



QUICK LITERATURE
CITATIONS FOR
CLINICIAN EVALUATORS
TO INCLUDE IN MEDICAL
AFFIDAVITS

Literature Review on the Impact of Trauma and Psychiatric Diagnoses on Memory and the Ability to Testify in Asylum Seekers

Attached is a literature review library looking at the impact of trauma and psychiatric diagnoses on memory, concentration, and the ability to testify.

Link to the Zotero library: [Impact of Trauma and Psychiatric Diagnoses on Memory in Asylum Seekers](#)

- Click on the "Group Library" link just below the title. Once the library is open, click on the "Impact of Trauma and Psychiatric Diagnoses on Memory in Asylum Seekers" folder and you will see several subfolders containing key articles on each topic.

Topics Included:

- General impact of trauma on memory/ability to testify
- Impact of depression on memory/ability to testify
- Impact of head trauma/TBI on memory/ability to testify
- Impact of PTSD on memory/ability to testify

A bibliography with key points of the included articles is below.

Bibliography: Impact of Trauma on Memory Literature Review

General Impact of Trauma on Memory/Ability to Testify

1. Saadi A, Hampton K, de Assis MV, Mishori R, Habbach H, Haar RJ. Associations between memory loss and trauma in US asylum seekers: A retrospective review of medico-legal affidavits. PLoS One. 2021;16(3). doi:10.1371/journal.pone.0247033

- Research article specifically characterizing prevalence of neuropsychiatric diagnoses of U.S. asylum applicants. 69% (n = 132) of asylum-seekers received a diagnosis of PTSD, 55% (n = 106) of depression, 68% (n = 131) reported being subject to physical violence, and 20% (n = 39) were at risk of suicide.
- Memory loss was documented among 21% (n = 40) asylum-seekers. Both PTSD and depression, but not head trauma, were associated with memory loss.
- Memory loss in asylum seekers' affidavits presented as "memory gaps of the traumatic event, challenges with presenting a clear chronology of the trauma, avoidance of traumatic memories, and persistent short-term memory loss interfering with daily activity."

2. Cohen J. Questions of Credibility: Omissions, Discrepancies and Errors of Recall in the Testimony of Asylum Seekers. *International Journal of Refugee Law*. 2001;13. doi:10.1093/ijrl/13.3.293

- Review article in *International Journal of Refugee Law* citing the large body of evidence linking memory issues to events and diagnoses commonly experienced in Asylum Seekers: PTSD, minor traumatic brain injury, depression, weight loss, malnutrition, sleep deprivation, and chronic pain.
- "In effect..., this review concludes that credibility assessment by the determination of accuracy and reproducibility of an asylum seekers' recall is not a valid component of asylum decision making" (p 18).

3. Moore SA, Zoellner LA. Overgeneral Autobiographical Memory and Traumatic Events. *Psychol Bull*. 2007;133(3):419-437. doi:10.1037/0033-2909.133.3.419

- This evaluative review assesses 24 studies, exploring the question, "Does trauma exposure impair retrieval of autobiographical memories?"
- Main finding is that PTSD and depression are more consistently associated with overgenerality, rather than trauma exposure in itself.

4. Graham B, Herlihy J, Brewin CR. Overgeneral memory in asylum seekers and refugees. *J Behav Ther Exp Psychiatry*. 2014;45(3):375-380. doi:10.1016/j.jbtep.2014.03.001

- In refugees and asylum seekers, those with PTSD and depression had lower autobiographical memory specificity.
- Those with PTSD failed more frequently to report any memory, in other words, a greater proportion of omissions
- Main Conclusion: "Lower memory specificity observed in people experiencing PTSD and depression in western populations extends to asylum seekers and refugees from diverse cultural backgrounds. This study adds to the literature suggesting that being recognised as a refugee fleeing persecution is more difficult for those with post-traumatic symptoms and depression."

5. Christianson Sven-åke, Loftus EF. Memory for traumatic events. *Applied Cognitive Psychology*. 1987;1(4):225-239. doi:<https://doi.org/10.1002/acp.2350010402>

- Research article comparing memory of traumatic events vs. non-traumatic versions of same event.
- When a specific event is encoded and stored as a memory under stressful conditions, recollection of certain aspects of the traumatic event may be less accurate than those encoded under less stressful conditions.

Those who watched the traumatic version recalled central, thematic details with greater accuracy than those exposed to the non-traumatic version. However, individuals exposed to the traumatic event had more impaired memory, less capable of recognizing many specific, peripheral details.

Impact of Depression on Memory/Ability to Testify

1. Williams JMG, Barnhofer T, Crane C, et al. Autobiographical Memory Specificity and Emotional Disorder. *Psychol Bull.* 2007;133(1):122-148. doi:10.1037/0033-2909.133.1.122

- This review cites over 28 individual studies that validate the close association between overgeneral memory and patients with depression or depressive symptoms. Overgenerality of autobiographical memory in emotionally disturbed patients presents as summarizing categories of events rather than retrieving a single episode.
- Memory may be biased by current mood state, supported by the phenomenon that depressed individuals have difficulty when trying to retrieve specific autobiographical memories.
- Many studies found that suicidal patients have an impaired degree of specificity to personally experienced events when retrieved from memory. For example, an overgeneral response would be "I always enjoy a good party" vs. a specific response would be "Jane's party last Friday."
- Memory remains overgeneral in patients with a history of emotional disorder, implying that even if the patient is not in a current episode of an affective disorder, this impaired autobiographical memory specificity still remains.

2. Gotlib IH, Joormann J. Cognition and Depression: Current Status and Future Directions. *Annual Review of Clinical Psychology.* 2010;6(1):285-312. doi:10.1146/annurev.clinpsy.121208.131305

- In this literature review, the authors describe key features of depressive cognition including but not limited to deficits in working memory, inability to use positive stimuli to regulate negative mood, and ruminative responses to negative mood states and life events.
- Citing multiple individual investigations and meta-analysis studies, there is strong evidence for biased memory processes in depression: preferential recall of negative over positive material and enhanced recall of overgeneral memories, despite instructions to recall specific events.
- A proposed explanation for overgeneral memory in the context of depression is emotion regulation. Individuals attempt to minimize negative affect attached to distressing memories by blocking access to details of these memories or by retrieving them in a less specific way.

3. Millan MJ, Agid Y, Brüne M, et al. Cognitive dysfunction in psychiatric disorders: characteristics, causes and the quest for improved therapy. *Nature Reviews Drug Discovery.* 2012;11(2):141-168. doi:10.1038/nrd3628

- Nature review article that provides an excellent definition of foundational concepts of cognition and explains how cognition and emotion are highly complex constructs that interact — cognitive status can affect emotion processing, and mood changes can affect cognitive function.
- In major depression, cognitive impairments in executive function, episodic memory, and working memory are common, marked characteristics evidenced by six clinical and review publications.
- *Key definitions from this article are included at the end of the bibliography*

4. Association AP. *Diagnostic and Statistical Manual of Mental Disorders (DSM-5®)*. American Psychiatric Pub; 2013.

- Diagnostic criteria for minor depressive episode include “impaired concentration or memory every day”
- Diagnostic criteria for major depressive disorder include diminished concentration, cognition (i.e. memory), and ability to make decisions.

Impact of Head Trauma/TBI on Memory/Ability to Testify

Created by Christine Lui & Eleanor Emery; last updated by Jen Wang & Amritha Gourisankar 8/2022.
Email Eleanor Emery at eemery@challiance.org for potential edits/additions.

1. Semple BD, Zamani A, Rayner G, Shultz SR, Jones NC. Affective, neurocognitive and psychosocial disorders associated with traumatic brain injury and post-traumatic epilepsy. *Neurobiology of Disease*. 2019;123:27-41. doi:10.1016/j.nbd.2018.07.018

- Review article discusses both clinical and preclinical literature that supports the association between traumatic brain injury (TBI) and cognitive impairments.
- This review article lists multiple individual studies as evidence for each cognitive abnormality observed in TBI patients: impairments of attention, speed of information processing, mental fatigue, learning, executive function, problem solving, short-term and working memory, and long-term memory (both anterograde and retrograde amnesia).
- Post-TBI, clinical presentation of these deficits are heterogenous: immediate, delayed, transient, evolving, or permanent.

2. Rabinowitz AR, Levin HS. Cognitive Sequelae of Traumatic Brain Injury. *Psychiatr Clin North Am*. 2014;37(1):1-11. doi:10.1016/j.psc.2013.11.004

- Review article highlighting the cognitive dysfunction following closed head injury in adults, which includes deficits in memory, attention, processing speed, executive functioning, intellectual ability, and awareness of deficit.
- Regarding impact on short term cognition, impaired consciousness and post-traumatic amnesia are neurobehavioral hallmarks in acute TBI, resulting in a gap in memory following the TBI.
- Memory problems, a common complaint following TBI, are specifically characterized as not due to a deficit in memory storage - TBI patients retain the ability to recognize new material - but instead present with difficulties organizing new information for successful encoding and retrieval. This disorganization in memory encoding can manifest as attributing information to the wrong source (i.e. a patient might misremember that a piece of information was told to him by his wife, when it was in fact relayed by his doctor) and conflating different pieces of information (i.e. a patient might mistakenly conflate the appointment date for a doctor's appointment with the appointment time for a salon appointment).

3. Saadi A, Anand P, Kimball SL. Traumatic brain injury and forensic evaluations: Three case studies of U.S. asylum-seekers. *Journal of Forensic and Legal Medicine*. 2021 Apr;79:102139. doi: 10.1016/j.jflm.2021.102139. PMID: 33740607.

- Article with three case vignettes highlighting the different ways TBI can manifest along with sequelae such as depression/suicidal ideation, PTSD, persistent post-concussive symptoms, and post-traumatic epilepsy.
- It's important to elicit a specific history of TBI in order to identify symptoms (somatic symptoms such as headaches, sleep disruptions, dizziness, nausea, visual disturbance, photophobia, phonophobia; cognitive symptoms such as increased distractibility, slow processing speed, difficulty concentrating/multitasking; affective symptoms such as increased irritability, emotional lability, anxiety, depression) following TBI that could be attributed to other medical/psychiatric conditions and to document the sequelae to contextualize the testimony of asylum seekers.
- Evaluation of extracranial pathologies such as ophthalmic injury, ear injury, cervical disorders, vestibular disorders, and sleep disorders can add evidence to support a history of TBI.

4. McInnes K, Friesen CL, MacKenzie DE, Westwood DA, Boe SG. Mild Traumatic Brain Injury (mTBI) and chronic cognitive impairment: A scoping review. *PLoS One*. 2017 Apr 11;12(4):e0174847. doi: 10.1371/journal.pone.0174847. Erratum in: *PLoS One*. 2019 Jun 11;14(6):e0218423. PMID: 28399158; PMCID: PMC5388340.

- Literature review that assesses short and long term cognitive function in persons who have experienced at least one mild traumatic brain injury (or concussion).

- The studies show that mild traumatic brain injury (mTBI) effects, including effects on cognitive function, can last well beyond the previously thought 3 months. Approximately half of individuals with a single mTBI in this review demonstrated long-term cognitive impairment.
- It is important to assess long-term sequelae and changes in pre-TBI cognitive function even after 3 months have passed since the mTBI in individuals who have experienced at least one mTBI.

5. Paterno R, Folweiler KA, Cohen AS. Pathophysiology and Treatment of Memory Dysfunction After Traumatic Brain Injury. *Curr Neurol Neurosci Rep.* 2017 Jul;17(7):52. doi:10.1007/s11910-017-0762-x. PMID: 28500417; PMCID: PMC5861722.

- Literature review of experimental animal models examining the impact of TBI on memory, studies on the pathophysiology underlying memory, and therapeutic options to treat memory deficits after TBI.
- The literature demonstrates deficits in various types of memory after a TBI, including working memory, spatial navigation memory, anterograde and retrograde spatial memory, and episodic memory.
- The pathophysiology underlying these specific memory deficits remains unclear: “While there is little doubt that TBI causes memory and cognitive dysfunction, it is difficult to conclude which memory phase i.e., encoding, maintenance or retrieval is specifically altered by TBI.”
- There are therapeutic options to improve memory after a TBI including deep brain stimulation, dietary therapy, neural stem cell transplantation, and environmental enrichment.

Impact of PTSD on Memory/Ability to Testify

1. Moore SA. Cognitive abnormalities in posttraumatic stress disorder. *Current Opinion in Psychiatry.* 2009;22(1):19-24. doi:10.1097/YCO.0b013e328314e3bb

- Literature review between January 2007 and June 2008 citing individual studies and meta-analyses that summarize impairments in memory functioning in individuals with PTSD.
- Similar to those with major depressive disorder, patients with PTSD present with overgeneral autobiographical memory. When intentionally attempting to retrieve a specific autobiographical memory (i.e. "I took a walk in the park yesterday"), these individuals will tend to recall categories of repeated events (i.e. "When I go for walks"). The overgeneral memory in PTSD are related to other cognitive difficulties such as impaired retrieval of semantic autobiographical memory (recollection of personal facts, traits, or general self-knowledge independent of time, place, and sense of re-experiencing a past event).
- This review cites two studies examining source monitoring (memory attribution) in PTSD. Source monitoring is crucial in preventing memory distortion because source information helps us discriminate between imagined vs experienced events, and information learned from reliable vs unreliable sources. These studies demonstrated source errors on trauma-related cues in individuals with PTSD in addition to other decrements in source monitoring.
- "Crucial to recognize that individuals with PTSD may exhibit memory difficulties or inconsistencies that could be inappropriately attributed to symptom malingering"

2. Mohlenhoff BS, Chao LL, Buckley ST, Weiner MW, Neylan TC. Are hippocampal size differences in posttraumatic stress disorder mediated by sleep pathology? *Alzheimer's & Dementia.* 2014;10(3, Supplement):S146-S154. doi:10.1016/j.jalz.2014.04.016

- This article cites individual studies as well as multiple meta-analysis studies that strongly implicate the correlation between PTSD and smaller hippocampal volume. Volumetric differences of the hippocampus may correlate to critical neurophysiology and neuronal function.
- PTSD is characterized by emotional activation from minimal contextual cues. The diagnosis of PTSD is associated with limbic dysfunction, where the contextual contributions of memory from the hippocampus are bypassed.

- The cognitive abnormalities associated with PTSD include but are not limited to decrements in verbal and autobiographical memory, lower general cognitive ability, and impairments in attention. Two individual clinical studies indicate that PTSD increases risk for dementia later in life.

3. Brewin CR. The Nature and Significance of Memory Disturbance in Posttraumatic Stress Disorder. *Annu Rev Clin Psychol.* 2011;7(1):203-227. doi:10.1146/annurev-clinpsy-032210-104544

- In an Annual Review of Clinical Psychology, Brewin delineates three aspects of memory disturbances in individuals with PTSD: memory capacity, memory content, and memory processes.
- Considerable evidence suggest that patients with PTSD and ASD (Acute Stress Disorder) have difficulty "deliberately bringing to mind coherent, well integrated autobiographical memories of the traumatic event"
- Fragmentation and disorganization in trauma narrative are consistently observed in studies when rated by independent observers. In a study comparing PTSD patients to trauma-exposed controls, individuals with the disorder were shown to have greater disorganization in their trauma memories but not in unpleasant, nontraumatic memories. In another study, PTSD patients took longer to retrieve autobiographical memories when listening to a script of their traumatic event than to a script of another very distressing but nontraumatic event, suggesting that the traumatic event memory was less well integrated with other autobiographical material.
- Disorganization in trauma narratives has been related to self-reported dissociation either during or after the traumatic event. This dissociation process is considered itself a risk factor for the development of PTSD.

4. Waldhauser GT, Dahl MJ, Ruf-Leuschner M, et al. The neural dynamics of deficient memory control in heavily traumatized refugees. *Sci Rep.* 2018;8. doi:10.1038/s41598-018-31400-x

- PTSD symptoms in heavily traumatized refugees are related to deficits in the effective control of memory retrieval. This includes deficits in voluntary forgetting (inability to forget memories they had previously tried to suppress), which correlated with memory intrusion in everyday life.
- Results not only included PTSD patients failing to effectively suppress unwanted memories, but also showed deficits in the retrieval practice of desired memories. This observations supports many other studies that found that PTSD patients often show difficulties in remembering sensory and contextual details of non-traumatic episodic memories.

5. Howlett JR, Stein MB. Post-Traumatic Stress Disorder: Relationship to Traumatic Brain Injury and Approach to Treatment. In: Laskowitz D, Grant G, editors. *Translational Research in Traumatic Brain Injury.* Boca Raton (FL): CRC Press/Taylor and Francis Group; 2016. Chapter 16. PMID: 26583182.

- Book chapter/literature review that highlights TBI as a risk factor for PTSD, though the causal mechanisms for how TBI increases risk for PTSD is unclear.
- "An early literature review concluded that PTSD could, indeed, occur after TBI even in the absence of explicit memories of trauma, through nondeclarative memories, fear conditioning occurring outside of awareness, and reconstructed memories of traumatic events"
- Reviews the workup for patients with comorbid TBI and PTSD, which is complicated by the substantial overlap in symptoms of PTSD and post-concussive syndrome.
- PTSD is a mediator between TBI and poor health outcomes/general functional impairment; thus; it is important to treat PTSD in TBI patients. Treatment of comorbid PTSD and TBI is complicated by a number of issues, including overlapping symptoms between PTSD and TBI and the fact that side effects of treatments for one condition may negatively impact the other condition.

6. Association AP. *Diagnostic and Statistical Manual of Mental Disorders (DSM-5®).* American Psychiatric Pub; 2013.

- Diagnostic criteria for Post-Traumatic Stress Disorder includes memory disturbances
- Criterion D1 reads "Inability to remember an important aspect(s) of the traumatic event(s)."

Key Definitions on Cognition

Millan MJ, Agid Y, Brüne M, et al. Cognitive dysfunction in psychiatric disorders: characteristics, causes and the quest for improved therapy. *Nature Reviews Drug Discovery*. 2012;11(2):141-168. doi:10.1038/nrd3628

- **Cognition**: "A suite of interrelated conscious (and unconscious) mental activities, including: pre-attentional sensory gating; attention; learning and memory; problem solving, planning, reasoning and judgment; understanding, knowing and representing; creativity, intuition and insight; 'spontaneous' thought; introspection; as well as mental time travel, self-awareness and meta-cognition (thinking and knowledge about cognition)."
- **Executive function**: "A purposeful, goal-directed operation such as planning, decision making, problem solving, reasoning, concept formation, self-monitoring or cognitive flexibility (adaptive alternation between different strategies, responses and behaviours). Executive function reciprocally interacts with attention and working memory. It includes both initiation of appropriate and suppression of inappropriate responses."
- **Memory**: "Partly separate mechanisms permitting consolidation, retention and retrieval of information from various sensory domains. Short-term memory relates to immediately available information maintained for ~30 seconds. Information retained for longer periods must be consolidated into mechanistically different long-term memory; in principle, this relates to the unlimited (in quantity and in time) capacity to store information."
- **Episodic memory**: "The conscious recollection of experiences linked to times and places in the past — what happened, where and when. It may involve mental time travel back into a situation (known as autobiographical re-experiencing), mirrored by projection into an imagined future (prospective envisioning). As such, it is related to the theory of mind ('travel into' or simulation of other minds). Fully-fledged episodic memory may be a uniquely human trait, but there is evidence for its presence in primates, corvids and even some rodents."
- **Working memory**: "Permits the transient 'online' evaluation, manipulation and synthesis of newly acquired and/or stored information. Working memory operates in short-term memory but the two terms are not synonymous. Working memory is closely interrelated to, and interacts with, attention and executive function."