

INCIDENCE OF FALLS IN THE ELDERLY POPULATION WITH EYE DISEASES: A SYSTEMATIC REVIEW

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ABSTRACT

Background: Eye diseases are highly prevalent in the elderly population and have a significant impact on number of falls and fall risk. The aims of this systematic review are 1) to report the number of falls/fallers in the elderly population with eye diseases 2) to explore the factors which most significantly impact risk of falls and 3) to examine the effectiveness of cataract surgery in reducing falls in the elderly population. **Methods:** Pubmed and Embase were accessed between November 2017 and September 2018. Articles were included based on the following criteria: 1) participants were identified as elderly individuals aged 65 and older; 2) participants included patients with eye diseases; 3) studies were observational by design; and 4) assessed number of fallers or falls experienced. Number of falls, number of fallers, and measures of risk were extracted from the included studies and presented in tabular format. Included studies were assessed for bias using the Newcastle-Ottawa Scale. **Results:** Nine studies fit the criteria and were thus included in the systematic review. Five of the nine studies involved surgical interventions. Of the five studies involving surgical interventions, three demonstrated a decreased number of falls after surgery as opposed to before surgery. Of the five studies involving surgical interventions, two demonstrated an increase in the number of falls after surgery as opposed to before surgery. Increased age and history of falls are associated with increased risk of falling. **Discussion:** The findings of our systematic review indicate further research is needed to determine the impact of eye disease on risk of falls as well as the effectiveness of surgical interventions on reducing number of falls. Despite the author's attempts to control several confounding variables, the observational design of the included studies made it difficult to directly relate the presence of eye disease with the risk of falling in the elderly population. A future study could initially control for age, gender, and history of falls within the selected population.

Keywords: elderly, eye disease, falls, glaucoma, macular degeneration, cataracts

INTRODUCTION

Visual impairment is a widespread issue that impacts older adults and is often underreported. Behind arthritis and heart disease, visual impairment is the third most commonly occurring chronic condition in the elderly population.^{1,2} Visual characteristics such as visual acuity, depth perception, contrast sensitivity, and visual fields are important to the proper functioning of the visual system. Impairment in any of these characteristics results in an increased risk of falls.³ The development of visual impairments and ocular pathologies drastically increases with age.^{4,5} After age 50 these visual characteristics, especially visual acuity, decline even in the absence of ocular pathologies. Age-related eye diseases also influence these visual characteristics and thus are associated with an increased risk of falls.³ The most prevalent age-related ocular pathologies in the elderly population are glaucoma, macular degeneration, and cataracts.^{1,6}

Falls exert an exceptionally, negative impact on quality of life and health in the elderly population and are a major determinant of mortality and morbidity.⁷⁻¹² Nearly one-third of community-dwelling elderly individuals experience a fall each year.¹⁰⁻¹² Furthermore, as age increases so does the risk of falling with 50% of those aged 75 and older enduring a fall each year.⁷⁻⁹ Falls are the fifth leading cause of mortality in the elderly population and directly result in 388,200 hospitalizations as well as 1.6 million visits to the emergency department each year.^{8,9,13} Thus, falls are an issue of utmost significance in the elderly population and fall prevention measures should be assumed by all healthcare professionals.