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LETTERS TO THE EDITOR

Can Sleep Problems Have a Negative Impact on Falls in Older People?

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It is estimated that the number of people aged at least 60 years will increase approximately 56% until 2030, and by 2050, this population will reach around 2.1 billion.[1] The rise of life expectancy and the projected growth of the population who are aged at least 60 years generates challenges in the health field, because the prevalence of chronic diseases expand in older people.[2] According to the Global Burden of Disease Study 2016, people are living longer, but are not necessarily associating quality of life to their later years. In fact, more limitations and high rates of disabilities have been reported.[3]

Falls are a public health problem with devastating consequences for an individual and family that also contribute to the high rates of disability and mortality.[4] The Global Burden of Disease Study 2010 revealed that falling is among the top seven highest causes of years lived with disability in older people.[5] Another issue to consider are sleep problems in older people. In the aging process, there is an increase of the number of awakenings, while the total quantity of nocturnal sleep is reduced.[6] Thus, sleep disturbances are more frequent in older individuals.[6]

One sleep problem that mainly affects the elderly is excessive daytime sleepiness.[6] It is known that 15% of the elderly have complain about excessive daytime sleepiness with no specific cause.[7] A cross-section study demonstrated that women with excessive daytime sleepiness have reported at least one previous fall.[8] Recent literature showed that men with short sleep duration had increased risk of fall,[9] and, in adolescents, sleep deprivation had increased falls in different conditions.[10] The effects of sleep deprivation cause significant harm to self-regulation abilities that influences attention, decision making and impulsiveness,[10] this aspect has detrimental input in outcome falls in all ages.[8,10]

The relationship between sleep problems and risk of falls can be influenced by several factors, such as associated diseases, depression, balance problems, impaired cognitive functions, and use of medication. Health professionals should pay more attention to the mechanisms that cause sleep deprivation and provide non-drug interventions that improve both risk of falls and sleep problems. We propose that sleep problems can be a risk factor for falls. The fact is that sleep deprivation causes deleterious damages in organism causing imbalance in the systems of balance, coordination, attention, and concentration that can lead to falls.

In conclusion, we would like to emphasize the importance of sleep problems in the risk of falls in the elderly population and call attention to both health problems that negatively impact quality of life in older people. We recommend that future studies should investigate effective treatments to improve sleep quality in older people. Furthermore, clinicians should discuss the risks of falling with their elderly patients with sleep problems and also with their family members.

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REFERENCE

1. United Nations, Department of Economic and Social Affairs, Population Division. World Population Ageing 2015. http://www.un.org/en/development/desa/population/theme/ageing/WPA2015.shtml. Accessed date April 24, 2018.
2. Lima MG, Barros MB, Cesar CL, Goldbaum M, Carandina L, Ciconelli RM. Impact of chronic disease on quality of life among the elderly in the state of Sao Paulo, Brazil: a population-based study. *Rev Panam Salud Publica*. 2009;25(4):314–321.
3. GBD 2016 Disease and injury Incidence and Prevalence Collaborators. Global, regional, and national incidence, prevalence, and years lived with disability for 328 diseases and injuries for 195 countries, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016. *Lancet*. 2017;390 (10100):1211–1259.
4. Sherrington C, Tiedemann A. Physiotherapy in the prevention of falls in older people. *J Physiother*. 2015;61(2):54–60.
5. Salomon JA, Wang H, Freeman MK, et al. Healthy life expectancy for 187 countries, 1990-2010: a systematic analysis for the Global Burden Disease Study 2010. *Lancet*. 2012;380(9859):2144–2162.
6. Ohayon MM, Carskadon MA, Guilleminault C, Vitiello MV. Meta-analysis of quantitative sleep parameters from childhood to old age in healthy individuals: developing normative sleep values across the human lifespan. *Sleep*. 2004;27(7):1255–1273.
7. Pack AI, Dinges DF, Gehrman PR, Staley B, Pack FM, Maislin G. Risk factors for excessive sleepiness in older adults. *Ann Neurol*. 2006;59(6):893–904.
8. Hayley AC, Williams LJ, Kennedy GA, et al. Excessive daytime sleepiness and falls among older men and women: cross-sectional examination of a population-based sample. *BMC Geriatrics*. 2015;15:74.
9. Stone KL, Blackwell TL, Ancoli-Israel S, et al. Sleep disturbances and increased risk of falls in older community-dwelling men: the outcomes of Sleep Disorders in Older Men (MrOS Sleep) Study. *J Am Geriatr Soc*. 2014;62(2):299–305.

10. Kim SY, Sim S, Kim SG, Choi HG. Sleep deprivation is associated with bicycle accidents and slip and fall injuries in Korean adolescents. *PLoS One.* 2015;10(8):e0135753.

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