Global Trends in Alpha-Synuclein Research: Analyzing International Contributions to Parkinson's Disease Studies

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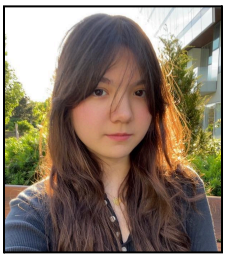

This study aims to explore the global distribution and trends in Parkinson's disease research, specifically focusing on studies related to the protein alpha-synuclein, which is associated with aggregation into Lewy bodies that lead to neuronal damage in Parkinson's disease. We analyzed deposition data from the RCSB Protein Data Bank (RCSB PDB), including the number and method of alpha-synuclein structures submitted by authors affiliated with various countries. Our objective was to examine which countries are leading in alpha-synuclein research, the potential factors influencing these contributions, and how research prioritization may correlate with national resources and disease prevalence. Methodologically, data was collected on alpha-synuclein deposits in the PDB, documenting the methods used, deposition dates, and the primary country affiliations of the contributing authors. To interpret these findings, we graphed deposition data over time and compared trends across countries. Results indicate that the United States and China lead in alpha-synuclein research contributions, followed by European Union countries and the United Kingdom. There is a noticeable increase in alpha-synuclein depositions from 2016 onward, reflecting a growing scientific focus on Parkinson's disease. We plan to complete a comparative analysis between the number of deposits and country-specific factors, such as population size, gross domestic product (GDP), national research budget, and Parkinson's disease prevalence. In conclusion, the study highlights disparities in research contributions, which may relate to a combination of economic, demographic, and health burden factors. Understanding these patterns could inform international collaborations and guide policymakers in allocating resources for neurodegenerative disease research. This approach may ultimately enhance global efforts toward advancing Parkinson's disease treatment and understanding its underlying mechanisms.

References:

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