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The Role of Sleep in Healthy Aging

Preface

With the increase in the older population, sleep-related problems increase in importance. As people grow older, they often experience complex physical and psychosocial challenges and take multiple medications, all of which can contribute to sleep problems. According to a recent Gallup survey released by the International Longevity Center, 25 percent of older adults report a “sleep problem.” Moreover, 53 percent of people who have spoken with their health care provider about a sleep problem are not receiving treatment. Proper sleep is as important as nutrition, exercise, and social engagement to the health of older people, and poor sleep needs to be addressed, diagnosed, and treated.

The ILC is committed to promoting an awareness campaign to educate older Americans and health care providers about the importance of sleep to healthy aging and to improving treatment of sleep-related problems. This issue brief is based on a scientific consensus conference that was convened to review the current state of knowledge about sleep, health, and aging, to highlight the various interventions for sleep-related problems, and to outline additional areas for improved research and treatments. The goal is to shed more light on this frequently misunderstood and overlooked topic.

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The Role of Sleep in Healthy Aging

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Sleep is a fundamental but often ignored component of healthy aging. Indeed, sleep-related problems are common and may significantly affect a person's health and well-being. Fortunately, some effective interventions are already being utilized, and there are promising paths in the effort to learn about and treat sleep-related problems. This issue brief will highlight the importance of sleep, discuss the sleep-related problems that affect individuals, particularly insomnia and the treatments that are available, and outline steps that still need to be taken to better understand the relationship between sleep and healthy aging. A special examination of sleep-related problems among caregivers and those in nursing homes is also included.

The Importance of Sleep

Sleep is essential to well-being, quality of life, and overall health. It is both restorative and protective. Evidence suggests that adequate sleep is important in the maintenance of the body's immune function and that sleep quality is associated with quality of life. The need for adequate sleep is critical across the lifespan, but it is especially important among the older

population. Older individuals with sleep-related problems are more likely to be depressed, suffer attention and memory problems, experience daytime sleepiness, and are at higher risk of falls than those who have good quality sleep. Moreover, sleep problems are associated with multiple medical conditions, including heart and lung diseases, depression, stroke, diabetes, and obesity. Given the significance of sleep-related problems, physicians ought to routinely address sleep-related issues at office visits. In fact, in addition to the traditional *vital signs* (blood pressure, heart rate, temperature, and respiratory rate), it would be helpful for physicians to include an inquiry about sleep as a new *vital sign*.

Sleep-Related Problems and Treatments

The prevalence of sleep-related problems increases with age. According to one study, more than 50 percent of older people have a chronic sleep problem of some type, including insomnia, sleep apnea, periodic limb movement syndrome (such as restless leg syndrome), and early morning awakening. Significant progress has been made in understanding sleep-related problems and in developing behavioral and

Sleep and Caregiving

Among the burdens that many caregivers face are sleep-related problems, particularly in those caring for someone with Alzheimer's disease or Parkinson's disease. Some of the challenges to achieving good sleep include being awakened by such patient behaviors as wandering, day/night confusion, getting out of bed repeatedly, and bedwetting. In addition, caregivers experience physical, psychological, emotional, social, and financial stresses, which contribute to sleep problems. The impact of depression on caregiver sleep is of particular importance, and can continue even after the institutionalization or death of the patient. A caregiver's own health also contributes to sleep problems, with older caregivers more likely to have a greater body mass index and elevated cholesterol, hypertension, insulin levels, and cardiovascular disease.

It is therefore important that sleep problems in both patients and caregivers be treated with cognitive behavioral therapies and/or medication. In addition, interventions that enhance lifestyle, increase social and physical activity, and address caregiver burdens may be critical to the prevention or treatment of chronic sleep problems in caregivers. Lastly, additional research is needed to better evaluate behavioral interventions, determine how technology can be applied to improve the detection, treatment, and follow-up of sleep disturbances in caregivers, and how to better predict whether caregivers and patients will be at risk of sleep disturbances so efforts to address the situation can begin as early as possible.

pharmacological interventions, although their diagnosis and treatment remain underutilized. For example, many clinicians are unaware of the many serious conditions associated with insomnia, which is considered the most prevalent ongoing sleep-related problem, and unfamiliar with the wide range of treatments for this and other sleep disorders. The effects of insomnia can include fatigue, cognitive impairment, and excessive worries about sleep.

Cognitive behavioral therapies (CBT) for insomnia include stimulus control therapy, which helps people to associate the bed and bedroom with sleep; relaxation training, which includes procedures to reduce tension; and sleep restriction therapy, which aims to produce more consolidated and efficient sleep. In addition, light therapy has been used to improve sleep, based on light's function as a regulator of circadian rhythms, which can improve sleep quality and delay early morning awakening. However, compliance with this therapy remains problematic due to various practical considerations, and new approaches are needed. Lastly, various epidemiological studies have found a positive association between exercise and good self-reported sleep quality in older adults, with inactivity being predictive of insomnia, and higher levels of physical activity protecting against insomnia. The National Institute on Aging published an evidence-based monograph that advises: "Try to exercise at regular times each day. Exercising regularly improves the quality of your nighttime sleep and helps you sleep more soundly."

Another common intervention for insomnia is, of course, drugs, both prescription and over-the-counter. The following are some examples:

- **Trazodone** is an antidepressant often prescribed for insomnia, although that is not its intended purpose.

There have never been studies focused on the effects of trazodone for insomnia without underlying depression.

- **Antihistamines**—both prescribed and over-the-counter are commonly used, although adverse effects, especially in older people, are common and can be serious.
- **Benzodiazepines** and the newer benzodiazepine receptor agonists (such as zolpidem) have demonstrated efficacy in promoting sleep, although

Sleeping in the Nursing Home

Nighttime sleep disturbances and excessive daytime sleeping are common among residents in nursing homes. This is not surprising, given the medical/institutional setting and the significant physical and functional impairment that many residents experience. Studies have found a high prevalence of sleep apnea and a strong association between sleep apnea and cognitive impairment and dementia. These problems can be a risk factor for mortality in nursing homes and can also be attributed to poorer functional outcomes. It is also safe to assume that poor sleep will negatively affect quality of life of these residents. As such, it is important and worthwhile to better manage sleep problems in nursing homes. While medications may have a role, there are also some risks, such as risks of falls in those using psychotropic medications. Additional research should be done on environmental and behavioral interventions, such as physical and social activity, as well as light therapy.

they are controlled substances and are associated with some side effects such as hallucinations and sleepwalking.

- **Melatonin-receptor agonists** are a new class of drugs to treat insomnia by acting directly on the part of the brain that controls circadian rhythms. Ramelteon is currently the only drug in this class and is not a controlled substance, as no potential for abuse has been reported.

While it is acceptable to recommend prescription sleep medications in appropriate patients, the potential negative effects of polypharmacy in certain individuals should also be recognized. Many older adults take numerous prescription drugs, with individuals aged 65 to 74 receiving eight prescriptions per year on average, and those aged 75 and over receiving 11 prescriptions per year. These drugs may be a contributing factor in insomnia, and physicians need a better understanding of their effect on older persons. Conversely, the potential effects of drugs for insomnia in an individual who is taking multiple medications also needs to be carefully considered. Additional research and clinical trials are needed in these areas.

Recommendations

Although much remains to be learned and many areas of controversy still exist regarding sleep disorders in older people, there is still a variety of ways to effectively address the issues, including:

1. Educating physicians to gain understanding of the significance of sleep disturbances and sleep complaints and to consider sleep a new vital sign. Training physicians to make appropriate treatments and referrals for sleep disorders.
2. Educating older individuals to recognize that sleep problems are not a normal part of aging. Encouraging them to discuss sleep issues with their doctor and to pursue treatments. Making them aware that new medications with fewer negative side effects than traditional sleep medications are now available.
3. Undertaking additional research on how sleep affects aging, stress, and disease to include sleep problems among individuals with Alzheimer's disease or other dementias and among caregivers. Conducting more studies on the effects and outcomes of pharmacotherapy in older people with insomnia.

Conclusion

Poor sleep is often associated with poor physical and/or mental health and diminished quality of life in the older population. Yet sleep disorders are common and treatable through cognitive-behavioral therapy and pharmaceutical interventions. Raising the profile of sleep disorders among independent older persons, as well as caregivers and clinicians who care for older persons, should become a priority.

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The International Longevity Center–USA (ILC–USA) is a not-for-profit, nonpartisan research, education, and policy organization whose mission is to help individuals and societies address longevity and population aging in positive and productive ways, and to highlight older people’s productivity and contributions to their families and society as a whole.

The organization is part of a multinational research and education consortium, which includes centers in the United States, Japan, Great Britain, France, the Dominican Republic, India, Sub-Saharan Africa, Argentina, and the Netherlands. These centers work both autonomously and collaboratively to study how greater life expectancy and increased proportions of older people impact nations around the world.

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