

PTSD and Dementia

[Wendy McLean](#) | Educator

18/11/20



Post-traumatic stress disorder linked to increased dementia risk

Recent evidence suggests that individuals who have experienced post-traumatic stress disorder (PTSD) are up to twice as likely to develop dementia later in life ([1]).

The research, published in the *British Journal of Psychiatry*, is the first meta-analysis of global evidence on PTSD and dementia risk ([1]).

Thirteen longitudinal studies conducted on four continents, including data from a total of 1,693,678 people, were used to investigate whether a PTSD diagnosis was associated with increased risk of dementia up to 17 years later.

Meta-analyses showed that the risk of being diagnosed with dementia for individuals with a diagnosis of PTSD was 1.61–1.99 times the risk for those without a PTSD diagnosis.

In subgroup analysis, pooled hazard ratios (HR) indicated that veterans with PTSD (HR 1.61) had a lower dementia risk than individuals with PTSD in the general population (HR 2.11). That is, people in the general population with a PTSD diagnosis were twice as likely to develop dementia.

The association remained significant after controlling for several confounders, including gender, age, and history of traumatic brain injury ([1]).

The current study did not investigate the possible causal pathological mechanisms underlying the relationship between PTSD, and these are not yet fully elucidated. PTSD may potentiate neurobiological changes that contribute to the pathogenesis of dementia, such as altered activity of the hypothalamic-pituitary-adrenal (HPA) axis ([2]).

Several neuroimaging studies have found that individuals with PTSD have reduced grey matter volume in the hippocampus, amygdala and anterior cingulate, which are brain regions known to be implicated in memory ([3],[4],[5]). Additionally, PTSD has been linked to impaired cognitive performance in older populations ([6],[7]).

PTSD may also increase susceptibility to oxidative stress, including neuroinflammation, neuronal death, and amyloid-beta ($A\beta$) plaque formation ([8]).

An earlier systematic review found evidence of a bi-directional relationship between PTSD and dementia, suggesting that the two may also share common underlying genetic vulnerability. PTSD increases the risk for late-onset dementia, and dementia increases the risk for delayed-onset PTSD in those who experienced a significant trauma earlier in life ([9]).

The current study has several limitations, including the reliance on observational cohort studies, most of which were retrospective, and the substantial heterogeneity between studies. Nevertheless, the research suggests that PTSD is a potentially modifiable risk factor for dementia, and the effect of early PTSD treatment on preventing or delaying the onset of dementia needs to be a research priority.

References

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