

## **Impact of Depression on Cognitive Impairment in patients with Atrial Fibrillation: Implications for Holistic Patient Care and Mental Health Interventions.**

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**Abstract :** Introduction: Depression is a significant mental health condition that not only affects emotional well-being but also has far-reaching implications for physical health, particularly in patients with chronic conditions like atrial fibrillation (AF). Despite substantial evidence linking depression to cardiovascular diseases, its role in the development and progression of cognitive impairment (CI) in AF patients remains underexplored. This dissertation aims to investigate how depression contributes to the onset and severity of cognitive decline among individuals with AF, focusing on the pathways through which mental health can influence cognitive outcomes in this population. Methodology: The study employs a systematic review and meta-analysis methodology to synthesize data from multiple studies on depression, AF, and cognitive impairment. Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, studies were identified, screened, and selected based on predefined eligibility criteria. The meta-analysis integrates quantitative data from these studies to estimate the overall effect size of depression on cognitive decline in AF patients, while subgroup analyses explore how factors like age, sex, and severity of depression might influence the observed associations. Results: The study demonstrates that AF patients, with coexisting depression, have a significantly higher risk of developing cognitive impairment compared to those without depression (OR: 2.23, 95 % CI: 1.54-3.21,  $p < 0.01$ ;  $I^2=99\%$ ). The findings also suggest that depressive symptoms may exacerbate cognitive decline through mechanisms such as chronic inflammation, neurotoxicity, and alterations in cerebral hemodynamics, which impair cerebral blood flow and contribute to neurodegeneration. Conclusions: This work emphasizes the critical importance of integrating mental health assessments into standard AF management protocols, highlighting how addressing depressive symptoms could mitigate cognitive decline and improve overall patient outcomes. This work is particularly relevant to the field of psychological science, as it underscores the profound impact of mental health on physical health outcomes and advocates for a more holistic approach to managing AF. The findings of this dissertation, published in a peer-reviewed journal, offer valuable insights for healthcare professionals, policymakers, and researchers, and provide a foundation for developing clinical guidelines that promote the integration of mental and physical health care.

**Keywords :** Dementia, depression, Atrial fibrillation, meta-analysis

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