, including in measures of PTSD and depression. These findings support the notion that trauma-focused psychotherapies may offer more lasting benefits than pharmacologic approaches alone.

Table 2. Positive subjective effects during KA-EMDR sessions.

Positive effects	*N* (%)
Compassion for others	6 (85.7%)
Clarity	6 (85.7%)
Self-compassion	5 (71.4%)
Relaxation	5 (71.4%)
Peacefulness	5 (71.4%)
Enhanced access to memory/traumatic material	4 (57.1%)
Expansiveness	4 (57.1%)
Mystical/spiritual experiences	4 (57.1%)
Feelings of love	4 (57.1%)
Joy	3 (42.9%)
Euphoria	2 (28.6%)

Table 3. Adverse effects during or after KA-EMDR sessions.

Adverse effects	*N* (%)
Wooziness/Loopiness	5 (71.4%)
Numbness in the mouth or face	5 (71.4%)
Terrible taste in the mouth	4 (57.1%)
Tiredness/Fatigue	4 (57.1%)
Heavy body feeling	3 (42.9%)
Blurred vision	3 (42.9%)
Dizziness/Faintness	2 (28.6%)
Nausea	2 (28.6%)
Vivid dreams	2 (28.6%)
Dry mouth	1 (14.3%)

Taken together, these studies underscore the rationale for Ketamine Assisted EMDR Therapy™ (KA-EMDR) as possibly a more rapid, durable, and neurobiologically informed treatment that could potentially offer greater symptom relief than CBT or SSRIs alone. By combining ketamine's neuroplastic properties with EMDR's structured memory reprocessing, KA-EMDR may uniquely target both the neurobiological and psychological dimensions of trauma. Moreover, by potentially accelerating symptom resolution, KA-EMDR may reduce the total number of sessions required for effective treatment, which has meaningful implications not only for clinical outcomes but also for treatment accessibility, time investment, and overall cost – especially in a mental health system where prolonged care is often financially or logistically burdensome.

The study utilized real-world clinical data from a naturalistic treatment setting, providing insights into how KA-EMDR performs in practice. By integrating ketamine self-administration with EMDR therapy, the study offers a unique perspective on how pharmacological and psychotherapeutic interventions can be synergistically combined to enhance treatment outcomes.

5. Limitations

Despite its strengths, the study has multiple limitations that warrant consideration. The study design was retrospective, relying on previously collected data, which may introduce biases and limit the ability to establish causality. The absence of a control group prevents conclusions about the relative efficacy of KA-EMDR compared to other treatments (i.e. standard EMDR therapy) or a placebo condition. Participants self-selected into the treatment, rather than being randomly assigned, which may have introduced selection bias. The study did not account for expectancy effects, thus participants' beliefs about the treatment's efficacy could have influenced outcomes. The small sample size limits statistical power and the generalizability of the findings. The dosing protocol was refined during the study, potentially introducing variability in treatment outcomes. The findings may not generalize to broader populations, as participants were from a specific clinical setting and met certain inclusion criteria. Although the within-subjects design inherently controls for stable individual characteristics such as sex, age, and baseline weight, unmeasured time-varying factors – such as changes in concurrent medications, psychosocial stressors, or other treatments during the study period – may have influenced outcomes. These potential confounding variables could not be systematically assessed in this retrospective chart review and should be carefully controlled for in future prospective research.

5.1. Future directions

Additional research is needed to determine how this combined therapy compares in terms of long-term outcomes and cost-effectiveness. Much of the existing research on ketamine's neurobiological effects has utilized higher doses than those used in the current study. This leaves a gap in our understanding of how lower doses might affect neural circuitry and memory reconsolidation. Moreover, studies specifically investigating the effects of low-dose ketamine in combination with trauma-focused psychotherapies, such as EMDR therapy, are limited. Further research is needed to determine the efficacy and optimal dosing of ketamine as an adjunct to these therapies. A randomized comparison of standard EMDR therapy with KA-EMDR in the treatment of PTSD is needed.

Acknowledgments

The authors wish to extend our deepest gratitude to the clients whose experiences were included in this clinical chart review. We honour the courage, resilience, and trust required to try this novel treatment. Your experiences are invaluable in advancing more effective and accessible treatments for others on their healing journey. This study was reviewed by Sterling Institutional Review Board (IRB00001790) and determined to be exempt from formal ethics review under US federal regulation 45 CFR 46.104(d)(4), which applies to retrospective chart reviews involving de-identified data. The board concluded that the project does not constitute human subjects research as defined by US regulations.

Disclosure statement

Michele Topel and Danielle Ciccone are co-developers of Ketamine Assisted EMDR Therapy™ and co-founders of Ketamine Assisted EMDR Therapy™ Institute.

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Data availability statement

The authors confirm that the data supporting the findings of this study are available 'Replication data for Ketamine Assisted EMDR Therapy™ (KA-EMDR)', https://doi.org/10.7910/DVN/QFL7TN

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