Review Neurosurg Rev. 2024 May 10;47(1):209. doi: 10.1007/s10143-024-02440-x.

# Glioblastoma: a comprehensive approach combining bibliometric analysis, Latent Dirichlet Allocation, and HJ-Biplot : Glioblastoma insights and trends: a 49-year bibliometric analysis

Karime Montes-Escobar [1 2], Javier de la Hoz-M [2 3], Paul Castillo-Cordova [4 5], Julia Patricia Duran-Ospina [6], Rosalba Karen Bravo-Saltos [1], German Josuet Lapo-Talledo [7], Aline Siteneski [8 9]

Affiliations

PMID: 38724684 DOI: 10.1007/s10143-024-02440-x

## Abstract

Glioblastoma is a common and aggressive malignant central nervous system tumor in adults. This study aims to evaluate and analyze the scientific results, collaboration countries, main research topics, and topics over time reported about glioblastoma. A bibliometric analysis of glioblastoma publications was performed mainly using R and Multbiplot software for author, journal, and resume. Associated statistic methods Latent Dirichlet Allocation (LDA) and HJ-Biplot. Inclusion criteria were research articles from the PubMed database published in English between 1973 and December 2022. A total of 64,823 documents with an annual growth rate of 8.27% indicates a consistent increase in research output over time. The results for the number of citations and significant publications showed Cancer Res, J Neuro-Oncol, and Neuro-Oncology are the most influential journals in the field of glioblastoma. The countries that concentrated research were the tumor United States, China, Germany, and Italy. Finally, there has been a marked growth in studies on prognosis and patient survival, therapies, and treatments for glioblastoma. These findings reinforce the need for increased global resources to address glioblastoma, particularly in underdeveloped countries. Glioblastoma research's exponential growth reflects sustained interest in early diagnosis and patient survival.

**Keywords:** Bibliometric; Glioblastoma; Patient survival; Tumor treatment.