Reviewer's report

Title: Older Adults with Acquired Brain Injury: A Population Based Study

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Reviewer: Carlos Jaramillo

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Synopsis: This study aims to investigate the different features and outcomes of older adults with brain injuries. The authors have used a retrospective cohort study design to perform a comparative analysis between patient’s over 65 who have suffered traumatic vs. non-traumatic brain injuries. The authors have described differences and trends between three different age ranges over 65 with much detail focused on mechanisms and disposition. This type of population-based data on brain injury is important for understanding the impact of these injuries on different age groups and health care systems. This is a particularly important public health concern for the elderly who have been shown to be susceptible to these injuries and have poorer outcomes. This study could potentially contribute to our broad understanding of the causes, associated problems, trends and outcomes of brain injuries in older adults in a health system with universal access to hospital care. This later point is a strength of this article.

Major compulsory revisions

1. Abstract: The wording in the “Background” section is confusing as to the designations of brain injury type. The authors can address this with a defining statement that ABI includes TBI and non-TBI and not leave this to be inferred by BMC Geriatrics readers who do not have brain injury research backgrounds. Please list abbreviations early in the text.

2. Conclusions in the abstract do not describe the conclusions of the study, but instead are general statements about the need for geriatric services. The authors should summarize the most significant aspects of this work and data – and specifically those appropriate for BMC geriatrics reader.

3. The results section describes “rate of TBI”, but should use “rate of hospitalized ABI episodes” to be more accurate. The later could reflect changes in diagnosis and post brain injury care standards that have changed in the 6 years as opposed to increasing numbers of CNS injuries.

Minor essential revisions

1. Table 7 repeats the data presented in Tables 3 and 6. This is unnecessary and cumbersome for the reader to work through. The comparisons made in Table 7 are interesting, but should be presented in a different format or simply referred to in the text.

2. The first sentence of the discussion section is not completely accurate given
the overlap in data published from this same group in reference 15 (Chen et al. in 2012) and should be modified to highlight how this study is unique.

3. Abstract: There are no indications within the abstract about the specific age ranges for their cohort. The findings that “…both TBI and nTBI increased with age” is non-descript for an audience interested in geriatric research and care. This could be addressed by including descriptive statements about the effect on the different age ranges.

4. Discussion: third paragraph, third sentence is missing a subject component. “Further, important to note is that while TBI overall is more common in males, the gender distribution among this hospitalized cohort is fairly equitable.”

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests