

Abstract - Gregory Genna

A Model of Falls Risk in Older Adults

Falls are a significant problem in older adults, with 1/3 of people over the age of 65 falling in a given year. Age-related changes in the systems involved with balance (vestibular, vision, somatosensation, musculoskeletal, and cognition) lead to increased reaction time to postural perturbations, decreased postural control, and changes in gait, all resulting in an increased risk of falling. Other factors that can lead to dizziness and imbalance outside of the primary balance systems increase the risk of falls.

Previous research has attempted to combine multiple risk factors into a model of falls risk, but the focus has been on producing a clinically-relevant tool for fall risk assessment; a theoretical falls risk model has yet to be produced. Risk factors were identified from literature review and recommendations from multiple clinical practice guidelines in the area of falls risk. Using data from the National Health and Nutrition Examination Survey (NHANES), a Poisson regression was performed to determine which risk factors are significant predictors of reported problems with falls in older, community-dwelling adults. An additional Poisson analysis was performed, including interaction terms to see if any risk factors combined to increase the falls risk. Analysis showed that including interaction terms was a significantly better fit in the Poisson model than with the terms omitted. The most predictive risk factor for a reported problem with falls is asking the patient if they have problems with their balance. Many other risk factors will cause a feeling of imbalance, so the primary risk factor for falls is likely having a feeling of imbalance. Additional research is needed on intervention for falls risk and identifying threshold values for when risk factors will likely lead to imbalance.