J Acquir Immune Defic Syndr . 2020 Mar 16. doi: 10.1097/QAI.0000000000002346. Online ahead of print.

Cumulative Burden of Depression and Neurocognitive Decline Among Persons With HIV: A Longitudinal Study

Emily W Paolillo 1 2, Elizabeth C Pasipanodya 3, Raeanne C Moore 2, Brian W Pence 4, J Hampton Atkinson 2, David J Grelotti 2, Igor Grant 2, Robert K Heaton 2, David J Moore 2

Affiliations expand

PMID: 32195746 DOI: 10.1097/QAI.0000000000002346

Abstract

Background: Higher cumulative burden of depression among people with HIV (PWH) is associated with poorer health outcomes; however, longitudinal relationships with neurocognition are unclear. This study examined hypotheses that among PWH: 1) higher cumulative burden of depression would relate to steeper declines in neurocognition, and 2) visit-to-visit depression severity would relate to neurocognition within persons.

Setting: Data was collected at a university-based research center from 2002-2016.

Methods: Participants included 448 PWH followed longitudinally. All participants had >1 visit (M=4.97; SD=3.53) capturing depression severity (Beck Depression Inventory-II) and neurocognition (comprehensive test battery). Cumulative burden of depression was calculated using an established method that derives weighted depression severity scores by time between visits and total time on study. Participants were categorized into low (67%), medium (15%), and high (18%) depression burden. Multilevel modeling examined between- and within-person associations between cumulative depression burden and neurocognition over time.

Results: The high depression burden group demonstrated steeper global neurocognitive decline compared to the low depression burden group (b=-0.100, p=0.001); this was driven by declines in executive functioning, delayed recall, and verbal fluency. Within-person results showed that compared to visits when participants reported minimal depressive symptoms, their neurocognition was worse when they reported mild (b=-0.12 p=0.04) or moderate-to-severe (b=-0.15, p=0.03) symptoms; this was driven by worsened motor skills and processing speed.

Conclusions: High cumulative burden of depression is associated with worsening neurocognition among PWH, which may relate to poor HIV-related treatment outcomes. Intensive interventions among severely depressed PWH may benefit physical, mental, and cognitive health.