

Research on Dementia and Major Neurocognitive Disorders: Past, Present, and Future

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Dementias and major neurocognitive disorders are among the most significant current health, social and scientific challenges due to their increasing prevalence in the population and their impact on healthcare systems (Wimo et al., 2023). These diseases are characterized by a progressive decline in cognitive functions such as memory, language, attention, executive functions and the ability to function independently in daily life (Schneider, 2022). Furthermore, population ageing is contributing to a sustained increase in their prevalence, which is projected to lead to a significant rise in the number of people affected over the coming decades (GBD 2019 Dementia Forecasting Collaborators, 2022). This highlights the urgent need to strengthen research, prevention and care for these conditions.

In this context, scientific research has become an essential tool for understanding the causes of these diseases, improving diagnosis and developing more effective treatments (Frisoni et al., 2025). Interest in neurodegenerative diseases dates back more than a century. In 1906, the German neurologist Alois Alzheimer presented the case of a patient named Auguste Deter who exhibited severe memory and behavioural problems. Since then, dementia research has evolved remarkably, incorporating significant advances in neurology, neuropsychology and neuroimaging (Wu & Fuh, 2025).

Research into neurodegenerative diseases is currently primarily focused on developing treatments that alter the progression of these conditions. This represents a shift away from the traditional approach of solely alleviating cognitive or behavioural symptoms (Jack et al., 2024). In this regard, Waury et al. (2022) observe that recent advances have improved the understanding of how the brain functions, identified risk factors, developed more accurate diagnostic tools and created new therapeutic options.

In addition to identifying biomarkers and new therapeutic targets for early intervention, researchers are designing non-pharmacological interventions, such as cognitive stimulation programmes, neuropsychological rehabilitation, adapted exercise, occupational therapy and caregiver support, which can significantly improve patients' quality of life. Therefore, research involves not only seeking new drugs, but also optimizing the comprehensive care received by affected individuals and their families (Larson, 2023).

In this regard, Chen et al. (2024) reviewed recent advances in the early diagnosis of Alzheimer's disease. They emphasized that, despite these advances, much remains unknown about the mechanisms underlying progressive neuronal loss. Furthermore, they noted that dementias significantly impact individuals, families and the economy, requiring support for daily activities.

Building on this idea, El-Hayek et al. (2019) analyzed the global socioeconomic costs of Alzheimer's disease and other related dementias, as well as their strategic implications for various stakeholders. They concluded that research is the primary driver of progress in understanding dementias and major

neurocognitive disorders in the absence of a cure for neurodegenerative diseases.

Although significant challenges remain, each new discovery brings the scientific community closer to achieving their goal of preventing, delaying or even curing these diseases. Investing in research is therefore not only a scientific necessity, but also a social responsibility in the face of one of the greatest public health challenges of the 21st century.

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