

Social isolation as a risk factor for cognitive decline and Alzheimer's disease

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INTRODUCTION & AIM

Physical social isolation is an increasingly evident phenomenon in modern society and represents a significant challenge to mental and cognitive health. Reduced face-to-face social interactions and limited participation in community activities restrict cognitive stimulation and disrupt emotional balance. These changes may contribute to cognitive decline and increase vulnerability to neurodegenerative disorders, particularly among older adults.

The aim of this paper is to analyze the effects of physical social isolation on cognitive health in adults and older adults through a synthesis of scientific literature. The analysis focuses on identifying social, psychological, and biological mechanisms involved and highlighting factors that may be addressed through preventive interventions and cognitive stimulation strategies.

At the social level, older adults experiencing physical isolation face diminished access to support networks and fewer opportunities for intellectual and socially stimulating activities. This reduction in social engagement lowers cognitive resilience and increases exposure to additional risk factors for neurodegenerative processes.

Taken together, these interconnected biological, psychological, and social mechanisms substantially heighten the vulnerability of older adults to cognitive decline and neurodegenerative disorders, including Alzheimer's disease. The evidence underscores the multifactorial nature of physical social isolation and highlights its cumulative impact on cognitive health, emphasizing the need for integrated preventive strategies that address all three domains simultaneously.

METHOD

This paper employs an analysis of the scientific literature, selecting and synthesizing relevant studies published between 2015 and 2025. The review includes research examining the relationship between physical social isolation and cognitive health outcomes in adult and older adult populations. Emphasis is placed on identifying consistent findings across studies, as well as mechanisms linking physical social isolation to cognitive decline and increased risk of Alzheimer's disease.

RESULTS & DISCUSSION

The comprehensive analysis of the scientific literature consistently demonstrates that physical social isolation is associated with deleterious cognitive outcomes in adult and older adult populations. At the biological level, the absence of regular face-to-face social interactions may lead to dysregulation of the stress response and adversely impact brain regions critically involved in memory formation, learning processes, and overall neural plasticity.

From a psychological perspective, social isolation is strongly linked to increased feelings of loneliness and depressive symptoms, which contribute to emotional imbalance, reduced motivation for cognitive engagement, and accelerated cognitive deterioration. These psychological factors act synergistically with biological changes, creating a cumulative negative effect on cognitive function.

Social, psychological, and biological factors associated with cognitive decline

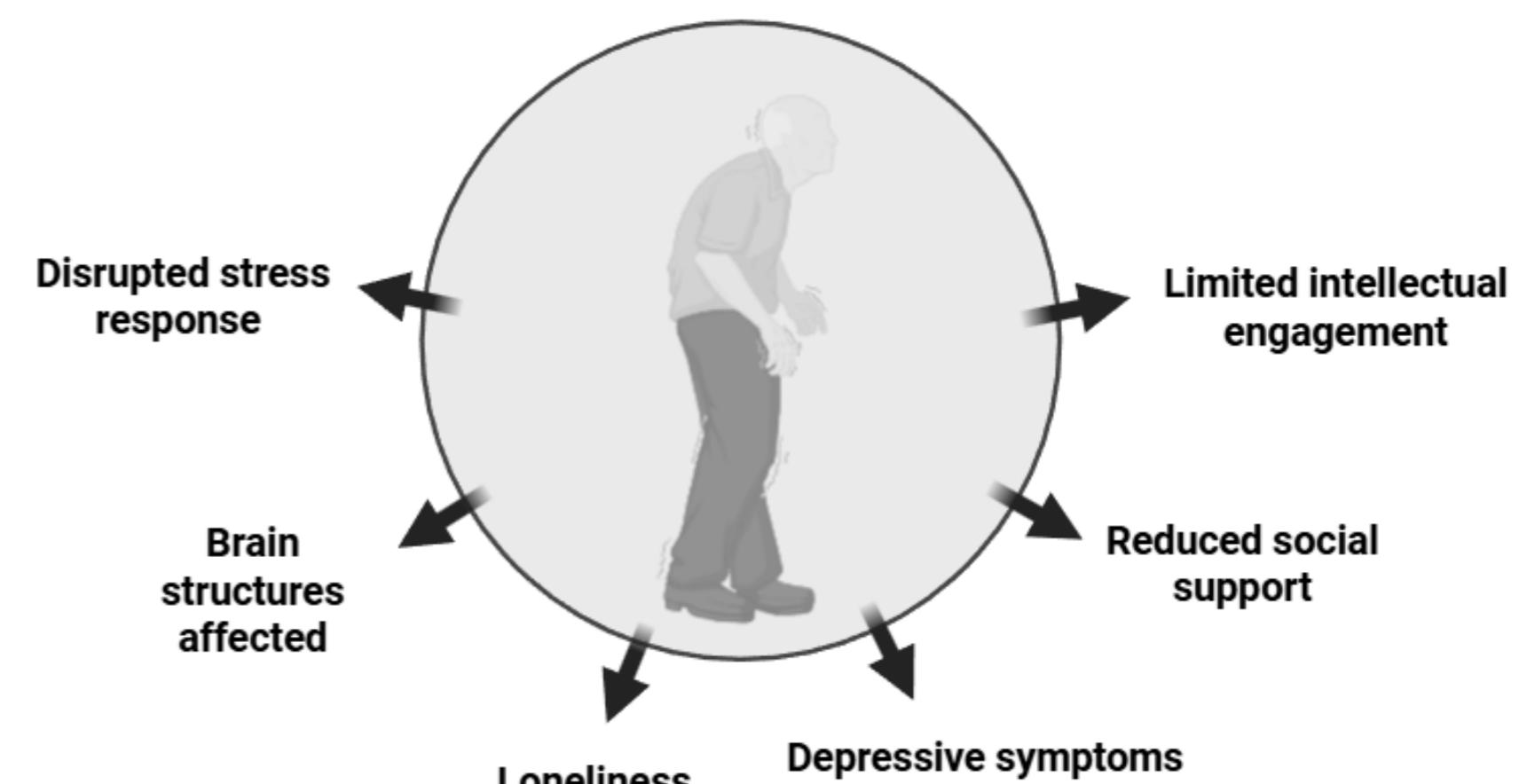


Figure 1. Physical social isolation in older adults and its impact on cognitive health through interacting social, psychological, and biological factors, increasing vulnerability to cognitive decline and Alzheimer's disease.

CONCLUSION

Physical social isolation should be recognized as a significant and complex risk factor for cognitive decline and Alzheimer's disease rather than solely an individual-level issue. The findings underscore the importance of integrated public health strategies that promote social inclusion, community participation, and cognitive stimulation. Coordinated policies, programs, and interventions targeting physical social isolation may play a crucial role in supporting cognitive well-being among older adults.

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