Poster #: 10

Abstract Title: Turning the 'Old Standard' to the Gold Standard: Evaluating Care Quality, Equity, and Healthcare Utilization for Older Adults with TBI

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ABSTRACT:

Abstract Theme: Moderate - Severe Brain Injury

Topic(s) of Interest: Epidemiology; System Evaluation

Purpose of Project: Older adults are at high risk of sustaining a traumatic brain injury (TBI) and are vulnerable to its effects, but there is little research on the impact of TBI on healthy aging. Limited outcome data exist at the population level to evaluate care quality and equity for people aging with TBI. Our goal was to explore the impact of TBI on aging and healthcare utilization through Quality Indicators.

Methods, Procedure, Results/Outcome, Conclusion:
METHODS: Two cohorts were established to examine the impact of TBI on aging: Cohort 1 consisted of people who were injured as an older adult (i.e., 65 years or older at time of injury) and Cohort 2 consisted of people who were injured at a younger age and who have aged with their injury (i.e., 65+ by 2012). Data from provincial administrative health services data from publicly funded healthcare databases were used (e.g., DAD, NACRS, NRS. Thirteen Quality Indicators were co-developed with healthcare partners and persons with lived experience to measure care quality for both target populations. A variety of data were collected for Cohort 1 (from 2016-2022), including, risk-adjusted incidence and mortality rates, healthcare utilization, admission to rehabilitation, primary care follow-up, and rate of discharge by disposition (e.g., long-term care). For Cohort 2, mortality and healthcare utilization data were analyzed for a 10-year period (2012-2022) and hard-matching was applied to compare data between cases and controls. Quality Indicator performance was explored using sociodemographic variables such as age group, sex, geographic region, and income.

RESULTS: For Cohort 1, the incidence rate for all severities of TBI increased with age. Older adults were more likely to be admitted to general rehab than specialized TBI rehab (8.35% vs 3.04% for persons with moderate to severe TBI). Emergency visit rates in years 1 and 2 increased with age (156.8 per 100 Person Year (PY) in 80+ age group vs. 114.9 per 100 PY in 65-79 years age). The rate of fall-related acute healthcare usage in the first two years after moderate-severe TBI was also higher among elderly people (43.7 per 100 PY in 80+ age group vs. 30.6 per 100 PY in 65–79-year group). For the matched cohort, cause of injury and admission to rehab significantly influenced survival probability. People who sustained their injury by falling had the lowest survival probability; people with TBI who received inpatient rehab had higher survival probability than those who did not.

CONCLUSION: This work establishes a foundation for quality-of-care assessments and monitoring disparity in care for older adults with TBI at a population level, while examining the impact of aging with TBI on mortality and healthcare utilization. Ensuring that older people receive appropriate rehabilitation and support to reduce falls and preventable complications is necessary to maintain independence and autonomy in the community.