

Sleep and Long-Term Care

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KEYWORDS

• Sleep disturbance • Long-term care • Nursing homes • Older adults

KEY POINTS

- Long-term care (LTC) involves a range of support and services for people with chronic illness and disabilities who can not perform activities of daily living independently.
- Poor sleep increases the risk of LTC placement, and sleep disturbance is extremely common among LTC residents.
- The identification and management of sleep disturbance in LTC residents is a vital, but perhaps underappreciated, aspect of offering high-quality care for this already compromised population.
- This review describes the nature and consequences of sleep disturbances in LTC, clinical assessment and management of sleep disturbances in LTC, and implications for future research and clinical practice.

Long-term care (LTC) involves a range of support and services for people with chronic illness and disabilities who can not perform activities of daily living independently. It is expected that approximately 70% of adults older than 65 years of age will use some form of LTC.¹ For the purpose of this review, only studies of facility-based LTC settings are included, such as nursing homes, assisted living facilities, and continuing care retirement communities. Poor sleep increases the risk of LTC placement,² and sleep disturbance is extremely common among LTC residents.³ The identification and management of sleep disturbance in LTC residents is a vital, but perhaps underappreciated, aspect of offering high-quality care for this already compromised population.⁴ This review describes the nature and consequences of sleep disturbances in LTC, the clinical assessment and management of sleep disturbances in LTC, and the implications for future research and clinical practice.

POOR SLEEP AND THE RISK OF LONG-TERM CARE PLACEMENT

Spira and colleagues² prospectively examined whether poor sleep increased the risk of institutionalization in a large cohort of community-dwelling older women. They found that greater sleep fragmentation measured by wrist actigraphy substantially increased the likelihood of LTC placement after 5 years.²

Poor sleep may contribute to the increased risk of LTC placement for a variety of reasons. One explanation is that poor sleep leads to cognitive impairment. A metaanalysis of 77 studies among regional or national representative samples of older adults identified cognitive impairment as a key predictor of nursing home placement.⁵ Recent prospective cohort studies, using both objective and subjective measures of sleep quality, offered strong evidence that poor sleep led to cognitive decline in older adults.^{6,7} It is also possible that

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frequent nocturnal awakenings increase caregiver burden and stress, which prompts the institutionalization of older adults receiving care at home.⁸ However, one could argue that poor sleep in care recipients may not necessarily be linked to disturbed sleep in caregivers.⁹ Some other explanations of how poor sleep increases the risk of LTC placement include sleep loss linked to chronic inflammation leading to functional impairment and declining health.^{10,11} Poor sleep may also be a side effect of prescribed medications, or it can be a sign of other comorbidities known to increase risk for institutionalization among older adults, such as depression.

Future research is necessary to discover the mechanisms linking sleep disturbance to the increased risk for LTC placement, and to evaluate if sleep promotion strategies could decrease the risk of institutionalization. As an attempt to prevent LTC placement, clinicians working with older adults should assess sleep on a regular basis, closely monitor individuals with highly fragmented or insufficient sleep, and provide nonpharmacologic strategies for improving sleep whenever possible.

SLEEP DISTURBANCE IN LONG-TERM CARE

Although common in older adults, sleep disturbances are even more prevalent and more severe in institutionalized older adults.¹² Compared with community-dwelling older adults, LTC residents with and without dementia showed significantly lower sleep efficiency, longer awake time, and more sleep fragmentation throughout the night as measured by actigraphy.¹³ In a study of 334 nursing home residents, 72.1% of the residents were classified as poor sleepers, and 49.6% were taking hypnotic medications.³ Poor sleep in LTC residents is common across countries and cultures. In a recent study of more than 4000 elderly nursing home residents from Israel and 7 European countries, the overall prevalence of insomnia was 24% (ranging from 13% to >30%). In this study, insomnia was defined by the presence of symptoms of difficulty falling asleep or staying asleep, waking up too early, restlessness, or nonrestful sleep at any time.¹⁴ Sleep disturbances are not only common, but they can also be persistent for up to 6 to 12 months, as reported in various LTC settings.^{15,16} The persistence of sleep disturbance may have profound impact on LTC residents.

CONSEQUENCES OF SLEEP DISTURBANCE IN LONG-TERM CARE

A large body of evidence exists supporting the negative consequences of poor sleep or sleep

disturbance in general. For example, poor sleep is associated with worse physical function, including gait speed, in older adults.¹⁷ Sleep disturbance can adversely affect neuronal health, as supported by the observation that changes in sleep pattern increase the risk for dementia.¹⁸ Studies in LTC residents have linked sleep disturbance to decreased functional status,³ less functional recovery with rehabilitation,¹⁹ social disengagement,²⁰ greater risk of falls,²¹ frailty,²² agitation,²³ and higher mortality.²⁴

CLINICAL ASSESSMENT OF SLEEP DISTURBANCE IN LONG-TERM CARE

The diagnosis of sleep disturbance in residents of LTC is based on an in-depth clinical history from residents (if able), family members, and LTC staff; observations of daytime and nighttime sleep; and a physical examination. If indicated, polysomnography, sleep logs, actigraphy, questionnaires such as the Pittsburgh Sleep Quality Index,²⁵ the Behavioral Indicators Test—Restless Legs,²⁶ STOP-Bang to screen for obstructive sleep apnea (OSA),²⁷ and other diagnostics may be required. A referral to a sleep specialist may be indicated when a sleep disorder is suspected.²⁸ Before initiating treatment, characteristics and causes of sleep disturbances must be carefully investigated, and a diagnosis established.²⁹ Careful evaluation can help clinicians to avoid inappropriate treatments or missing important symptoms related to poor sleep quality.

FACTORS THAT CONTRIBUTE TO SLEEP DISTURBANCE IN LONG-TERM CARE

Sleep disturbance in LTC residents is likely to result from a variety of individual and environmental factors,³⁰ including age-related changes in sleep architecture, environmental noise, nocturnal care practices, physical inactivity, social disengagement, depression, dementia, sleep disorders, and polypharmacy.³¹ Understanding these factors will inform the development of strategies to improve sleep for LTC residents. **Box 1** summarizes the factors that contribute to sleep disturbance in LTC.

Age-Related Factors

Older age independently predicts the existence of sleep disturbance in LTC residents.¹⁴ Sleep in older adults is characterized by frequent arousals, decreased deep sleep, and advanced sleep phase with the tendency to fall asleep earlier in the evening and wake up earlier in the morning.³² Although poor sleep should not be considered as a normal part of aging, age-related changes in

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