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# Depression in Cerebral Glioma Patients: A Systematic Review of Observational Studies.

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### Abstract

**Background** Depression is a common and important complication of primary cerebral glioma. However, observational studies of this relationship have not been systematically reviewed. **Methods** We searched MEDLINE, EMBASE, and PsycINFO for all English-language cross-sectional, case-control, and cohort studies of depression in adults with primary glioma published between January 1, 1980, and September 16, 2009. We identified 42 eligible studies that recruited 4089 individual glioma patients. We conducted a narrative review of these studies regarding the heterogeneity in diagnostic methods, the frequency of depression and its clinical associations, and the quality of study reporting. **Results** Most studies of depression in adults with glioma were small, cross-sectional, or retrospective. Depression was most often measured using the Hospital Anxiety and Depression Scale (HADS; n = 10 studies). The Beck Depression Inventory, another frequently used screening instrument, returned a higher frequency of depression (median = 39%, range = 38%-42%) than the Hospital Anxiety and Depression Scale (median = 16%, range = 0%-21%). At clinical interview, the median frequency of depression in glioma was 15% (range = 6%-28%). Depression was consistently associated with reduced physical function, cognitive impairment, and reduced quality of life. It may be associated with reduced survival, although evidence for this association was modest. There was an absence of clear associations between depression and many tumor-related variables. Few observational studies examined the treatment of depression in glioma patients. Multivariable analyses were rare, and study reporting was of variable quality. **Conclusions** In glioma, mild to moderate depressive symptoms may only rarely be due to tumor-associated structural or functional disruption of neuronal emotional networks. Improved methodological reporting would help clinicians better evaluate future studies, and facilitate improved evidence-based care of depressed glioma patients.

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