Visual impairment and frailty in older people

Tomoyuki Kawada¹

Received: 18 May 2021 / Accepted: 4 September 2021 / Published online: 22 September 2021
© The Author(s), under exclusive licence to Springer Nature Switzerland AG 2021

To the Editor,

Gonzales-Turin et al. [1] assessed the relationship between visual impairment (VI) and the frailty status. The adjusted odds ratios (ORs) (95% confidence Interval [CIs]) of VI for the development of frailty in older nonfrail, pre-frail, and robust participants were 2.5 (1.5–4.4), 2.7 (1.3–5.7), and 1.9 (0.6–6.00), respectively. The frailty domains by VI were recognized in slowness, low energy, low physical activity, and weakness. VI might lead to worsening of functional status and disability in older people, and the poor health status will be observed in combination with frailty. The authors concluded that the prevention of frailty and disability should be conducted by avoiding VI in older people. I have two comments about their study.

First, Varadaraj et al. [2] investigated the association between near vision impairment (NVI) and frailty with propensity score adjustment, and concluded that NVI was significantly associated with the severity of frailty. Swenor et al. [3] also reported that severity of VI was significantly related to frailty. VI is closely associated with aging, disability, and other geriatric problems, and comprehensive analysis, including mental and physical problems should be conducted to verify the association.

Second, frailty and cognitive impairment are closely associated. Swenor et al. [4] observed that participants with impaired visual acuity, contrast sensitivity, and stereo acuity were at risk for incident cognitive impairment. Lim et al. [5] examined the effect of VI on cognitive decline over 6 years, and standardized regression coefficients (SRC) (95% CI) of baseline VI for decline in cognitive function was -0.27 (-0.37 to -0.17). In addition, SRC (95% CI) of unchanged or deteriorated VI for decline in cognitive function was -0.29 (-0.40 to -0.18). They confirmed that poor vision was independently associated with subsequent cognitive

decline. The leading causes of VI were under-correction of refractive error and cataract, which could be mostly treatable. Risk reduction of frailty and cognitive decline via maintenance of visual acuity should be made.

Funding No external funding sources were used for this study.

Declarations

Conflict of interest The author declares that he has no conflict of interest in this study.

Ethical approval This study complies with the ethical standards of this journal, with respect to transparency, honesty and original research. This study is “Letter to the Editor” and no patients are involved. Therefore, ethical approval is not necessary.

Statement of human and animal rights Not applicable.

Informed consent As no patients were included in this study, informed consent was not necessary.

References

1. Gonzales-Turin JM, Rodriguez-Laso A, Carnicero JA et al (2021) Relationship between self-reported visual impairment and worsening frailty transition states in older people: a longitudinal study. *Aging Clin Exp Res*. <https://doi.org/10.1007/s40520-020-01768-w> (**Epub ahead of print**)
2. Varadaraj V, Lee MJ, Tian J et al (2019) Near vision impairment and frailty: evidence of an association. *Am J Ophthalmol* 208:234–241
3. Swenor BK, Lee MJ, Tian J et al (2020) Visual impairment and frailty: examining an understudied relationship. *J Gerontol A Biol Sci Med Sci* 75:596–602
4. Swenor BK, Wang J, Varadaraj V et al (2019) Vision impairment and cognitive outcomes in older adults: the health ABC study. *J Gerontol A Biol Sci Med Sci* 74:1454–1460
5. Lim ZW, Chee ML, Da Soh Z et al (2020) Association between visual impairment and decline in cognitive function in a multiethnic Asian population. *JAMA Netw Open* 3:e203560

✉ Tomoyuki Kawada
kawada@nms.ac.jp

¹ Department of Hygiene and Public Health, Nippon Medical School, 1-1-5 Sendagi, Bunkyo-Ku, Tokyo 113-8602, Japan

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.