Reviewer's report

Title: Burden of traumatic spinal fracture in 2006 - 2007 in Tehran, Iran

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Reviewer: Farid Abolhassani

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General Points:

The main ideas behind burden of disease calculation are to compare the burden of intended disease with other diseases or injuries or using the results in economic evaluations. It is only emphasized in the text that it is for the first time that burden of TSF is calculated using DALYs, but it has not been mentioned why it was found necessary or at least appropriate to spend so many time on estimating burden of TSF.

It seems that isolated TSF and associated TSF are different entities. In isolated TSF the problem seems to be with the spine itself, but in associated TSF the trauma is the main causal factor. The underlying predisposing factors in isolated TSF seem to play significant roles in increased lifelong mortality observed in these cases. Therefore TSF is a presentation of either a predisposing factor like osteoporosis or metastasis or a component of a severe injury accompanied by other presentations like ICH. Based on this classification of TSF, on which the study is based, it is not justifiable to calculate burden of TSF as an entity. It is more plausible to estimate burden of TSF as one of non-fatal outcomes of underlying conditions or one of a number of problems resulting from an injury.

The authors have assumed that aTSF is the major injury that is accompanied by other co-incident injuries. In this way the burden of ICH, when accompanied by TSF, is categorized as aTSF. Base on such an approach, it is also possible to assume that ICH is the major injury and ascribe the burden of co-incident TSF to it. Therefore even if we are trying to estimate burden of aTSF as an entity, including the burden of co-incident injuries does not seem neither reasonable nor necessary.

There are four major value concerns in calculating DALYs: Disability weight, lost years due to premature death, discounting and age weighting. Disability weights and discount rate have been discussed in the text, but nothing has been mentioned regarding the other two value concerns.

The data used for estimating DALYs have been acquired from two major sources, a rather long registration (NTDB) and two population surveys. These sources of data are acceptable as minimum required local data for estimating DALYs.

The numbers included in the text are not consistent and also not compatible with those presented in tables. For example sum of male and female aTSF DALYs (843.69+1725.1=2568.79) is greater than 2496.9 that is mentioned as the total
aTSF DALYs. In the second paragraph under "Results", 2568.9 is mentioned as the total DALYs of TSF, including both iTSF and aTSF.

While "identifying key opportunities for health gain", "policy implications" and "research implications" are mentioned as the main purposes of conducting this study, these topics are not covered under the discussion.

The limitations of the study are pointed out in the text. Although data sources do not belong to the same period, but type of information provided by each source and closeness of data gathering periods make these sources quite acceptable for such a study. Therefore I think that this point could not be considered as one of major limitations of the study. Using values from literature for duration of disability, which depends on local quality of care, could be considered as one of limitations of this study.

The topic chosen for the paper is quite informative, but unfortunately the abstract is not included in the text. The text is not fully acceptable from writing style point of view and should be edited.

Discretionary Revisions:
• Reconsidering study limitation

Minor Essential Revisions:

Major Compulsory Revisions:
• Redefining the question of the study and implications of the generated response.
• Justifying the necessity of estimating burden of TSF as an entity and not as a presentation or a non-fatal outcome of an underlying condition.
• Clarifying authors’ choices regarding DALYs value concerns
• Rewriting results with special attention to consistency of presented values.
• Including policy implications of the study in the discussion.
• Adding abstract to the paper.
• Editing the paper in order to improve its writing style and readability

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

Quality of written English: Needs some language corrections before being published

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