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Case Study

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Dissociative identity disorder in the context of childhood trauma and anxiety: a clinical case study incorporating AI in subconscious energy healing therapy

Abstract

This case study explores the psychological profile of client, a child diagnosed with dissociative identity disorder (DID), which emerged as a response to severe childhood trauma and anxiety. She presents with three distinct personalities: one embodying the trauma of a rape survivor, another representing a childlike version of herself, and a third acting as an aggressive and abusive alter. Her condition is characterized by heightened anxiety, episodic memory lapses, and an intense fear of social rejection. Additionally, her history of Cerebrospinal Fluid (CSF) complications in childhood is examined as a potential contributing factor to her dissociative symptoms, particularly brain fog and perceptual distortions. The study delves into the interplay between neurobiological influences and psychological distress in shaping her fragmented identity. Through clinical observation, structured psychological assessments, and neuropsychological evaluations, key aspects of her cognitive and emotional functioning are analysed. Findings suggest that dissociation serves as a defence mechanism against overwhelming distress, further complicating her sense of self and social interactions. Dissociative Identity Disorder (DID) often emerges as a response to severe childhood trauma, serving as a defence mechanism against overwhelming emotional pain. Anxiety, fragmented memory, and dissociation characterize this complex condition, making traditional therapy a long-term process. However, Artificial Intelligence (AI) is revolutionizing Subconscious Energy Healing Therapy (SEHT) by providing personalized interventions, predictive insights, and deep subconscious analysis, enhancing the therapeutic approach for individuals with DID. The study underscores the importance of early intervention, a multidisciplinary treatment approach, and the need for continued research into the neurophysiological underpinnings of DID to enhance therapeutic outcomes for children with complex trauma histories.

Keywords: dissociative identity disorder (DID), childhood trauma, anxiety, brain fog, identity fragmentation, subconscious energy healing therapy (SEHT), AI in health

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Abbreviations: DID, dissociative identity disorder; SEHT, subconscious energy healing therapy; AI, artificial intelligence; CSF, cerebrospinal fluid; TF-CBT, trauma-informed cognitive-behavioural therapy

Introduction

Dissociative Identity Disorder (DID), formerly known as Multiple Personality Disorder, is a complex and chronic psychiatric condition characterized by the presence of two or more distinct identity states within an individual. These identity states, or "alters," may have unique behaviours, emotions, and cognitive processes that are often compartmentalized and inaccessible to one another. The disorder is widely understood as a trauma-related condition, most commonly developing as a defence mechanism in response to severe and prolonged childhood trauma.

Such traumatic experiences may include physical, emotional, or sexual abuse, extreme neglect, or exposure to persistent environmental stressors. Dissociation serves as a coping strategy that allows individuals to distance themselves from overwhelming emotional pain by fragmenting their sense of self, thereby reducing psychological distress. This case study focuses on her, a child diagnosed with DID, who experiences severe anxiety, episodic memory lapses, and a distorted perception of reality. Her condition manifests in three distinct identity states: one representing the trauma of a rape survivor, another embodying a childlike version of herself, and a third displaying aggression and abusive tendencies.

The client also has a medical history of Cerebrospinal Fluid (CSF) complications in early childhood, which may have played a role in her neurological vulnerabilities, potentially exacerbating her dissociative tendencies. Through a comprehensive analysis of her psychological symptoms, cognitive functioning, and emotional distress, this study explores the interplay between childhood trauma and identity development. Additionally, the study examines the impact of neurobiological factors, including brain fog and memory fragmentation, which may contribute to her dissociative experiences.

Therapeutic interventions such as trauma-informed cognitive-behavioural therapy (TF-CBT), grounding techniques, and identity reintegration strategies are also discussed as critical components of treatment. By investigating the intricate relationship between trauma, dissociation, and neurological factors, this study aims to provide valuable insights into the effective management of DID in children.

Childhood trauma and the development of dissociative identity disorder (DID)

Dissociative Identity Disorder (DID) has been widely linked to early childhood trauma, particularly severe and prolonged abuse. Research suggests that dissociation serves as a psychological defence mechanism in response to overwhelming stress, allowing individuals to compartmentalize distressing experiences to maintain psychological survival.[1] According to the structural dissociation theory proposed by Van der Hart, Nijenhuis, and Steele,[2] extreme trauma during critical developmental years disrupts the integration of personality, leading to dissociative pathology.

Van der Hart et al., argue that dissociation functions as a protective strategy, wherein traumatized children develop distinct self-states to manage conflicting emotions and memories.[2] Their theory of structural dissociation distinguishes between the "apparently normal part of the personality" (ANP), which focuses on daily functioning, and the "emotional part of the personality" (EP), which remains fixated on traumatic memories. This fragmentation is particularly evident in individuals with DID, where multiple dissociative identities emerge as a coping mechanism to deal with repeated abuse. The authors further emphasize that unresolved attachment trauma, coupled with a lack of social support, exacerbates dissociative symptoms, reinforcing identity fragmentation as a survival response.

Empirical studies support these theoretical perspectives. Research by Ross et al. (2008) found that over 90% of individuals diagnosed with DID report severe childhood abuse, including physical, emotional, and sexual maltreatment.

Similarly, Draijer and Boon documented a significant correlation between early trauma and dissociative symptoms, with dissociation serving as a mediator between trauma exposure and personality fragmentation.[3] Furthermore, Sar et al., highlighted the neurobiological impact of trauma, noting alterations in the amygdala and hippocampus, which are crucial for emotional regulation and memory processing.[4] These structural changes further support the notion that dissociation in DID is an adaptive response to extreme stress.

In summary, the research by Van der Hart, Nijenhuis, and Steele provides a foundational framework for understanding the role of dissociation in DID.[2] Their theory aligns with clinical findings and neurobiological evidence, reinforcing that severe childhood trauma disrupts the development of a cohesive identity, leading to dissociative pathology.

Recent studies continue to support and expand upon these findings. For instance, recent research indicates that individuals with DID often experience significant memory disruptions and a sense of detachment from their own actions, reinforcing the necessity for early therapeutic interventions.

Moreover, advancements in neuroimaging have revealed structural differences in the hippocampus of DID patients, providing a neurological basis for the observed memory impairments and identity fragmentation. These insights align with earlier assertions that dissociation functions as a protective mechanism against traumatic experiences.[5]

Dissociative Identity Disorder (DID) is a complex psychological condition characterized by the presence of two or more distinct identity states, often arising as a coping mechanism in response to severe trauma. Early research by Ross et al., highlighted that identity fragmentation is prevalent among individuals with unresolved trauma, suggesting that dissociation serves as a defence against overwhelming experiences.[6]

Similarly, Putnam emphasized the efficacy of early interventions, such as cognitive therapy and trauma-focused psychotherapy, in improving outcomes for DID patients.[7] Loewenstein further noted that anxiety and memory lapses, commonly referred to as "brain fog," are frequent in dissociative disorders, underscoring the importance of prompt diagnosis and treatment.[8]

Methodology

Psychological assessments

To gain a comprehensive understanding of the client's psychological and personality profile, a series of standardized assessments were administered. These tools provided valuable insights into the severity and nature of the client's symptoms, guiding diagnostic considerations and treatment planning.

Assessment methodology

The assessment process included a structured clinical interview, standardized psychometric tests, and qualitative self-reports. The evaluations were conducted over multiple sessions to ensure reliability and validity. The frequency and duration of each assessment were tailored to the client's tolerance and psychological state. The results were triangulated with clinical observations and collateral information from caregivers (where applicable) to enhance diagnostic accuracy.

International personality disorder examination (IPDE)

Instrument description: The International Personality Disorder Examination (IPDE) is a 59-item semi-structured questionnaire used to assess personality traits and identify potential personality disorders.

Administration details: The assessment was conducted over two sessions, with a trained clinician facilitating the administration to ensure accuracy in self-reporting.[10–20]

Findings

Dependent personality traits: Marked difficulties in self-sufficiency, excessive reliance on others for emotional and decision-making support, and a pronounced fear of abandonment.

Anxious personality traits: Persistent and pervasive worry, heightened sensitivity to criticism, and a tendency to experience excessive fear and apprehension in social situations.

Borderline personality traits (Moderate): Emotional instability, impulsivity, and difficulties in maintaining stable interpersonal relationships. The client exhibited fluctuating self-image and occasional distress-related dissociative symptoms.

Histrionic personality traits (Moderate): A notable tendency toward attention-seeking behaviours, heightened emotional expression, and an excessive need for approval and validation. The severity of these traits suggested significant impairment in the client's psychosocial functioning, highlighting the need for targeted therapeutic interventions.

Anxiety and psychiatric symptomatology assessments

Beck anxiety inventory (BAI) assessment report (Appendix I)

Instrument description

The Beck Anxiety Inventory (BAI) is a 21-item self-report questionnaire designed to assess the severity of anxiety symptoms across three key domains:

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Cognitive symptoms: Includes excessive worry, intrusive thoughts, and difficulties in concentration.

Emotional symptoms: Encompasses feelings of nervousness, fear, and panic.

Physiological symptoms: Covers somatic experiences such as dizziness, palpitations, sweating, and muscle tension.

Each item on the BAI is rated on a four-point scale (0–3) based on how much the symptom has bothered the individual over the past week. The total score ranges from 0 to 63, with higher scores reflecting greater levels of anxiety:

0–7: Minimal anxiety

8–15: Mild anxiety

16–25: Moderate anxiety

26–63: Severe anxiety

Administration details

The assessment was conducted in a controlled clinical setting, ensuring that the client was in a comfortable environment, free from distractions. The client was given clear instructions to self-report their symptoms as accurately as possible. A mental health professional was present to observe, clarify any doubts, and ensure reliability in the responses.

Findings and interpretation

The client's total score fell within the severe range (26–63), indicating high levels of anxiety. The severity of symptoms suggests that the client experiences persistent distress, excessive worry, and difficulty managing anxious thoughts, significantly affecting daily functioning.

(i) **Cognitive symptoms:** The client reported experiencing frequent racing thoughts, persistent worry, and difficulty concentrating. These symptoms may interfere with decision-making, problem-solving, and overall mental clarity.

(ii) **Emotional symptoms:** The client endorsed feelings of intense fear, nervousness, and an overwhelming sense of dread. These symptoms suggest a heightened state of emotional reactivity and difficulty regulating emotions.

(iii) **Physiological symptoms:** The client reported dizziness, heart palpitations, shortness of breath, muscle tension, and sweating, indicating a strong somatic component to their anxiety. These symptoms may mimic medical conditions, potentially leading to additional distress and health concerns.

Clinical implications

(i) The severity of anxiety symptoms suggests that intervention is necessary to prevent further deterioration in emotional and physical well-being.

(ii) The presence of strong physiological symptoms indicates the possibility of panic attacks or generalized anxiety disorder (GAD) and should be further assessed through clinical interviews and additional psychological testing.

(iii) The client may benefit from cognitive-behavioural therapy (CBT), relaxation techniques, mindfulness-based interventions, and potential pharmacological consultation if symptoms persist or worsen.

The brief psychiatric rating scale (BPRS)

The Brief Psychiatric Rating Scale (BPRS) is a widely used clinician-administered tool designed to assess the severity of psychiatric symptoms across multiple domains, including mood disturbances, cognitive impairments, and psychotic features. It is particularly useful for evaluating individuals with schizophrenia, mood disorders, and other severe psychiatric conditions.

Administration and observation

The assessment was conducted over two sessions, ensuring a comprehensive and real-time clinical observation of the client's symptoms. This method allowed for a more dynamic evaluation, capturing variations in symptom presentation across different time points. The two-session approach also helped mitigate potential biases that could arise from a single-point assessment, providing a broader understanding of the client's mental state.

Findings and interpretation

The client's severe score on the BPRS indicates significant psychological distress and dysfunction. The elevated scores suggest the presence of:

Emotional dysregulation

(i) The client likely exhibited intense mood fluctuations, irritability, or depressive symptoms.

(ii) Possible indicators include emotional outbursts, excessive anxiety, or periods of apathy and detachment.

(iii) Difficulty in managing emotional responses, which could interfere with interpersonal relationships and daily functioning.

Cognitive disturbances

(i) Impairments in thought processes were evident, potentially manifesting as confusion, disorganized thinking, or difficulty concentrating.

(ii) The client may have experienced intrusive thoughts, memory issues, or an inability to maintain logical coherence in speech.

(iii) These disturbances could indicate underlying neurocognitive deficits often seen in schizophrenia-spectrum disorders or severe mood disorders.

Perceptual abnormalities

(i) The assessment revealed possible hallucinations (auditory, visual, or tactile) or delusions.

(ii) The client might have reported hearing voices, seeing non-existent figures, or holding strong, irrational beliefs that deviate from reality.

(iii) Such perceptual distortions are common in psychotic disorders and can contribute to heightened distress and social withdrawal.

Clinical implications

The results from these assessments provided an in-depth understanding of the client's psychological functioning. The presence of severe anxiety, psychosis, and multiple maladaptive personality traits underscored the need for an integrated treatment approach, combining psychotherapy, cognitive-behavioural strategies, and potential psychiatric evaluation to ensure comprehensive care. These findings played a crucial role in formulating a tailored intervention

plan that addressed both acute symptoms and underlying personality structures affecting the client's well-being.

Therapeutic interventions

A combination of evidence-based interventions was used to address dissociation and anxiety:

(i) Subconscious energy healing therapy (SEHT)

SEHT integrates subconscious reprogramming, energy healing, and cognitive restructuring to address deep-rooted psychological patterns, release emotional blockages, and promote holistic mental well-being.

Grounding techniques

5-4-3-2-1 method: Using sensory awareness to bring the client back to the present moment.

Progressive muscle relaxation (PMR): Taught to reduce physical tension and anxiety symptoms.

Safe place visualization: Creating mental imagery of a comforting place to counteract dissociative episodes.

Tactile grounding tools: Using textured objects or temperature shifts (e.g., cold water splash) to anchor in reality. These interventions aimed at reducing distress, enhancing emotional regulation, and improving overall mental well-being.

REM sleep and dissociation

Key observations

(i) Fragmented sleep and dream patterns: Clients with dissociative disorders often have poor sleep quality due to hypervigilance, nightmares, or sleep paralysis, leading to frequent awakenings during REM sleep.

(ii) REM sleep and trauma processing: Since REM sleep is crucial for processing traumatic memories, unprocessed trauma can lead to intrusive dreams or waking dissociative episodes.

(iii) Emotional regulation in rem sleep: Sleep disturbances increase emotional instability, exacerbating daytime dissociation and mood swings.

(iv) Variability in alter experiences: Different alters may have distinct sleep patterns, influencing the overall sleep cycle.

Therapeutic implications

Therapy-based sleep regulation techniques, such as mindfulness and structured bedtime routines, aid in stabilizing the dissociative system. By incorporating these sleep interventions, the treatment approach holistically addresses both physiological and psychological dimensions of dissociation and trauma recovery.

AI applications in subconscious energy healing therapy (SEHT) for DID

Artificial Intelligence (AI) plays a transformative role in enhancing Subconscious Energy Healing Therapy (SEHT) by offering precise, personalized, and adaptive interventions for individuals with dissociative identity disorder (DID). AI methodologies employed in SEHT include:

1. AI-driven pattern recognition for alter mapping

AI can analyse verbal and non-verbal cues, identifying recurring emotional and cognitive patterns in individuals with DID. Natural Language Processing (NLP) tools and facial recognition software can help map the emergence of different alters, allowing therapists to understand triggers and transition sequences.

2. Personalized AI-guided hypnotherapy

AI-powered hypnosis applications can track response variations across sessions, fine-tuning therapeutic suggestions based on real-time feedback. These systems can dynamically adjust relaxation techniques and an affirmation to align with each alters distinct psychological needs.

3. AI-enhanced mood and energy tracking

AI-integrated mood tracking tools can monitor emotional fluctuations and energy imbalances associated with DID. By collecting and analysing data over time, AI can identify patterns of dissociation, helping therapists intervene before severe episodes occur.

4. Virtual AI therapist for continuous support

AI-driven virtual therapists provide ongoing support outside of therapy sessions. These models, trained on SEHT principles, can offer guided mindfulness exercises, grounding techniques, and subconscious healing prompts tailored to each individual's state of mind.

5. AI-based neurofeedback and biofeedback

AI-powered neurofeedback devices can help individuals with DID by monitoring brainwave activity and autonomic nervous system responses. Personalized interventions can be suggested to regulate emotional arousal, improving overall integration and stabilization.

AI adaptability to individualized therapy needs in DID

DID therapy require highly personalized interventions due to the presence of multiple identity states. AI adapts by:

Real-time alter recognition: AI can detect subtle changes in voice tone, word usage, and facial micro-expressions to recognize which alter are present.

Adaptive therapeutic strategies: AI algorithms modify interventions based on each alters responses, ensuring engagement without triggering distress.

Data-driven customization: AI learns from past therapy sessions to refine its approach, tailoring therapeutic recommendations to each individual's progress.

Ethical considerations in AI-driven therapy for DID

Using AI in therapy, especially with vulnerable populations like children with DID, raises several ethical concerns:

1. Informed consent & data privacy

(i) Ensuring that individuals (or guardians) fully understand AI's role in therapy.

(ii) Implementing strict encryption and security measures to protect sensitive therapy data from breaches.

2. Risk of emotional distress & misinterpretation

AI must be carefully designed to avoid misdiagnosing alters or reinforcing distressing experiences. The presence of a human therapist is crucial to interpret AI-generated insights with clinical judgment.

3. Dependency & human-AI balance

Over-reliance on AI in therapy might reduce human connection, which is essential for healing DID.

AI should function as an augmentative tool rather than a replacement for human therapists.

4. Bias in AI models

AI models must be trained on diverse datasets to prevent biased therapeutic recommendations.

Continuous validation with real-world case studies ensures ethical and effective application.

Patient self-reports

Her personal reflections played a crucial role in understanding her thought processes and emotional experiences. Data collection included:

Journaling: Provided insights into triggers, coping mechanisms, and progress.

Verbal reflections: Documented emotional states and dissociative episodes.

Therapy feedback: Guided adjustments to interventions based on her reported experiences.

Case study: Complex psychological profile stemming from early childhood CSF complications

Background

A young child presented with a complex psychological profile linked to early childhood cerebrospinal fluid (CSF) complications. The child exhibited heightened anxiety and dissociative tendencies, manifesting in three distinct personalities:

The survivor personality: Displays hypervigilance, trauma responses, and PTSD-like symptoms.

The child personality: Demonstrates regressive behaviours and vulnerability in distressing situations.

The aggressor personality: Embodies dominance and coercion, potentially reflecting trauma internalization.

Clinical considerations

The child's symptoms suggest possible dissociative identity disorder (DID) or trauma-related dissociation. To address these concerns, a multi-disciplinary approach involving trauma-focused interventions and neurological assessments was recommended. The proposed therapeutic interventions include:

(i) Trauma-focused cognitive behavioural therapy (TF-CBT)

TF-CBT is an evidence-based treatment designed to help children process trauma memories, reduce symptoms of PTSD, and restructure maladaptive thought patterns. This approach includes psychoeducation, relaxation techniques, affective modulation, cognitive coping, trauma narrative development, and gradual exposure to trauma reminders. TF-CBT aims to empower the child with coping skills, reduce fear responses, and facilitate cognitive reframing of distressing experiences.[14]

(ii) Eye movement desensitization and reprocessing (EMDR)

EMDR is a structured therapy that uses bilateral stimulation (e.g., eye movements, tapping, or auditory tones) to help individuals reprocess distressing memories. By activating the brain's natural healing processes, EMDR allows the child to integrate traumatic memories in a less distressing manner. This therapy has been found to significantly reduce trauma-related symptoms, including anxiety, flashbacks, and dissociation. It is particularly beneficial for children with dissociative tendencies, as it helps reintegrate fragmented aspects of memory and identity.[19]

(iii) Inner child healing techniques

Inner child healing is a therapeutic approach that focuses on reconnecting with and nurturing the vulnerable aspects of the self that may have been wounded due to trauma. Techniques such as guided visualization, journaling, somatic experiencing, and Internal Family Systems (IFS) therapy help individuals acknowledge and integrate dissociated parts. For children with DID-like symptoms, inner child healing fosters emotional regulation, self-compassion, and the integration of fragmented identity states.[18]

(iv) Inner child healing techniques: a deep dive

Inner child healing is a profound therapeutic approach that aims to reconnect individuals with their younger selves, often addressing childhood wounds and traumas that continue to impact emotional well-being in adulthood. By nurturing the inner child, individuals can heal unresolved pain, develop self-compassion, and cultivate emotional resilience.

(v) Understanding the inner child

The "inner child" represents the emotional and psychological aspects of oneself that were formed during early childhood. Experiences of neglect, abuse, abandonment, or unmet emotional needs can create wounds that manifest later as anxiety, low self-esteem, attachment issues, or dissociative tendencies. Healing the inner child involves reparenting these wounded parts with love, acceptance, and validation.

Techniques for inner child healing

1. Guided visualization and meditation

Guided visualization allows individuals to connect with their inner child through imagination and sensory experiences. In a safe mental space, they can visualize their younger self, offering comfort, reassurance, and validation. This practice fosters a sense of security, enabling individuals to process painful memories with compassion.

2. Journaling and letter writing

Writing is a powerful tool for emotional release. Inner child journaling involves:

(i) Writing letters to and from the inner child to foster dialogue.

(ii) Expressing emotions that were suppressed in childhood.

(iii) Documenting affirmations and self-soothing statements.

(iv) This method helps in understanding past emotional needs and unmet desires, enabling self-reconnection.

3. Somatic experiencing (SE)

Trauma is often stored in the body, and somatic experiencing focuses on bodily awareness to process and release stored emotional pain. Techniques such as breathwork, movement, and touch therapy can help individuals reconnect with their inner child on a physical level, promoting self-regulation and safety.

4. Internal family systems (IFS) therapy

Developed by Richard Schwartz,[18] IFS therapy explores the psyche as a system of different parts, including wounded childlike parts that require care and attention. The goal is to integrate these fragmented aspects into the core self, allowing for greater harmony and self-leadership. IFS is particularly effective for individuals with dissociative identity disorder (DID)-like symptoms, as it supports the integration of dissociated identity states.

5. Play therapy and creative expression

Engaging in childlike activities such as drawing, painting, storytelling, or playing with toys can help individuals reconnect with their inner child. These activities offer a safe outlet for expression and joy, allowing suppressed emotions to surface and be processed in a non-verbal way.

6. Reparenting the inner child

Self-reparenting involves providing oneself with the love, guidance, and emotional support that may have been missing in childhood. This can be done through:

(i) Setting healthy boundaries.

(ii) Practicing self-care and self-soothing techniques.

(iii) Offering affirmations such as, "You are safe," "You are loved," and "You are enough."

Inner child healing for DID-like symptoms

For individuals experiencing dissociative symptoms or DID-like tendencies, inner child healing plays a crucial role in integrating fragmented identity states. Many dissociative experiences stem from the mind's attempt to protect itself from early trauma by creating different personality states. Techniques such as IFS therapy, trauma-informed mindfulness, and somatic work help individuals build a sense of internal coherence, enhancing emotional regulation and reducing dissociative episodes.

Collaboration with psychiatrists, clinical psychologists, and neuropsychologists

Given the potential neurological implications of early CSF complications, a collaborative approach is essential. Psychiatrists can assess for pharmacological interventions, if necessary, while clinical psychologists and neuropsychologists can conduct neurocognitive testing to determine the extent of neurological impact on memory, executive functioning, and emotional regulation. Understanding the interplay between CSF-related abnormalities and trauma symptoms is crucial for developing an individualized treatment plan.[13] Cerebrospinal fluid (CSF) abnormality, particularly in the early stages of development, can have significant neurological and psychological implications. Given the complexity of such cases, a multidisciplinary approach involving psychiatrists, clinical psychologists, and neuropsychologists is critical for accurate assessment, diagnosis, and treatment.

Role of psychiatrists

Psychiatrists play a key role in managing the neuropsychiatric symptoms associated with CSF complications. These symptoms can range from mood disturbances, anxiety, and cognitive deficits to more severe manifestations such as psychosis or neuroinflammatory conditions. Based on their assessments, psychiatrists may prescribe pharmacological interventions, such as:

(i) Neuroprotective agents (e.g., antioxidants, anti-inflammatory drugs) to mitigate potential neuronal damage. Mood stabilizers or antidepressants to regulate affective symptoms stemming from CSF-related disruptions in neurotransmitter function.

(ii) Antipsychotic medications in cases where CSF abnormalities contribute to hallucinations, delusions, or significant cognitive distortions. Additionally, psychiatrists collaborate with other professionals to monitor medication efficacy and side effects, ensuring that pharmacological treatments align with the patient's overall neurological and psychological needs.

Role of clinical psychologists

Clinical psychologists assess the psychological and emotional impact of CSF-related abnormalities, particularly in individuals who develop trauma symptoms, anxiety, or depression as a result of their condition. Their role includes:

(i) Conducting comprehensive psychological assessments to evaluate emotional regulation, coping strategies, and behavioural changes associated with CSF dysfunction. Implementing psychotherapeutic interventions, such as Cognitive-Behavioural Therapy (CBT) and trauma-focused therapies, to address emotional distress, intrusive thoughts, and maladaptive behaviours.

(ii) Working on psychoeducation and coping strategies to help patients and their families understand the psychological effects of CSF abnormalities and build resilience. By focusing on the interplay between neurobiological factors and psychological well-being, clinical psychologists help patients develop adaptive strategies to manage their symptoms effectively.

Role of neuropsychologists

Neuropsychologists specialize in assessing the cognitive and neurological effects of CSF abnormalities, which can impact functions such as:

(i) Memory processing, particularly working memory and long-term retrieval.

(ii) Executive functioning, including decision-making, problem-solving, and impulse control.

(iii) Attention and processing speed, which may be affected due to disruptions in CSF flow and intracranial pressure variations.

Neuropsychological testing provides valuable insights into the extent of cognitive impairment and helps tailor rehabilitation strategies. Depending on findings, neuropsychologists may recommend cognitive rehabilitation programs, neurofeedback training, or specific interventions to support memory and executive functioning.

Interdisciplinary approach to treatment

Collaboration among psychiatrists, clinical psychologists, and neuropsychologists is essential in crafting an individualized treatment plan that addresses the full spectrum of neurocognitive, emotional, and psychiatric challenges associated with early CSF complications. A well-integrated approach might include:

(i) Regular case discussions to ensure a holistic understanding of the patient's condition.

(ii) Joint intervention plans, where pharmacological, psychological, and cognitive therapies complement each other.

(iii) Longitudinal monitoring to track symptom progression and adjust treatments as needed.

By leveraging their unique expertise, these professionals can create a comprehensive, patient-centered approach that not only mitigates the neurological effects of CSF complications but also fosters psychological resilience and improved quality of life.

Dissociative identity disorder and childhood trauma

Dissociative Identity Disorder (DID) is a complex psychological condition characterized by the presence of two or more distinct personality states, often associated with severe early childhood trauma.[2] It is considered a post-traumatic developmental disorder where the fragmentation of identity serves as a coping mechanism for overwhelming experiences.[15]

Dissociative Identity Disorder (DID) is a severe and chronic condition that falls under the spectrum of dissociative disorders. It is primarily characterized by the presence of two or more distinct personality states, also known as alters, which may have unique names, memories, behaviours, and even physiological responses. These distinct states often emerge as a result of extreme and repeated childhood trauma, particularly in the form of physical, emotional, or sexual abuse, as well as severe neglect.[2]

DID as a post-traumatic developmental disorder

DID is widely considered a post-traumatic developmental disorder, meaning that its origins lie in the inability of a young child to integrate traumatic experiences into a coherent sense of self. Unlike adults, children have a still-developing sense of self, making them more susceptible to dissociation when exposed to overwhelming stress or abuse.[15] The fragmentation of identity in DID is understood as a defence mechanism, allowing the child to psychologically "escape" or compartmentalize traumatic events. This process helps the child survive the abuse by distancing themselves from the pain, ultimately creating alternate self-states that take on different roles in handling the trauma.

The role of early childhood trauma

The link between early childhood trauma and DID is well-documented in psychological literature. Studies indicate that 90% or more of individuals diagnosed with DID report a history of severe abuse or neglect in childhood.[24] When a child experiences extreme trauma, particularly before the age of 6 to 9 years when identity development is still fluid dissociation becomes a crucial survival strategy. Instead of forming a singular, cohesive identity, the mind partitions these traumatic experiences into different personality states, each responsible for managing distinct aspects of life and memory.

Structural dissociation model

Van der Hart, Nijenhuis, and Steele proposed the Theory of Structural Dissociation, which explains DID as a failure in the integration of personality due to chronic trauma.[2] According to this model, the personality is divided into, The Apparently Normal Part (ANP): This part of the personality is responsible for everyday functioning and social interactions, often detached from traumatic memories. The Emotional Part (EP): These are the alter identities that carry the emotional and sensory memories of trauma. They often emerge in response to triggers that resemble past traumatic events. In DID, there is often more than one emotional part, leading to the existence of multiple distinct personalities. These alters may have different levels of awareness of each other, and transitions between them (known as "switching") can be triggered by stress, trauma reminders, or overwhelming emotional states.

Neurological and psychological aspects of DID

Neuroimaging studies have shown that individuals with DID exhibit altered brain activity in areas related to memory processing, emotion regulation, and self-awareness, such as the amygdala, hippocampus, and prefrontal cortex.[16] These findings support the idea that DID is not simply a psychological construct but has biological underpinnings influenced by early trauma. Psychologically, DID is also associated with symptoms such as dissociative amnesia (gaps in memory), depersonalization (feeling detached from one's own body), and derealization (feeling like the external world is unreal). These symptoms further reinforce the idea that DID is a complex trauma response rather than a deliberate or fabricated disorder.

Treatment and management

Therapeutic approaches for DID primarily focus on trauma integration and stabilization. Common treatments include:

(i) Trauma-focused therapy: Approaches like Eye Movement Desensitization and Reprocessing (EMDR) and Cognitive Processing Therapy (CPT) help individuals process past trauma.

(ii) Phase-oriented treatment (Chu, 2011): This model includes three stages—stabilization, trauma processing, and integration to help individuals gradually reintegrate fragmented aspects of their identity.

(iii) Hypnotherapy and ego-state therapy: Techniques like hypnosis and parts works are used to facilitate communication between alters and promote internal cooperation.

Neurobiological and psychological underpinnings of DID

Research suggests that childhood trauma disrupts integrative brain functions, leading to a compartmentalization of identity states. Neurobiological findings indicate that abnormalities in cerebrospinal fluid (CSF) composition during infancy may contribute to neurodevelopmental vulnerabilities, impacting emotional regulation and cognitive integration.[21] Functional neuroimaging studies reveal altered activity in the amygdala, hippocampus, and prefrontal cortex in individuals with DID, suggesting a trauma-related disruption in fear processing and memory integration.[16] Further, epigenetic research highlights how early adverse experiences can lead to changes in gene expression, affecting neural plasticity and increasing susceptibility to dissociative symptoms.[22]

Interventions for DID and dissociation

Effective interventions for DID emphasize stabilization, trauma processing, and integration of dissociative parts. Various therapeutic approaches have been validated for their effectiveness in addressing dissociation:

(i) Eye movement desensitization and reprocessing (EMDR): EMDR facilitates the adaptive processing of traumatic memories and has been found to reduce dissociation in individuals with trauma histories (Shapiro, 2018).

(ii) Trauma-focused cognitive behavioural therapy (TF-CBT): Widely used for children with trauma histories, TF-CBT integrates psychoeducation, cognitive restructuring, and gradual exposure techniques to improve emotional regulation.[14]

(iii) Internal family systems therapy (IFS): This approach focuses on integrating fragmented personality states by addressing inner conflicts and providing a structured framework for self-compassion and healing.[18]

(iv) Sensorimotor psychotherapy and somatic experiencing:

These therapies incorporate body-based interventions to address somatic manifestations of trauma, aiding in grounding and regulation.[23]

(v) **Pharmacological approaches:** While there are no medications specifically for DID, adjunctive pharmacotherapy targeting co-occurring symptoms such as depression, anxiety, and PTSD can support overall treatment.[13]

AI applications in therapy for DID

AI-assisted cognitive behavioural therapy (CBT) AI-powered chatbots and virtual therapists have been developed to provide cognitive restructuring exercises and coping strategies in real-time, aiding in emotional regulation.[20] Cognitive Behavioural Therapy (CBT) is one of the most common and effective therapeutic techniques for treating various mental health issues, including trauma and dissociation.

AI-assisted CBT leverages chatbots or virtual therapists to deliver CBT exercises and coping strategies in real-time. AI chatbots can engage with individuals and guide them through cognitive restructuring techniques, such as identifying and challenging negative thought patterns.

For individuals with DID, this real-time support could help in emotional regulation, as they might experience fragmented states or memory lapses. AI tools can recognize these states and adapt the exercises accordingly. These bots are designed to prompt users to reflect on their thoughts, emotions, and behaviours, guiding them toward healthier patterns. The use of natural language processing (NLP) allows AI to understand and engage in meaningful conversation, making the therapeutic process more interactive and personalized.

AI can track progress over time, offering tailored interventions based on the individual's responses and behavioural patterns. This technology has made therapy more accessible for individuals with DID, especially when in-person therapy isn't possible or in times of dissociation. AI-assisted platforms like Woebot or Wysa are already offering conversational CBT to users, providing support for mental health issues, such as anxiety, depression, and emotional dysregulation, that are common among DID patients.

Virtual reality (VR) exposure therapy: VR-based exposure therapy has shown efficacy in treating PTSD and dissociation by creating controlled simulations of traumatic experiences for gradual desensitization.[17] Virtual Reality Exposure Therapy (VRET) is a form of therapy where controlled, immersive virtual environments are created to expose individuals to triggers or traumatic memories in a safe and controlled manner. This exposure allows for gradual desensitization, helping patients process trauma and reduce dissociative episodes related to those memories.

For DID, VR exposure therapy could simulate specific scenarios that might trigger dissociative states or emotional fragmentation. By gradually exposing patients to these triggers in a virtual environment, VR can help them confront their trauma at their own pace. The immersive nature of VR can allow therapists to control the intensity and nature of the exposure, providing a safe space for clients to process trauma without overwhelming them.

VR systems are becoming increasingly sophisticated, offering more realistic simulations of traumatic scenarios, which are crucial for treating trauma-based disorders like DID. Clinicians can modify the intensity of the VR experience and incorporate therapeutic techniques like grounding exercises to prevent overwhelming dissociation.

VR therapy has already been used to treat PTSD and dissociative symptoms in veterans and survivors of trauma. In these cases, virtual environments can help individuals safely re-experience traumatic memories and process them with therapeutic support.

AI-powered sentiment analysis: Machine learning models can analyse speech patterns, text inputs, and physiological markers to detect dissociative episodes, providing clinicians with valuable insights into symptom fluctuations.

AI-powered sentiment analysis uses machine learning algorithms to analyse speech patterns, text inputs, and physiological markers to detect emotional states, such as anger, anxiety, or dissociation. For individuals with DID, these tools can be used to monitor fluctuations in emotional or dissociative states in real-time, providing valuable insights for both the client and clinician.

By analysing spoken language, AI can assess the tone, pace, and content of a person's speech to detect signs of emotional distress or dissociative episodes. AI can also process text input through online platforms or therapy apps. Machine learning models can detect shifts in mood or cognitive state and alert both the patient and therapist, allowing for timely intervention.

With advancements in NLP and deep learning, AI can now analyse complex emotional states and detect subtle changes in a person's mental state, which could indicate a shift into dissociation or emotional dysregulation. This technology has the potential to be used in both in-person therapy sessions and through remote therapy platforms.

Platforms like Cogito use AI to analyse conversations and provide feedback on emotional and behavioural cues. This kind of analysis could be used in therapeutic settings to help track DID symptoms over time, allowing clinicians to intervene when patterns of dissociation or emotional dysregulation are detected.

Wearable technology for biofeedback: Devices that monitor heart rate variability (HRV) and galvanic skin response (GSR) can provide real-time feedback on physiological arousal, helping individuals recognize and regulate dissociative states. Wearable technology in therapy involves devices like smartwatches, biosensors, or headbands that monitor physiological responses such as heart rate, skin conductance, or brainwaves. These devices provide real-time biofeedback, helping individuals recognize and regulate their emotional states. For individuals with DID, biofeedback can be particularly valuable during dissociative episodes.

Wearables that monitor physiological arousal (e.g., heart rate variability, galvanic skin response) can alert users when they are entering a dissociative state. By receiving real-time feedback on their physiological responses, individuals can employ grounding techniques to bring themselves back into the present moment and reduce dissociation.

With advancements in biofeedback technology, devices are becoming more sensitive and accurate, providing more detailed information about the user's emotional and physiological state. AI algorithms integrated with these wearables can predict shifts in emotional states based on real-time data, allowing for predictive interventions. This data can be used to inform therapeutic strategies and track progress over time. Devices like the Muse headband and Heart Math's Inner Balance monitor can track heart rate variability and provide biofeedback to help individuals regulate stress. These tools have been used in clinical settings to manage anxiety and stress, which are often linked to dissociative states in DID.

Conclusion and discussion

Dissociative Identity Disorder (DID) is a complex psychological condition often rooted in early, repeated trauma. In her case, her fragmented identity reflects her mind's attempt to cope with distressing experiences by compartmentalizing them into distinct personality states. Each of these states may serve a specific function some protecting her from painful memories, others managing daily interactions, and some possibly acting as emotional regulators.

The presence of brain fog adds another layer of complexity, making it challenging for her to process and integrate her experiences into a cohesive sense of self. Brain fog in DID is often associated with cognitive disruptions, difficulties in concentration, and a sense of detachment from reality, further reinforcing the dissociative barriers between her identity states. This cognitive dissonance can contribute to memory gaps, emotional instability, and difficulty in maintaining a continuous narrative of selfhood.

Her case highlights how DID is not just a disorder of identity but also of memory, perception, and self-awareness. The struggle to integrate these distinct personality states often leads to an ongoing internal conflict, where different parts of her psyche hold varying levels of awareness, emotions, and even contradictory beliefs about her past. Therapy for DID typically involves working towards integration, where these fragmented parts can coexist within a more unified self, reducing dissociative episodes and improving overall functioning.

Understanding her experience requires a trauma-informed approach, recognizing that her identity fragmentation is a survival mechanism rather than a deliberate choice. By addressing the underlying trauma and fostering a sense of safety, she may gradually move toward greater self-awareness and emotional coherence.

A mother's narcissistic personality disorder (NPD) can significantly impact her children's mental health, shaping their emotional well-being, self-esteem, and interpersonal relationships. In this case, the mother's narcissistic traits were found to be moderate, highlighting a deeper family pathology rooted in the home environment.

Children raised in such settings often experience emotional neglect, invalidation, and heightened anxiety, struggling with self-worth and forming healthy attachments. The correlation between parental narcissism and children's psychological distress requires further exploration, as it affects their ability to regulate emotions and develop a stable sense of self. Addressing these patterns through family therapy and intervention is essential to break generational cycles of dysfunction and foster a healthier emotional environment.

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Conflicts of interest

The authors declare that there are no conflicts of interest.

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