

## **A COMPARISON OF PSYCHIATRIC SYMPTOMS AMONG CHIMPANZEES LIVING IN THE WILD AND SANCTUARIES**

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There is an ethical imperative to understand potentially adverse effects of captivity, experimentation, and other factors on chimpanzees. As a result of a common evolutionary history, chimpanzees have neuroanatomical structures and physiological mechanisms associated with human mood and anxiety disorders. Previously, we presented pilot study results examining chimpanzees previously living in laboratories whose behaviors appeared to conform to psychiatric disorders including depression, post-traumatic stress disorder (PTSD), and other anxiety disorders. Here, we describe the methodology for how we have applied criteria for these disorders to chimpanzees. We have relied on methods formerly employed for the development of alternate criteria for PTSD for young children. We address two questions: (1) Do chimpanzees develop post-traumatic symptoms expressed in the form of psychiatric disorders? (2) If they do, are Diagnostic and Statistical Manual of Mental Disorders, Volume IV (DSM-IV) criteria for these disorders adequate to describe post-traumatic disorders in chimpanzees? The diagnostic criteria were applied to published case reports of 12 chimpanzees, identified through "PrimateLit" using the index term "nonadaptive" and designated inclusion criteria. Additionally, we developed less subjective and more behaviorally-anchored alternative criteria that were applied to the published case reports and separately in chimpanzees living in wild sites in Africa (n=106), chimpanzees living in sanctuary sites in Africa (n=89), and chimpanzees previously living in laboratories and currently in sanctuaries (n=95). For each of these phases, we assessed validity and reliability, as possible, to determine the most appropriate criteria for the assessment of psychiatric disorders in chimpanzees.

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