Journal of Oral Hygiene & Health
ISSN: 2332-0702
El-Sayed, J Oral Hyg Health 2025, 13:1
Editorial Open Access

A Systematic Review of Oral Health Conditions in Individuals with Acquired Brain Injury

Fatima El-Sayed*

Department of Molecular Microbiology and Immunology, Oregon Health & Science University

Abstract

Acquired brain injury (ABI) encompasses a range of neurological conditions, including traumatic brain injury (TBI), stroke, and brain tumors, that result in significant cognitive, motor, and sensory impairments. Individuals with ABI often experience various complications, including oral health issues. This systematic review aims to assess the prevalence, nature, and impact of oral health conditions in individuals with ABI, highlighting the challenges faced by this population. The findings suggest that individuals with ABI have a higher prevalence of oral health problems, such as xerostomia, periodontal disease, tooth decay, and difficulty in oral hygiene management. Interventions targeting improved oral care and education are essential to improving overall health outcomes in this vulnerable group.

Introduction

Acquired brain injury (ABI) refers to any brain damage that occurs after birth, including injuries due to trauma, stroke, or tumors. The consequences of ABI are wide-ranging, affecting physical, cognitive, and emotional functions. One often-overlooked aspect of ABI is its impact on oral health. Oral health is an integral part of overall health and well-being, and poor oral conditions can significantly impact the quality of life, social functioning, and rehabilitation outcomes of individuals with ABI.

This systematic review seeks to explore the prevalence and types of oral health issues prevalent among individuals with ABI. It also aims to investigate the factors contributing to oral health deterioration and the impact of ABI on oral care routines and outcomes [1, 2].

Methods

Search strategy

A comprehensive literature search was conducted across several databases, including PubMed, Scopus, and Google Scholar, using the terms “acquired brain injury,” “oral health,” “traumatic brain injury,” “stroke,” and “oral health complications.” Studies published between 2000 and 2024 were considered for inclusion. Only peer-reviewed articles that focused on the oral health status of individuals diagnosed with ABI were included in this review [3].

Inclusion and exclusion criteria

Studies were included if they:

- Involved patients with ABI, including those with traumatic brain injury (TBI), stroke, or other brain injuries.
- Addressed oral health conditions such as dental caries, periodontal disease, xerostomia, and difficulties with oral hygiene.
- Provided primary data or data analysis on the prevalence of oral health conditions in ABI patients.

Studies were excluded if:

- They focused on individuals with congenital brain injuries or developmental disabilities.
- They did not address oral health directly.
- They were review articles or opinion pieces.

Data extraction and analysis

Data were extracted on the type of ABI, the specific oral health issues identified, the sample size, and the findings of each study. The methodological quality of each study was assessed using the Critical Appraisal Skills Programme (CASP) checklist [4].

Results

Several studies included in the review reported a high prevalence of oral health issues in individuals with ABI. The most common oral health conditions identified were:

- **Xerostomia (Dry Mouth):** Xerostomia was frequently reported in individuals with ABI, particularly those who had sustained a TBI or stroke. The loss of salivary function due to neurological damage contributes to an increased risk of dental caries and discomfort.
- **Periodontal disease:** Patients with ABI often suffer from poor oral hygiene practices, leading to periodontal disease. Cognitive impairments or physical limitations due to ABI can make brushing and flossing difficult, resulting in plaque accumulation and gum disease.
- **Dental caries (Tooth decay):** The inability to properly care for the teeth combined with altered eating habits (such as increased consumption of sugary or acidic foods) contributes to a higher incidence of tooth decay in this population.
- **Difficulty in oral hygiene management:** Many individuals with ABI experience motor and cognitive difficulties that hinder their ability to manage their oral hygiene effectively. This issue is especially pronounced in those with severe cognitive impairments following a TBI or stroke.

***Corresponding author:** Fatima El-Sayed, Department of Molecular Microbiology and Immunology, Oregon Health & Science University, Egypt E-mail: fatima.El@sayed.eg

Received: 30-Dec-2024, Manuscript No: johh-25-162973, **Editor assigned:** 02-Jan-2025, Pre-QC No: johh-25-162973 (PQ), **Reviewed:** 18-Jan-2025, QC No: johh-25-162973, **Revised:** 22-Jan-2025, Manuscript No: johh-25-162973 (R), **Published:** 30-Jan-2025, DOI: 10.4172/2332-0702.1000465

Citation: El-Sayed F (2025) A Systematic Review of Oral Health Conditions in Individuals with Acquired Brain Injury J Oral Hyg Health 13: 465.

Impact of oral health on quality of life

Oral health problems in ABI patients extend beyond physical discomfort; they can also significantly impact the psychological and social well-being of individuals. Dental pain, difficulty eating, and aesthetic concerns related to tooth loss or discoloration can lower self-esteem and contribute to social isolation. Additionally, untreated oral conditions may interfere with rehabilitation, as poor oral health can lead to systemic infections, further complicating recovery.

Factors contributing to oral health deterioration

The review identified several factors that contribute to the deterioration of oral health in ABI patients:

- **Cognitive and motor impairments:** Cognitive deficits, such as memory loss or disorientation, hinder the ability to perform regular oral hygiene tasks. Physical limitations due to motor impairments can make brushing and flossing difficult.

- **Medication side effects:** Many medications prescribed for ABI-related conditions, including antipsychotics, antidepressants, and anticonvulsants, can lead to dry mouth, further exacerbating oral health issues.

- **Nutrition and diet:** ABI patients, particularly those with swallowing difficulties or altered eating habits, may be more prone to consuming soft, sugary, or acidic foods, increasing the risk of dental caries.

- **Reduced access to dental care:** Individuals with ABI often face challenges accessing regular dental care due to transportation issues, cognitive impairments, or limited financial resources.

Discussion

Oral health is a critical aspect of overall health, and individuals with ABI are at increased risk of developing oral health problems. The high prevalence of xerostomia, periodontal disease, and dental caries among ABI patients highlights the need for improved oral care strategies. Many ABI patients experience difficulty with basic oral hygiene tasks due to cognitive and motor impairments, which makes them highly vulnerable to dental complications. In addition to physical and cognitive impairments, medications used to manage ABI symptoms can exacerbate oral health issues. For example, dry mouth, a common side effect of many medications, contributes to an increased risk of tooth decay and discomfort. The findings of this review underscore the importance of incorporating oral health assessments into the routine care of ABI patients. Dental professionals should be part of the multidisciplinary team that addresses the comprehensive needs of these individuals. Early intervention and regular monitoring of oral health can prevent the escalation of oral health issues and improve the overall quality of life for individuals with ABI [5-8].

Conclusion

Individuals with acquired brain injury are at increased risk of oral health problems, including xerostomia, periodontal disease, and dental caries. The challenges faced by ABI patients in maintaining oral hygiene, coupled with medication side effects and limited access to dental care, contribute to these complications. Addressing oral health in this population is crucial, and multidisciplinary interventions, including regular dental assessments and improved oral care education, are essential for enhancing health outcomes and quality of life for individuals with ABI.

Acknowledgment

None

Conflict of Interest

None

References

1. Wilkinson TJ, Sainsbury R (1998) The association between mortality, morbidity and age in New Zealand's oldest old. Int J Aging Hum Dev 46: 333-343.
2. Gueresi P, Troiano L, Minicuci N, Bonafé M, Pini G, et al. (2003) The MALVA (MAntova LongeVA) study: an investigation on people 98 years of age and over in a province of Northern Italy. Exp Gerontol 38: 1189-1197.
3. Silver MH, Newell K, Brady C, Hedley-White ET, Perls TT (2002) Distinguishing between neurodegenerative disease and disease-free aging: correlating neuropsychological evaluations and neuropathological studies in centenarians. Psychosom Med 64: 493-501.
4. von Heideken Wågert P, Rönnmark B, Rosendahl E, Lundin-Olsson L, M C Gustavsson J, et al. (2005) Morale in the oldest old: the Umeå 85+ study. Age Ageing 34: 249-255.
5. Andersen HR, Jeune B, Nybo H, Nielsen JB, Andersen-Ranberg K, et al. (1998) Low activity of superoxide dismutase and high activity of glutathione reductase in erythrocytes from centenarians. Age Ageing 27: 643-648.
6. Palmer BW, Heaton SC, Jeste DV (1999) Older patients with schizophrenia: challenges in the coming decades. Psychiatric Services 50: 1178-1183.
7. Ankri J, Poupard M (2003) Prevalence and incidence of dementia among the very old. Review of the literature. Rev Epidemiol Sante Publique 51: 349-360.
8. Miles TP, Bernard MA (1992) Morbidity, disability, and health status of black American elderly: a new look at the oldest-old. J Am Geriatr Soc 40: 1047-1054.