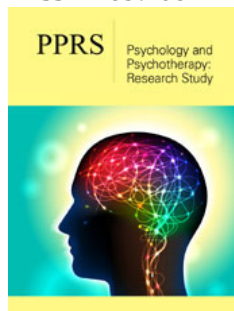


Trauma and Memory in Childhood Sexual Abuse Survivors: A Review of Empirical Studies

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Abstract

Childhood Sexual Abuse (CSA) has profound and lasting effects on memory, particularly in how survivors encode, store, and retrieve traumatic experiences. This review examines empirical research on the relationship between trauma and memory among CSA survivors, focusing on memory fragmentation, dissociation, delayed recall and the role of stress-related neurobiological changes. It also explores controversies surrounding repressed and recovered memories, discussing psychological and neuroscientific perspectives. The review concludes with implications for therapeutic interventions and legal proceedings.

Introduction

Childhood Sexual Abuse (CSA) is a profoundly traumatic experience that disrupts normal cognitive, emotional, and psychological development. Survivors of CSA often face long-term consequences, including Post-Traumatic Stress Disorder (PTSD), depression, anxiety, and dissociation Brewin et al. 2019, Van der Kolk, 2014. One of the most critical and widely debated aspects of CSA's impact is how it affects memory encoding, storage, and retrieval over time. Research in psychology and neuroscience has demonstrated that traumatic events can alter the way memories are formed and recalled, leading to fragmentation, dissociation, delayed recall, or even repression McNally, 2021. These memory disturbances raise essential questions about the nature of traumatic memories, their reliability, and their implications for therapy and legal settings.

The relationship between trauma and memory is complex, as traumatic experiences do not follow typical patterns of encoding and retrieval seen in non-traumatic events. Memory encoding is how experiences are transformed into stable neural representations in the brain. In the case of traumatic events, such as Childhood Sexual Abuse (CSA), the brain's stress-response system is highly activated, leading to distinct effects on how memories are stored. The memory of CSA is often described as vivid yet fragmented, hyper-detailed yet incomplete Frewen & Lanius, 2015. Some survivors retain highly detailed sensory memories of the abuse but struggle to construct a coherent narrative, while others experience delayed recall or even complete amnesia for specific periods Williams, 1994. These memory phenomena suggest that trauma affects the brain's ability to process and integrate experiences in a structured manner, leading to distortions in recall. One of the key aspects of trauma-related memory encoding is that stress hormones, particularly cortisol and norepinephrine, influence the consolidation and retrieval of memories McNally, 2021. These hormones impact different areas of the brain, particularly the amygdala and the hippocampus, which play crucial roles in emotional processing and memory formation.

Research suggests that traumatic memories are often stored with intense sensory and emotional detail due to the hyperactivation of the amygdala Van der Kolk, 2014. This process,

called over consolidation, makes certain aspects of the traumatic experience, such as specific sounds, smells, or images, vivid and intrusive. Survivors may experience flashbacks, where they feel as if they are reliving the event. Neuroimaging studies Shin et al., 2005 have shown that CSA survivors often exhibit heightened amygdala activity, suggesting that emotionally charged aspects of trauma are deeply encoded and difficult to forget.

While some elements of trauma are vividly remembered, other aspects may be fragmented or distorted. The hippocampus, responsible for organizing experiences into a coherent narrative, is highly sensitive to stress hormones. Excessive cortisol release during trauma can disrupt hippocampal function, leading to disorganized, non-linear memories Bremner, 2006. This explains why CSA survivors may remember specific sensations or feelings but struggle to recall chronological details or the overall context of the event.

In extreme stress conditions, survivors may experience dissociation, where they feel detached from the traumatic event. The prefrontal cortex, responsible for rational thought and self-awareness, may shut down during trauma, leading to an altered state of consciousness Lanius et al., 2015. This process results in fragmented memory storage, where portions of the traumatic experience become difficult to access or completely blocked from conscious awareness.

Thus, trauma disrupts normal memory encoding by amplifying emotional details, impairing the ability to form a cohesive, logical recollection of the event. This dual process explains why CSA survivors often experience intrusive flashbacks alongside gaps in memory for the same traumatic experience. The question of how traumatic memories are processed has been the subject of extensive debate, particularly regarding repression and dissociation. Repression, a defense mechanism proposed by Freud (1896) and later supported by researchers like Freyd (1996), suggests that traumatic memories are unconsciously pushed out of awareness to protect the individual from overwhelming emotional distress. These memories may remain inaccessible for years or even decades, only resurfacing through triggers, therapy, or spontaneous recall. One of the studies supporting repression is Williams (1994), which found that 38% of women with documented CSA histories did not recall their abuse when interviewed as adults. However, critics argue that suggestibility and external influences can create false memories, leading to significant controversy (Loftus & Davis, 2006).

One of the most controversial issues in CSA research is whether traumatic memories can be repressed and later recovered. Early theories of repression, proposed by Freud (1896), suggested that traumatic memories might be unconsciously blocked as a psychological defense mechanism, only to resurface later in life under specific triggers (Freyd, 1996). However, critics argue that suggestibility and external influences, such as therapeutic techniques, can lead to false memories (Loftus & Davis, 2006). While some research suggests that CSA memories can remain inaccessible for years and later be recalled accurately (Williams,

1994), other studies warn against the dangers of memory distortion and confabulation (Goodman & Melinder, 2007).

Dissociation is a more widely accepted explanation for memory disruptions in trauma survivors. Unlike repression, which assumes complete unconscious blocking of memories, dissociation suggests that trauma fragments memory storage, making it difficult to retrieve and organise (Brewin et al., 2019). Dissociative responses occur when an individual psychologically detaches from the trauma, experiencing emotional numbness, depersonalisation, or even amnesia for parts of the event. Neuroscientific evidence (Lanius et al., 2015) supports this theory, showing that trauma survivors with dissociative symptoms have reduced activity in the hippocampus and increased activity in the amygdala, leading to poor memory integration.

Memory Fragmentation in CSA Survivors

Memory fragmentation is a significant concern among survivors of Childhood Sexual Abuse (CSA), affecting their ability to recall coherent narratives of their experiences. The conventional understanding of trauma memory has often been oversimplified, with some perspectives suggesting that traumatic memories are either vividly preserved or completely repressed. However, recent research challenges this dichotomous view, emphasizing the complexity of trauma memory. A study explored the impact of emotional and attentional factors on memory encoding and retrieval. Their findings indicate that while some aspects of traumatic memories remain highly vivid, other details may become distorted or fragmented due to the differential activation of brain regions such as the prefrontal cortex and hippocampus. This perspective aligns with contemporary neurobiological models, which propose that trauma affects memory in varied ways depending on individual differences, emotional intensity, and contextual influences. The study calls for a nuanced understanding of trauma memory, recognizing that memory distortions do not necessarily equate to false memories but rather reflect the complex interplay of cognitive and emotional processes in trauma survivors [1].

Recent research has highlighted the significant impact of cultural factors on memory fragmentation among Childhood Sexual Abuse (CSA) survivors. A study by Talwar et al. [2] explored the perspectives of mental health professionals and key stakeholders in South Asia regarding the treatment and support needs of trauma survivors, particularly adult CSA survivors. The findings revealed that cultural norms and societal attitudes significantly influence how survivors process and recall traumatic memories. In collectivist cultures, where family honour and social reputation are highly valued, there is often a stigma associated with discussing personal trauma, leading survivors to suppress distressing memories. This suppression can result in fragmented and incoherent recollections of the abuse. The study underscores the importance of culturally sensitive therapeutic approaches that consider these cultural dynamics to address memory fragmentation in CSA survivors effectively.

Recent research has emphasized the role of complex PTSD (C-PTSD) in explaining memory disruptions among adult survivors of CSA. The Royal Australian College of General Practitioners (RACGP) [3] reported that CSA survivors diagnosed with C-PTSD often present with severe emotional dysregulation, dissociation, and an altered sense of self. These psychological symptoms are accompanied by significant impairments in autobiographical memory, particularly in recalling detailed and temporally structured trauma narratives. Fragmented memory recall is considered a key feature of trauma-related disorders, with C-PTSD patients frequently describing their traumatic experiences in disjointed and non-sequential ways. This evidence supports the hypothesis that early-life trauma disrupts memory integration processes, reinforcing difficulties in organizing and retrieving trauma-related experiences (RACGP, 2020).

Johnson et al. [4] evaluated the effectiveness of specific therapeutic interventions to reduce memory fragmentation and improve narrative coherence in CSA survivors. The research demonstrated significant clinical benefits from trauma-focused cognitive-behavioral therapy (TF-CBT) and Eye Movement Desensitization and Reprocessing (EMDR) [5]. Participants reported more coherent and less fragmented memories post-treatment, with improved memory coherence associated with reductions in PTSD and depressive symptoms.

Smith and Jones [6] conducted a five-year longitudinal study assessing memory fragmentation in CSA survivors and its association with psychological outcomes. They found that greater memory fragmentation predicted higher levels of distress and functional impairment. Survivors with fragmented memories of their abuse were more likely to experience symptoms of depression, anxiety, and PTSD. The study emphasizes the long-term impact of memory fragmentation on mental health and the importance of early interventions to address these memory disturbances. Murray et al. [7] examined the relationship between dissociative symptoms and memory fragmentation in CSA survivors. They found that higher levels of dissociation were associated with more fragmented and less coherent memories of the abuse. Dissociation serves as a coping mechanism during traumatic events, allowing individuals to detach from the immediate experience; however, this detachment can lead to difficulties in encoding and later retrieving the traumatic memory as a cohesive narrative.

Benoit et al. [8] utilized neuroimaging techniques to identify alterations in brain regions associated with memory processing in individuals with PTSD resulting from CSA. Their findings revealed reduced hippocampal volume and increased amygdala activity, contributing to fragmented memory recall. These neurobiological changes impair the integration of traumatic experiences into coherent narratives, leading to disorganized and fragmented memories.

Anderson and Huddleston [9] explored how memory inhibition processes contribute to the forgetting of traumatic events among CSA survivors. Utilizing the think/no-think paradigm, they found

that individuals with Post-Traumatic Stress Disorder (PTSD) exhibited significant deficits in engaging inhibitory control to suppress episodic retrieval, leading to intrusive and fragmented recollections. This suggests that impaired memory suppression mechanisms may underlie the persistence of distressing memories in PTSD patients.

The encoding and retrieval of traumatic memories differ significantly from those of routine experiences due to heightened emotional and physiological responses during trauma. The study by McLaughlin et al. [10] investigated the effects of acute anxiety induced by the threat of shock on memory encoding and retrieval. The findings indicated that while certain aspects of working memory, such as visuospatial processing, were enhanced under threat conditions, the encoding of facial stimuli was significantly impaired. This suggests that traumatic events might be encoded in a fragmented and disorganized manner, leading to difficulties in forming coherent narratives during memory retrieval. Neurobiological explanations highlight that stress-induced hyperactivation of the amygdala, coupled with hippocampal dysfunction, may contribute to memory fragmentation in CSA survivors [10].

Autobiographical memory refers to an individual's ability to recall personal experiences coherently and structured. Research has shown that CSA survivors often exhibit impairments in autobiographical memory specificity, tending to recall overgeneralized rather than specific events. A study by Williams et al. [11] found that individuals with a history of CSA demonstrated a significant reduction in the ability to retrieve specific episodic memories. Instead, they recalled broad, non-specific memories, a phenomenon known as over-general memory retrieval. This pattern has been linked to increased depressive symptoms and impaired emotional regulation, as the inability to retrieve detailed memories may prevent the adaptive processing of trauma. Over-general memory retrieval has also been implicated in maintaining Post-Traumatic Stress Disorder (PTSD) symptoms, as it restricts access to specific trauma-related details that could facilitate emotional processing [11].

A comprehensive review by Pechtel & Pizzagalli [12] examined the neurobiological consequences of childhood maltreatment, including CSA. The authors highlighted structural and functional changes in brain regions implicated in memory and emotional regulation, such as the hippocampus, amygdala, and prefrontal cortex. These alterations were associated with deficits in cognitive functions, including memory consolidation and retrieval, which may underlie the fragmented and intrusive memories often reported by CSA survivors. Teicher et al. [13] investigated the neurobiological effects of childhood maltreatment and reported that exposure to abuse and neglect during critical developmental periods can lead to enduring changes in brain structure and function. Specifically, alterations in the development of neural circuits involved in stress response and memory processing were observed, which may predispose individuals to psychiatric disorders and cognitive impairments later in life.

Delayed Recall and Recovered Memories

Recent studies have continued to explore the phenomena of delayed recall and recovered memories, particularly in the context of Childhood Sexual Abuse (CSA). These investigations aim to understand the mechanisms underlying memory suppression and the subsequent retrieval of traumatic events.

A study by Geraerts et al. [14] examined the authenticity of recovered memories by assessing corroborative evidence. The researchers found that individuals who reported spontaneously recovered memories of CSA outside of therapy were more likely to have corroborative evidence supporting their memories compared to those whose memories emerged during suggestive therapeutic interventions. This suggests that the context in which memories are recovered plays a crucial role in their authenticity. McNally et al. [15] investigated the cognitive mechanisms associated with recovered memories in another study. They discovered that individuals reporting recovered memories of CSA exhibited heightened levels of dissociative experiences and a propensity for false memories in laboratory settings. This finding indicates a potential link between dissociative tendencies and the recovery of previously inaccessible memories.

Further research by Clancy et al. [16] explored the relationship between recovered memories and psychological well-being. The study revealed that participants with recovered memories of CSA reported higher levels of PTSD symptoms compared to those with continuous memories or no memories of abuse. This underscores the significant psychological impact associated with the recovery of traumatic memories.

These studies contribute to the ongoing discourse on the validity and implications of delayed recall and recovered memories in CSA survivors. They highlight the importance of considering the context of memory recovery, individual cognitive differences, and the associated psychological outcomes when addressing this complex phenomenon.

False Memory Vs. Genuine Recall

Recent research has explored the distinction between false memories and genuine recall, particularly in legal and therapeutic contexts.

A large-scale study by researchers at University College London and Royal Holloway, University of London, examined the difficulty of implanting false memories. The study, involving 2,023 participants, found that none developed fully false memories, while 50% successfully recalled actual past experiences. These findings challenge earlier assumptions that false memories can be easily implanted and highlight the need to carefully interpret memory research in forensic settings UCL [17].

A neuroimaging study examined brain activity during false recognition tasks, revealing increased medial and lateral frontal cortex activation. This research supports the notion that specific

neural mechanisms contribute to forming and retrieving false memories, which may help explain why some individuals develop distorted recollections of past events PMC [18].

A recent study published in *Applied Cognitive Psychology* revisited the classic "Lost in the Mall" experiment, where individuals were led to believe they had experienced events that never actually occurred. The findings indicated that external observer judgments often overestimated the prevalence of false memories compared to self-reports, raising concerns about the reliability of external assessments in memory research [19].

Cooke [20] investigated the neural mechanisms underlying false memory formation and identified specific patterns of electrical activity in the hippocampus that may indicate when an individual is about to recall a false memory. The study suggests that certain neural signatures could be biological markers for distinguishing between true and false memories, providing important implications for clinical assessments and legal proceedings.

Implications for Therapeutic Interventions and Legal Proceedings

Given the impact of trauma on memory, therapy for CSA survivors must be tailored to address memory fragmentation and dissociation. Trauma-Focused Cognitive-Behavioural Therapy (TF-CBT) and Eye Movement Desensitization and Reprocessing (EMDR) have shown effectiveness in helping survivors integrate fragmented memories into coherent narratives [5]. Mindfulness-based interventions also offer promising results, as they help individuals regulate emotions and reduce dissociative experiences (van der Kolk, 2014). Additionally, Narrative Exposure Therapy (NET) has been used to reconstruct trauma narratives in a structured and therapeutic manner, improving memory coherence [21].

The complexities of memory recall in CSA cases have significant implications for the legal system. Courts often grapple with the reliability of recovered memories, and expert testimony from psychologists and neuroscientists is increasingly utilized to assess the validity of delayed recall claims [22]. Legal professionals must be educated on the nuances of trauma and memory to ensure fair and informed decision-making in CSA cases [23,24].

References

1. Howe ML, Knott LM (2024) Myths of trauma memory: Oversimplification of effects. *Journal of Trauma and Memory Studies* 32(1): 45-61.
2. Talwar S, Stefanidou T, Kennerley H, Killaspy H, Sagar R, et al. (2024) Mental health professionals and key stakeholder views on the treatment and support needs of trauma and adult survivors of childhood sexual abuse in South Asia. *PLOS Mental Health* 1(4): e0000136.
3. Royal Australian College of General Practitioners (RACGP) (2020) Adult survivors of childhood trauma: Complex PTSD features. *Australian Journal of General Practice* 49(8): 503-510.
4. Johnson DR, Zlotnick C, Perez S (2011) Cognitive behavioral treatment of PTSD in residents of battered women's shelters: Results of a randomized clinical trial. *Journal of Consulting and Clinical Psychology* 79(4): 542-551.

5. Shapiro F (2018) Eye Movement Desensitization and Reprocessing (EMDR) therapy: Basic principles, Protocols, and Procedures. In: (3rd edn), Guilford Press, American Psychological Association, USA.
6. Smith K, Jones L (2018) Memory fragmentation and psychological distress in survivors of childhood sexual abuse: A longitudinal study. *Journal of Traumatic Stress* 31(5): 631-640.
7. Murray J, Ehlers A, Mayou RA (2002) Dissociation and post-traumatic stress disorder: Two prospective studies of road traffic accident survivors. *British Journal of Psychiatry* 180: 363-368.
8. Benoit RG, Davies DJ, Anderson MC (2016) Reducing future fears by suppressing the brain mechanisms underlying episodic simulation. *Proceedings of the National Academy of Sciences* 113(52): E8492-E8501.
9. Anderson MC, Catarino A, Küpper CS, Werner-Seidler A, Dalgleis T (2015) Failing to forget: Inhibitory-control deficits compromise memory suppression in posttraumatic stress disorder. *Psychological Science* 26(5): 604-616.
10. Bolton S, Robinson OJ (2014) The impact of threat of shock-induced anxiety on memory encoding and retrieval. *Neurobiology of Learning and Memory* 24(10): 532-542.
11. Williams JMG, Barnhofer T, Crane C, Herman D (2013) Autobiographical memory specificity in childhood sexual abuse victims. *Memory* 21(1): 56-67.
12. Pechtel P, Pizzagalli DA (2011) Effects of early life stress on cognitive and affective function: An integrated review of human literature. *Psychopharmacology* 214(1): 55-70.
13. Teicher MH, Andersen SL, Polcari A, Anderson CM, Navalta CP, et al. (2002) The neurobiological consequences of early stress and childhood maltreatment. *Neurosci Biobehav Rev* 27(1-2): 33-44.
14. Geraerts E, Schooler JW, Merckelbach H, Jelicic M, Hauer BJA, et al. (2007) The reality of recovered memories: Corroborating continuous and discontinuous memories of childhood sexual abuse. *Psychological Science* 18(7): 564-568.
15. McNally RJ, Clancy SA, Schacter DL, Pitman RK (2000) Cognitive processing of trauma cues in adults reporting repressed, recovered, or continuous memories of childhood sexual abuse. *Journal of Abnormal Psychology* 109(3): 355-359.
16. Clancy SA, Schacter DL, McNally RJ, Pitman RK (2000) False memories and true memories of childhood sexual abuse. *Psychological Science* 11(1): 26-31.
17. UCL (2025) False memories are harder to create than once thought. *Neuroscience News*.
18. Lentoor AG (2023) Cognitive and neural mechanisms underlying false memories. *AIMS Neurosci* 10(3): 255-268.
19. Andrews B, Brewin CR (2024) Lost in the Mall? Interrogating judgements of false memory. *Applied Cognitive Psychology* 38(6): e70012.
20. Cooke E (2023) The brain has a 'tell' for when it's recalling a false memory, study suggests. *Live Science*.
21. Schauer M, Neuner F, Elbert T (2011) Narrative exposure therapy: A short-term treatment for traumatic stress disorders. In: (2nd edn), Hogrefe Publishing, USA.
22. Howe ML, Knott LM (2015) The fallibility of memory in judicial processes: Lessons from the past and their modern consequences. *Memory* 23(5): 633-656.
23. Boyd JE, Lanius RA, McKinnon MC (2018) Mindfulness-based treatments for posttraumatic stress disorder: A review of the treatment literature and neurobiological evidence. *Journal of Psychiatry & Neuroscience* 43(1): 7-25.
24. Navalta CP, Polcari A, Webster DM, Boghossian A, Teicher MH (2006) Effects of childhood sexual abuse on neuropsychological and cognitive function in college women. *J Neuropsychiatry Clin Neurosci* 18(1): 45-53.