Reviewer's report

Title: The Relationship between Sensory Impairment and Functional Independence Among Elderly

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Reviewer: Taina Lupsakko

Reviewer's report:

General
1. The question posed by the author is actual and important. Many other well-done studies have published during last years concerning this topic and it would be important to refer these articles to see the right context of this study. For example: Keller et al. (J Am Geriatr Soc 1999) The effect of visual and hearing impairment on functional status.; Rudberg et al. (J Gerontol 1993) The relationship of visual and hearing impairments to disability: an analysis using the longitudinal study of aging.; Reuben et al. (J Am Geriatr Soc 1999) The prognostic value of sensory impairment in older persons.; Wallhagen et al. (J Am Geriatr Soc 2001) Comparative impact of hearing and vision impairment on subsequent functioning and Lupsakko et al. (J Am Geriatr Soc 2002) Combined functional visual and hearing impairment in a population aged 75 and older in Finland and its influence on activities of daily livings. (Discretionary Revisions)

2. The methods need some specific details to understand this study.

2.1 As a part of Survey Design the authors reported that the response rate for the survey was very high and the sample size was also huge. I wish to know what kind of survey the HALS was; was it a personal interview or postal or telephone questionnaire? Was the response rate also among the aged as high as here is reported? That would be surprising because in many other geriatric surveys the response rate is quite smaller (about 80 to 85 %) for many reasons associated with aging. I would like to know the response rate in this older age group when considering the reliability of this study. (Minor Compulsory Revisions)

2.2 It is too hard to understand how the severity of disability formed. I would like to know more details about the formulation used by the HALS in the development of the severity index. What was inside the severity index score from 1 to 4 when documenting a seeing disability index and score from 1 to 5 when documenting the hearing severity index? (Minor Compulsory Revisions)

3. Why did the authors want to compare the odds of IADL restrictions between respondents with a sensory disability and all other persons in HALS who were classified as being disabled? Why did they not use as compare group persons who were not disabled at all? Or was it so that all persons in this study population had some kind of disability? (Discretionary Revisions)

4. The manuscript adheres to the relevant standard for reporting and data deposition. The Tables were clear and easy to understand and the results reported logically.

5. How could the author say that more than one-half of Canadian seniors and more than one-third of 55-64 years old reported a sensory disability as was reported in the first sentence of the Discussion? The Table 1 reported that 10.5% of the aged 55 to 64 years had sensory disability and 23% of the aged 65+ had sensory disability. (Minor Compulsory Revisions)

The authors used in some sentences ADL activities even if they should use IADL activities. The ADL and IADL activities are quite different and these should not be mixed. Because ADL restrictions was
part of the definitions of “Seeing disabled” and “Hearing disabled” this study could not research at all the association between the sensory disabled and ADL activities. (Minor Compulsory Revisions)

The authors had here only view references concerning the association between sensory impairment and different physical and psychological function. There are found many other articles concerning the associations and these should be included to the part of discussion when estimating the meaning of this study. For example: Thompson et al. (Age Ageing 1989) The association between visual impairment and mortality in elderly people; Lupsakko et al. (Int J Geriatr Psychiatry 2002) Combined hearing and visual impairment and depression in a population aged 75 years and older; Appollonio et al. ( Age Ageing 1995) Sensory impairments and mortality in an elderly community population: a six-year follow-up study; Ip et al .( Int J Geriatric Psychiatry 2000). Depression in institutionalized older people with impaired vision and Tsuruoka et al (Auris Nasus Larynx 2001) Hearing impairment and quality of life for the elderly in nursing homes. (Discretionary Revisions)

6. In the last sentence of the abstract the authors concluded that “Improving vision and hearing impairment to mild sensory deficits may improve physical and psychological functioning in older adults”. This is not relevant conclusion of this study. Even if there are found an association between the severity of sensory disability and functional independence, the authors could not conclude this way because the cross-sectional study protocol used in this study. (Minor Compulsory Revisions)

7. The writing is acceptable.

Discretionary Revisions (which the author can choose to ignore)

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

What next?: Accept after minor essential revisions

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests: None