

Suicide and Cognitive Decline: A Comprehensive Review and Meta-Analysis of Incidence and Risk Factors

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Abstract

Suicide risk among individuals with cognitive decline, particularly dementia, represents a significant and under-addressed issue in mental health and geriatric care. This comprehensive review and meta-analysis aim to assess the prevalence of suicide and identify associated risk factors in this population. Through an extensive review of relevant literature and synthesis of data from multiple studies, we found that individuals with dementia experience a markedly higher incidence of suicidal ideation and behavior compared to the general elderly population. Key risk factors identified include the severity of cognitive impairment, comorbid depression and anxiety, social isolation, and poor physical health. Our findings highlight the need for integrated care approaches that address both cognitive and psychological aspects of dementia, along with enhanced support systems for patients and caregivers. This review underscores the importance of early identification and targeted interventions to reduce suicide risk in individuals with cognitive decline and improve their overall quality of life.

Keywords: Cognitive Decline; Dementia; Suicide Risk; Meta-Analysis; Incidence; Risk Factors

Introduction

Suicide is a pressing issue in mental health, with its complexity further compounded by cognitive decline, particularly in individuals with dementia. Dementia, encompassing neurodegenerative conditions such as Alzheimer's disease, vascular dementia, and frontotemporal dementia, leads to progressive cognitive impairment and significant impacts on quality of life. As cognitive functions deteriorate, patients may experience increased psychological distress, potentially elevating the risk of suicidal thoughts and behaviors. Research has indicated that individuals with dementia are at a higher risk of suicide compared to their cognitively intact peers [1]. However, the prevalence of suicidal behavior and the specific risk factors associated with cognitive decline remain areas of concern that require thorough investigation. Understanding the relationship between cognitive decline and suicide involves exploring various dimensions, including the severity of cognitive impairment, the presence of comorbid psychological conditions, social factors, and health-related issues [2]. This comprehensive review and meta-analysis aim to synthesize existing literature on the incidence of suicide among individuals with cognitive decline and identify the key risk factors contributing to this elevated risk. By aggregating data from multiple studies, we seek to provide a clearer understanding of how cognitive decline impacts suicide risk, highlight critical factors influencing this relationship, and inform strategies for prevention and intervention. Addressing these issues is crucial for improving the care and support provided to individuals facing cognitive decline and reducing the incidence of suicide within this vulnerable population [3]. The intersection of cognitive decline and suicidal behavior presents a critical area of concern in mental health and geriatrics. As populations age globally, understanding how cognitive disorders, such as dementia, relate to suicide risk is increasingly important. Cognitive decline, particularly in the context of dementia, can significantly impact quality of life, and the associated risk of suicidal ideation and behavior further compounds the challenges faced by individuals and healthcare providers [4]. This article aims to provide a comprehensive review and meta-analysis of the prevalence and risk factors associated with suicide in individuals experiencing cognitive decline, with a focus on dementia.

Prevalence of suicide in dementia

Dementia encompasses a range of neurodegenerative disorders, including Alzheimer's disease, vascular dementia, and frontotemporal dementia. Each of these conditions affects cognitive functions, and their progression is associated with increased vulnerability to psychological distress and suicidal behavior.

Prevalence rates

General Trends: Studies have consistently shown that individuals with dementia are at a higher risk of suicide compared to the general elderly population. The prevalence of suicide among people with dementia varies depending on the type of dementia and the stage of the disease. Research indicates that individuals with Alzheimer's disease exhibit elevated rates of suicidal ideation and attempts, particularly in the early stages of the disease when cognitive impairment is less severe but emotional distress may be significant. Vascular dementia, often associated with significant cerebrovascular events, shows a higher prevalence of suicidal behavior compared to Alzheimer's disease [5]. This may be linked to the acute onset of cognitive decline and associated mood disorders. Frontotemporal dementia is associated with personality changes and behavioral disturbances, which may contribute to higher suicide rates compared to other forms of dementia.

Risk factors for suicide in cognitive decline

Several factors contribute to the elevated risk of suicide among

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Received: 03-July-2024, Manuscript No: nctj-24-145152, **Editor assigned:** 05-July-2024, Pre QC No: nctj-24-145152 (PQ), **Reviewed:** 19-July-2024, QC No: nctj-24-145152, **Revised:** 25-July-2024, Manuscript No: nctj-24-145152 (R), **Published:** 31-July-2024, DOI: 10.4172/nctj.1000217

Citation: Richard H (2024) Suicide and Cognitive Decline: A Comprehensive Review and Meta-Analysis of Incidence and Risk Factors. Neurol Clin Therapeut J 8: 217.

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individuals with cognitive decline. These factors can be categorized into cognitive, psychological, social, and health-related domains. The progression of cognitive decline is closely related to suicide risk. Early stages may involve awareness of cognitive deficits and associated distress, while advanced stages may lead to loss of insight and increased risk due to impaired judgment [6]. Different types of dementia have distinct impacts on cognition and behavior, influencing suicide risk differently. For instance, individuals with frontotemporal dementia may experience more significant personality changes, increasing their risk.

Psychological factors

Depression and Anxiety: Depression and anxiety are common comorbid conditions in individuals with dementia. These psychological states are strong predictors of suicidal behavior, often exacerbated by the frustration and helplessness associated with cognitive decline [7]. Delusions and hallucinations, particularly in later stages of dementia, can contribute to distress and suicidal behavior. Loneliness and lack of social support are significant risk factors for suicide in dementia patients. Social isolation can exacerbate feelings of worthlessness and despair.

Caregiver Stress: The burden on caregivers can indirectly affect the suicide risk of dementia patients. Strains on caregivers may lead to inadequate support for the patient and increased psychological distress [8].

Health-related factors

Physical Health: Poor physical health and comorbidities can worsen the prognosis of dementia and contribute to increased suicide risk. Chronic pain, mobility issues, and other health problems can add to the distress experienced by individuals with cognitive decline [9].
Medication Side Effects: Certain medications used to manage dementia or related symptoms can have side effects that may influence mood and suicidal thoughts.

Meta-analysis of prevalence and risk factors

To provide a clearer picture of the relationship between suicide and cognitive decline, a meta-analysis was conducted, synthesizing data from various studies on prevalence and risk factors.

Methodology

Study Selection: Relevant studies were identified through a systematic search of medical databases, including PubMed, PsycINFO, and Cochrane Library. Studies included in the meta-analysis were those reporting on suicide rates, ideation, or attempts among individuals with dementia [10].

Data Extraction: Key data points such as prevalence rates, risk factors, and study quality were extracted and analyzed.

Findings: **Prevalence Rates:** The meta-analysis revealed that the overall prevalence of suicide among individuals with dementia is significantly higher than in the general elderly population. Specific types of dementia and stages of cognitive decline show varied prevalence rates. **Risk Factors:** The analysis confirmed that depression, social isolation, and severity of cognitive impairment are strongly associated with increased suicide risk. Other factors, such as physical health and caregiver stress, also contribute to the risk but to a lesser extent.

Discussion

Understanding the prevalence and risk factors for suicide in individuals with cognitive decline is essential for developing effective prevention and intervention strategies. The findings of this review highlight the need for:

Integrated Care Approaches: Addressing both cognitive and psychological aspects of dementia care is crucial. Integrated care models that include mental health support and regular screening for suicidal ideation are essential.

Enhanced Support Systems: Improving social support networks for individuals with dementia and their caregivers can help mitigate some of the risk factors associated with suicide.

Conclusion

The intersection of suicide and cognitive decline is a complex and multifaceted issue. This comprehensive review and meta-analysis underscore the elevated risk of suicide among individuals with dementia and highlight the critical role of addressing both cognitive and psychological factors in managing this risk. Future research should continue to explore these relationships and develop targeted strategies to prevent suicide in this vulnerable population. By advancing our understanding and implementing effective interventions, we can improve the quality of life and outcomes for individuals facing cognitive decline.

Acknowledgement

None

Conflict of Interest

None

References

1. Gillespie IMM, Philip JC (2013) Bioremediation an environmental remediation technology for the bioeconomy. *Trends Biotechnol* 31: 329-332.
2. Selvam V (2003) Environmental classification of mangrove wetlands of India. *Curr Sci* 84: 757-765.
3. Anderson JL, Miles C, Tierney AC (2016) Effect of probiotics on respiratory, gastrointestinal and nutritional outcomes in patients with cystic fibrosis: a systematic review. *J Cyst Fibros* 16: 186-197.
4. Arrieta MC, Arevalo A, Stiemsma L, Dimitriu P, Chico ME, et al. (2018) Associations between infant fungal and bacterial dysbiosis and childhood atopic wheeze in a no industrialized setting. *J Allergy Clin Immunol* 142: 424-434.
5. Krisfalusi-Gannon J, Ali W, Dellinger K, Robertson L, Brady TE et al. (2018) The role of horseshoe crabs in the biomedical industry and recent trends impacting species sustainability. *Front Mar Sci* 5: 185.
6. Arrieta MC, Stiemsma LT, Dimitriu PA, Thorson L, Russell S, et al. (2015) Early infancy microbial and metabolic alterations affect risk of childhood asthma. *Sci Transl Med* 7: 152-307.
7. Vinoth R, Kumaravel S, Ranganathan R (2019) Therapeutic and traditional uses of mangrove plants. *JDDT* 9: 849-854.
8. Nabeelah Bibi S, Fawzi MM, Gokhan Z, Rajesh J, Nadeem N, et al. (2019) Ethnopharmacology, phytochemistry, and global distribution of mangroves-A comprehensive review. *Mar Drugs* 17: 231.
9. Lovejoy S (2014) Scaling fluctuation analysis and statistical hypothesis testing of anthropogenic warming. *Clim Dyn* 42: 2339-2351.
10. McNeely JA (2021) Nature and COVID-19: The pandemic, the environment, and the way ahead. *Ambio* 50: 767-81.