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Insomnia symptoms predict physical and mental impairments among postmenopausal women

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It has been over 50 years since the publication of the first report to show that sleep in the population is associated with mortality [1]. Since that time, and especially in the last decade, there has been a marked increase in attention to the role of sleep in the context of public health [2,3]. Despite a number of studies that show poor sleep quality as a risk factor for morbidity [4,5], insomnia has generally received less attention than sleep duration in this regard. One possible reason for this is a general lack of good quality prospective data [6] and a general focus on mental health [7]. The study by Zaslavsky and colleagues [8] in this issue addresses some of these concerns by using longitudinal data to show that insomnia (in specific) is associated with the incidence of physical, mental, or concurrent forms of impairment in the Women's Health Initiative (WHI) [9] cohorts.

Research has consistently demonstrated that women report more sleep initiation and maintenance problems [10,11], and are at greater risk for a diagnosis of insomnia compared to men [12,13]. The prevalence of insomnia is estimated at 30–60% among postmenopausal women [14–16]. Sleep disturbance during the postmenopausal period has been associated with numerous consequences to health and functioning [17]. Women in the U.S. can expect to live one third of their lives post-menopause. Thus, it is imperative that we examine insomnia and its consequences in postmenopausal women.

The study by Zaslavsky and colleagues [8] in this issue examined prospective data from the WHI. This included N = 39,864 from the clinical trial and N = 53,668 from the observational study. Insomnia was assessed with the validated WHI Insomnia Rating Scale. Physical, mental, and mixed impairments were assessed using the Short Form-36 (SF-36) questionnaire. In the clinical trial cohort, which had a one-year follow-up, those with clinically relevant insomnia symptoms at follow-up were about twice as likely to report physical impairment, about 3–4 times as likely to report emotional impairments, and 4–6 times as likely to report mixed impairments. Similar results were seen in the observational study, which had a longer (3-year) follow-up. Though effects for emotional and mixed impairments were somewhat attenuated, this pattern was generally maintained. These results show that insomnia co-occurs with physical, mental, and mixed impairments, that acquiring insomnia over time predicts these impairments even more reliably, and that insomnia symptoms at baseline predict impairments at follow-up, even if the insomnia has resolved.

Great ambiguity remains about whether the cause of sleep difficulties in post-menopausal women is due to hormone changes, effects of normal aging on sleep, life changes/role transitions, other physical and medical conditions that are acquired with advanced age, or other comorbid sleep disorders such as periodic limb movements or sleep apnea. While examining changes in insomnia and its association to physical and/or emotional impairment adds to the literature, as the authors mention, their analysis preclude the assignment of causality. Thus, more generalizable, prospective studies are needed to understand whether insomnia is likely to be a cause or a consequence of, or an early sign/marker of, physical and emotional impairment. Further, while the study explores general functioning over time using subscales from the SF-36, future studies would benefit from examining more specific types of impairment. Finally, while it is admirable that a validated measure of insomnia (Insomnia Rating Scale) was used to measure insomnia symptoms, as the authors acknowledge, this does not confirm a diagnosis of insomnia disorder. Despite these limitations, these results add to a growing literature on the adverse effects of insomnia in aging postmenopausal women, and suggest that past, sustained, or new symptoms of insomnia increase vulnerability to impairment.

The findings of the study by Zaslavsky and colleagues are likely robust for several reasons. First, their analyses are amply powered by a large, well-characterized, diverse population. Second, the prospective design enables an examination of the sequential development of insomnia in tandem with both physical and mental health issues. Third, unlike most epidemiological studies, Zaslavsky and colleagues utilize a well-validated measure of insomnia. This said, a more systematic assessment of insomnia disorder, along with specific indices of emotional and physical impairment, are warranted. As the population of older women increases, it may also be prudent to measure insomnia disorder in the context of other characteristics, such as neurocognitive health (Alzheimer's disease, dementia), polypharmacy, and role/transitions. Lastly, identification of the underlying pathophysiology and theoretical mechanisms by which insomnia signifies, contributes to, and/or produces the new onset or exacerbation of common physical and emotional impairment that has yet to be delineated.

In summary, these findings reiterate the importance of carefully assessing insomnia in public health research, especially as women mature. Insomnia is a modifiable risk factor. The cognitive-behavioral treatments known to alleviate insomnia symptoms may have far-reaching implications, not only for women's proximal emotional and physical health, but also potentially for their longevity. In the context of the multiple challenges that women are likely to face as they age, protecting sleep and preventing insomnia may be key to their well-being.

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