Reviewer's report

Title: Excessive daytime sleepiness and falls among older adults: cross-sectional examination of a population-based sample.

Version: 2
Date: 19 March 2015

Reviewer: Hsi-Chung Chen

Reviewer's report:

The present study, entitled as "Excessive daytime sleepiness and falls among older adults: cross-sectional examination of a population-based sample.", reported the association between excessive daytime sleepiness (EDS) and falls in community-dwelling older adults in Australia. A relatively large sample and comprehensive covariates along with high response and retention rate featured the present study. Gender difference was found regarding the link between EDS and falls. In females, EDS is independently correlated with falls. In contrast, EDS tended to have a dose-response effect on the risk for falls in males only. Besides, hot spots for falling in female with EDS were identified. In general, this is an interesting and practical study which has potential to contribute to the literature.

In order to maximize the scientific impact, a few imperative concern needs to be addressed

Major Compulsory Revisions
1. The analytical strategy is confusing.

This study collected a comprehensive set of variables; however, when performing statistical analyses, the principle of covariate selection is confusing. In table 1, the authors summarized correlates of EDS. This is a standard approach to identify potential confounders when examining the association between EDS and falls. Theoretically, only factors which have data-based association with EDS or covariates that have been recognized as risk indicators for falls could be and should be put into the multiple logistic regressions. In line 211-214, the authors mentioned that walking aid, smoking status, alcohol intake, sedative medication, physical activity and nocturia were included in the multivariate analyses to examine the independent effect of EDS on falls in females. I am wondering why these covariates were chosen instead of those which showed significantly uneven distribution in the EDS status, such as diabetes (table 1). In parallel, although EDS did not correlate with fall in the univariate analysis in male, the association between EDS and falls may be compromised by other covariates. In addition, the risk for fall, estimated with The Elderly Fall Screening Test (EFST) in the present study, is also of clinical interest and importance. When examining the relationship between EDS and EFST in males, the authors only mentioned age confounded this association (lines 245-248). How about the contribution of other significant correlates of EDS in male? For example height, weight, use of walking aid, smoking and mood disorder (table 1). Therefore, an additional table that summarizes results derived from multiple logistic regressions is suggested.
In this table, the dependent variables are suggested to include both falls and EFST. Stratifying the analyses by gender is also encouraged. The rationale for selecting eligible covariates should be stated. In addition, all eligible covariates should be entered simultaneously in the multivariate regression models.

2. This study is unique in demonstrating gender difference. However, the mechanism that underlies this gender-specific finding is not fully discussed. Please expand the current paragraph (lines 291-294) that should addresses this issue.

Minor Essential Revisions

1. In abstract, I suggest use interquartile range directly instead of the acronym of IQR.
2. Some acronyms are not necessary, e.g. BSD in line 80, ABS in line 170, SEIFA in line 171 and IRSAD in line 172.
3. Information of figure 1 has been well addressed in the context. I suggest delete it.
4. In line 260, the gender for respective prevalence of EDS should be added.
5. I am not sure whether these words had been misspelled. Please make a check. Line 265, "compounding factors"; line 284, "come limitations"
6. In lines 215-221, p value for the interaction term of EDS and antidepressant use should be illustrated to justify the performance of stratified analyses by antidepressant use.

Discretionary Revisions

1. Because 'gender difference' is the core finding of this study, the authors may consider adding this keyword into the title.

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

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that I have no competing interests