Cortical brain structure and sexual orientation in adult females with bipolar disorder or attention deficit hyperactivity disorder

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Abstract

BACKGROUND:
Nonheterosexual individuals have higher risk of psychiatric morbidity. Together with growing evidence for sexual orientation-related brain differences, this raises the concern that sexual orientation may be an important factor to control for in neuroimaging studies of neuropsychiatric disorders.

METHODS:
We studied sexual orientation in adult psychiatric patients with bipolar disorder (BD) or ADHD in a large clinical cohort (N = 154). We compared cortical brain structure in exclusively heterosexual women (HEW, n = 29) with that of nonexclusively heterosexual women (nHEW, n = 37) using surface-based reconstruction techniques provided by FreeSurfer.

RESULTS:
The prevalence of nonheterosexual sexual orientation was tentatively higher than reported in general population samples. Consistent with previously reported cross-sex shifted brain patterns among homosexual individuals, nHEW patients showed significantly larger cortical volumes than HEW in medial occipital brain regions.

CONCLUSION:
We found evidence for a sex-reversed difference in cortical volume among nonheterosexual female patients, which provides insights into the neurobiology of sexual orientation, and may provide the first clues toward a better neurobiological understanding of the association between sexual orientation and mental health. We also suggest that sexual orientation is an important factor to consider in future neuroimaging studies of populations with certain mental health disorders.