

Article details: 2016-0115	
Title	Trends in self-reported traumatic brain injury among Canadians, 2005–2014: a repeated cross-sectional analysis
Authors	Deepa P. Rao PhD, Steven McFaul MSc, Wendy Thompson MSc, Gayatri C. Jayaraman PhD
Reviewer 1	Dr. Charles Tator PhD MD
Institution	Toronto Western Hospital, University Health Network, Toronto, Ont.
General comments (author response in bold)	<p>It is incorrect to use the term “concussion or TBI” or C/TBI in the Introduction. Concussion is one type of TBI. Some authorities consider mild traumatic brain injury or mTBI or as more or less synonymous with concussion, as the authors have indicated. TBI is the generic term for all types of brain injuries, and so the eponym C/TBI is incorrect, misleading and essentially meaningless. Since the authors are reporting on all types of TBI they should use the term TBI.</p> <p>We agree with your assessment of the use of the term concussion of other traumatic brain injury. In trying to be precise in exactly what was asked of respondents, we were using the terminology used in the data source. However, as you suggested, we have switched to using the acronym TBI instead.</p> <p>Most members of the public now understands that concussion is a brain injury, and concussion is a more homogeneous group of injuries than mTBI, and so this reviewer recommends that the authors consider using the term concussion rather than mTBI when referring to concussion after the Introduction.</p> <p>Since we cannot differentiate concussions from other types of TBI based on the survey question used, we have tried to remain consistent and use TBI throughout the paper. The only instance where the term concussion is used is to describe the exact question posed to respondents during the survey.</p> <p>The definitions used should be described in greater detail. For example, most readers will not know what mechanisms the authors grouped together to obtain mechanisms of injury during various months.</p> <p>We have included more description of the definitions used in the study.</p> <p>Why is Work-Employment not a separate category? The same question applies to driving. Work in the home is usually not categorized as work, but rather injuries at home. I think it is important to use mechanisms of injury in a more standard way so that results can be compared with similar studies reported previously.</p> <p>The sample sizes were too small to disaggregate data into more widely reported categories with confidence. However, at your suggestion, we have done so and have demarcated that the reader should interpret with caution given the high sampling variability. (see table 2)</p> <p>For clarity the ages included in each category of “Adult” and “Youth” should be repeated in the body of Figures 2 and 3.</p> <p>This has been completed as requested.</p> <p>The category of “Falls” is very undesirable in an epidemiological study of this type. Indeed, for injury prevention purposes it is almost meaningless and should be avoided.</p> <p>We agree that is not the ideal term, but we chose to use it since it reflects the question posed to respondents: “Was the injury the result of a fall?”</p> <p>The term “injury” in Fig. 2 should be defined in the legend, for clarity, since it refers to all types of injuries including brain injuries. Also, perhaps for clarity it should be changed to “All Types of Injuries”.</p> <p>We have changed all references of such injuries to all types of injuries, or ATIs</p> <p>Indeed, wherever the term injury or injuries is used throughout this paper the qualifier of “all types of injuries” or some other term must be used for clarity. This is especially important in the “Interpretation” section.</p> <p>We have used “all types of injuries” or ATIs throughout the paper now to address this problem.</p> <p>The authors are encouraged to improve the clarity of the paper since it will be of great benefit to individual readers in the CMAJ audience and also to specific organizations with the responsibility of dealing with the prevention and management of all types of injuries, but especially brain injuries.</p> <p>We do hope the findings are useful to such organizations, and we have worked to improve the clarity as suggested.</p>
Reviewer 2	Dr. Richard Stanwick MD MSc
Institution	Vancouver Island Health Authority, Victoria, BC
General comments (author response)	In speaking to the subject of falls in the over 60 year olds this does not reflect the older age group

response in bold)	<p>experiencing these events leading permanent disability and long term care admission - the time frame needs to be adjusted by a few decades or an explanation provided as to this particular cut-off. I'm not quite clear about what you're pointing towards. We agree that the long-term care issues might be more relevant for ages older than just 60, so we've tried to edit the text to now say: "This latter point may be important because, in addition to injuries in older age being a catalyst for transition into long term care". I don't believe we suggest that all falls lead to disability or long term care admission.</p> <p>The authors may wish to reflect on the greater risk taking of the younger population in their sporting choices as well as the type of work setting this group may find themselves in terms of greater risk for C/TBI.</p> <p>We have inserted a reference to a 2004 paper by A. Kontos: "For ATIs, this finding may reflect the greater risk taking behaviour of adolescents in sport".</p> <p>Of importance is the finding of greater numbers of concussions in young females. Given the challenge of keeping young girls active, as captured by exercise experts such as Dr. Dean Kriellaars and others, these findings may serve notice that this is a population that may require special attention to prevention in order to avoid yet another impediment to female fitness.</p> <p>We have added a statement based on your suggestion; "Given the challenges in keeping young girls active, these findings may serve notice that this is a population that may require special attention for injury prevention efforts"</p>
Reviewer 3	Ms. Kaylee Eady BA MA
Institution	Children's Hospital of Eastern Ontario Research Institute, Clinical Research Unit, Ottawa, Ont.
General comments (author response in bold)	<p>Page 3, Introduction: I suggest the authors briefly acknowledge the need for current Canadian incidence data to strengthen the rationale of their study.</p> <p>I also suggest they briefly discuss the need to participate in rehabilitation post moderate-severe traumatic brain injury, as this often results in great cost to the individual, their family, and society. This point adds to the importance of incidence data to inform resource needs.</p> <p>I inserted the following statement as a rationale: "There have been few studies providing population level estimates of TBI among Canadians."</p> <p>Since the paper is meant to only report on trends, we felt it would not be appropriate to comment of health care associated with C/TBI. However, we are drafting another manuscript that discusses post-C/TBI care, and will include your suggestion in that paper.</p> <p>Pages 9 and 10, Limitations: I suggest the authors acknowledge the lack of data from 2006-2008, 2011, and 2012 as a limitation.</p> <p>We inserted the sentence "The lack of national data from 2006-2008, 2011, and 2012 is a limitation since they would provide further reliability to our assessment of trends over time."</p> <p>I suggest they briefly recognize the potential limitation of the self-reported data specifically in relation to individuals with moderate-severe traumatic brain injury as the survey was completed within 1 year post injury. During this time, it is possible that some individuals were still experiencing significant cognitive impairments from their injury and it may have been difficult for them to recall information. I recognize that the authors do briefly acknowledge the limitation of self-reported injury recall; however, the above point is also important to consider.</p> <p>I also suggest the authors briefly acknowledge the limitation of grouped data, i.e., they did not distinguish by severity.</p> <p>We have inserted the following sentence, which addresses both issues highlighted: "TBI spans a wide range of severity; therefore, the grouping of all types into one label serves as a limitation. In line with this consideration, it is possible that individuals with mild cases may not have identified their TBI within the year post-injury, as required for data capture in the survey, thereby resulting in a possible underestimation of cases."</p> <p>Page 10, Conclusion and Future Directions: I suggest the authors consider adding the following three points as future directions - (1) the need for future studies to combine self-reported data with hospital-record data, (2) the need for future studies to distinguish by severity because moderate-severe traumatic brain injury has rehab implications, and (3) the need for future studies to include children (12 and under) as concussion and traumatic brain injury has important effects on the developing brain and children often participate in sport as young as 4 years old.</p> <p>I've included your suggestions: "Future studies should work to combine self-reported data with hospital records so as to better describe TBI injuries and their sequelae, should distinguish TBI by their level of severity since the implications of each can be quite distinct, and should include ages below 12 years old since young children are also at risk."</p> <p>Page 9, Interpretation, last paragraph: "foud" should be corrected to "found" and add a hyphen between "partial contact".</p> <p>This has been completed as requested.</p> <p>Page 10, Conclusion and Future Directions: add a hyphen after "full" and between "partial contact".</p> <p>This has been completed as requested.</p>