

SPECIAL ARTICLES

Sleep is essential to health: an American Academy of Sleep Medicine position statement

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Sleep is a biological necessity, and insufficient sleep and untreated sleep disorders are detrimental for health, well-being, and public safety. Healthy People 2030 includes several sleep-related objectives with the goal to improve health, productivity, well-being, quality of life, and safety by helping people get enough sleep. In addition to adequate sleep duration, healthy sleep requires good quality, appropriate timing, regularity, and the absence of sleep disorders. It is the position of the American Academy of Sleep Medicine (AASM) that sleep is essential to health. There is a significant need for greater emphasis on sleep health in education, clinical practice, inpatient and long-term care, public health promotion, and the workplace. More sleep and circadian research is needed to further elucidate the importance of sleep for public health and the contributions of insufficient sleep to health disparities.

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INTRODUCTION

Sleep is vital for health and well-being in children, adolescents, and adults.^{1–3} Healthy sleep is important for cognitive functioning, mood, mental health, and cardiovascular, cerebrovascular, and metabolic health.⁴ Adequate quantity and quality of sleep also play a role in reducing the risk of accidents and injuries caused by sleepiness and fatigue, including workplace accidents and motor vehicle crashes.^{5–7} Short-term sleep deprivation, long-term sleep restriction, circadian misalignment, and untreated sleep disorders can have a profound and detrimental impact on physical health, mental health, mood, and public safety. Chronic insufficient sleep is associated with an increased risk of mortality and contributes to both the individual risk and societal burden associated with several medical epidemics, including cardiovascular disease, diabetes, obesity, and cancer.⁸ Emerging data suggest that extending the nightly sleep duration of people who habitually get insufficient sleep is associated with health benefits.^{9–12}

Healthy sleep requires adequate sleep duration, appropriate timing, regularity, the absence of sleep disorders, and good quality, which can be indicated by both self-rating and objective sleep continuity variables.^{13–14} While individual sleep needs vary, the American Academy of Sleep Medicine (AASM) and Sleep Research Society (SRS) recommend that the average adult should sleep 7 or more hours per night on a regular basis to promote

optimal health,¹⁴ and the National Sleep Foundation (NSF) provides similar consensus recommendations of 7 to 9 hours of sleep for adults and 7 to 8 hours of sleep for older adults.¹⁵ Consensus recommendations for pediatric populations vary by age range.^{15,16} These recommendations provide benchmarks for the Healthy People 2030 objectives to increase the proportion of children, high school students, and adults in the U.S. who get enough sleep.¹⁷ Baseline data from surveys conducted by the Centers for Disease Control and Prevention (CDC) and the Maternal and Child Health Bureau (MCHB) show that 34.1% of children, 74.6% of high school students, and 32.5% of adults fail to get a sufficient duration of sleep on a regular basis, making sleep duration an important target for health improvement.^{18–20} Other Healthy People 2030 sleep objectives are to reduce the rate of motor vehicle crashes due to drowsy driving and to increase the proportion of the following: adults with sleep apnea symptoms who get evaluated by a health care provider, infants who are put to sleep on their backs, infants who are put to sleep in a safe sleep environment, and secondary schools with a start time of 8:30 AM or later.

POSITION

It is the position of the AASM that sleep is essential to health. Because of sleep's significant and multifaceted connections to

health and chronic disease, sleep education should have a prominent place in K-12 and college health education, medical school and graduate medical education, and educational programs for other health professionals. Clinicians should routinely inquire about sleep habits and symptoms of sleep and circadian rhythm sleep-wake disorders during patient encounters, and hospitals and long-term care facilities should optimize sleep conditions. Healthy sleep should be targeted by public health and workplace interventions to improve health-related outcomes, and behaviors that help people attain healthy sleep should be actively promoted. More sleep and circadian research is needed to further elucidate the importance of sleep for public health and the contributions of insufficient sleep to health disparities.

DISCUSSION

Although the importance of sleep is widely recognized, as evidenced by the inclusion of sleep objectives in Healthy People 2030 (and its predecessor, Healthy People 2020), there is still a significant need for greater emphasis on sleep health in education, clinical practice, inpatient and long-term care, public health promotion, and the workplace.

K-12 health education

The CDC advises schools to add sleep education to the K–12 curriculum to help children and adolescents learn why sleep is important and to provide education on healthy sleep habits.²¹ As teachers implement the National Health Education Standards,²² sleep should be considered an essential topic, especially in relation to Standard 1, “Students will comprehend concepts related to health promotion and disease prevention to enhance health,” and Standard 7, “Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.” While the methods and effectiveness of sleep health education programs vary,^{23,24} a school-based program can improve children’s sleep and academic performance.²⁵ An important public health intervention for increasing sufficient sleep among adolescents is to delay school start times, which has the potential for widespread population impact.²⁶ It is the position of the AASM that middle school and high school start times should be 8:30 AM or later.²⁷

College health education

Sleep problems such as insufficient sleep duration, irregular sleep timing, and insomnia are common among college students, and these problems are associated with anxiety and depression symptoms.²⁸ Sleep disturbances also are a significant, independent predictor of academic problems; however, approximately three-fourths of college students report never receiving information about sleep from their university.²⁹ As part of its Healthy Campus initiative, the American College Health Association established student objectives reflecting the major public health concerns impacting college students in the U.S. One of these objectives is to, “Reduce the proportion of students who report that their academic performance was adversely affected by sleep difficulties in the past 12 months.”³⁰ Data suggest that psychological interventions for improving sleep are efficacious among college students.³¹

Medical school and graduate medical education

There is a lack of instruction and education on sleep and sleep disorders in medical school curricula and graduate medical education. A multinational survey of medical schools found that the average amount of time spent on sleep education is just under 2.5 hours, with 27% responding that their medical school provides no sleep education.³² Similarly, a survey of pediatric residency program directors in 10 countries found that the average amount of time spent on sleep education is 4.4 hours, with 23% responding that their program provides no sleep education.³³ While awareness of this deficit dates back at least four decades,³⁴ and competency-based goals for sleep and chronobiology in medical education have been developed,³⁵ there has been minimal progress in addressing this glaring need. However, a positive development has been the inclusion of fatigue mitigation in the common program requirements of the Accreditation Council for Graduate Medical Education (ACGME).³⁶ A proposal also has demonstrated how sleep medicine education can be incorporated across a four-year medical school curriculum.³⁷

Primary care

Due to the lack of sleep-related medical education and training, it is understandable that primary care providers do not routinely screen patients for common symptoms of sleep disorders, despite the availability of validated questionnaires.³⁸ While widely recognizing the importance of sleep, primary care providers report having lower comfort levels for discussing, diagnosing, treating, and managing sleep disorders.³⁹ For example, a lack of clinical knowledge and skills are among the most common barriers to the recognition of insomnia in family practice.⁴⁰ Sleep-specific continuing education can help equip internists, family physicians, obstetrician-gynecologists, geriatricians, and pediatricians to address the sleep problems encountered in clinical practice.

Specialty care

Sleep is a multidisciplinary field, as board-certified sleep medicine physicians have diverse backgrounds such as internal medicine (including pulmonology and critical care medicine), neurology, psychiatry, pediatrics, otolaryngology, family medicine, and anesthesiology. However, the relevance of sleep is not limited to these specialties. Because sleep is foundational to health and is closely intertwined with other diseases—including obesity, cardiovascular disease, stroke, type 2 diabetes, and Alzheimer disease—education about sleep, sleep disorders, and circadian rhythm sleep-wake disorders is vital for all physician specialists.^{41–45} Improved sleep education among specialists also is important for the development of collaborative care models for sleep disorders such as obstructive sleep apnea (OSA).⁴⁶

Health professionals education

Basic education about sleep and sleep disorders also is necessary for health professionals who regularly encounter patients with sleep problems and may be involved in evaluation and treatment. This sleep education is lacking in curricula for nurses, who are key frontline providers of care.⁴⁷ Currently, there is no formal training or certification in sleep medicine specifically for nurses, physician assistants, or advanced practice registered nurses.⁴⁸

Sleep disturbances such as insomnia commonly co-occur with mental health and mood problems such as depression and anxiety. Furthermore, behavioral and cognitive-behavioral interventions, which are most commonly provided by licensed clinical psychologists, are the recommended first-line approaches for the treatment of bedtime problems and nighttime awakenings in young children,⁴⁹ and for insomnia disorder in adults.^{50–52} However, a survey found that only 6% of clinical psychology programs offer formal didactic courses in sleep medicine, with only 31% of programs offering training in the treatment of sleep disorders.⁵³ Furthermore, a survey found that actively practicing clinical psychologists in the U.S. and Canada reported a median of 10.0 hours of didactic sleep training across their training or career, and 95% of respondents reported no clinical sleep training during graduate school, internship, or postdoctoral fellowship.⁵⁴

Snoring, OSA, and sleep-related bruxism are common sleep problems. Oral appliance therapy is a recommended treatment option for select patients with OSA, when prescribed by a medical provider.⁵⁵ While the majority of dental schools report the inclusion of some dental sleep education in their predoctoral dental programs, the average teaching time of 3 to 4 educational hours is insufficient to achieve competency in screening for sleep-related breathing disorders and providing custom-fabricated oral appliances.^{56,57}

Hospitals & long-term care facilities

An understanding of sleep and circadian biology is also important for the provision of patient-centered care in institutional settings, including hospitals and long-term care facilities. While sleep is essential for healing, the hospital environment can be detrimental to patients' sleep duration and sleep quality.⁵⁸ Interventions to reduce noise, optimize lighting, and consolidate interruptions necessary for patient monitoring can be beneficial to patients' sleep, mood, and well-being.^{59,60} Physical, psychosocial, and environmental factors can contribute to poor sleep in residents of nursing homes and other long-term care facilities.⁶¹ A variety of interventions, including the optimization of daytime and nighttime lighting, have the potential to improve residents' sleep.⁶²

Public health promotion programs

Significant amounts of public and private resources are invested annually in efforts to promote healthy nutrition and regular exercise and to reduce risk behaviors such as smoking. In contrast, programs that promote healthy sleep are lacking,^{63,64} despite evidence of sleep's importance to public health outcomes, especially heart health. For example, a prospective cohort study in the Netherlands found that during 10 to 14 years of follow-up, the risk of cardiovascular disease was further reduced when sufficient sleep duration was added to the four traditional lifestyle factors (ie, sufficient physical activity, a healthy diet, moderate alcohol consumption, and nonsmoking).⁶⁵ Similarly, a study evaluated sleep's relationship to the American Heart Association's "Life's Simple 7," seven cardiovascular risk factors that people can improve through lifestyle changes (ie, smoking status, physical activity, weight, diet, blood glucose, cholesterol, and blood pressure). Results show that cardiovascular health scores that include sleep were more strongly associated with cardiovascular disease

prevalence and incidence than the traditional Life's Simple 7 score.⁶⁶ Another study examined relationships between 10 self-reported healthy lifestyle behaviors and seven self-reported chronic diseases or death. The study found the behaviors that most significantly affected future outcomes were low-fat diet, aerobic exercise, nonsmoking, and adequate sleep, with sleep being more significant than other commonly promoted healthy behaviors such as eating a daily breakfast.⁶⁷ Finally, a cross-sectional study investigated the associations between sleep, physical activity, and dietary factors as predictors of mental health and well-being in young adults.⁶⁸ Results show that sleep quality was the strongest predictor of depressive symptoms and well-being, followed by sleep quantity and physical activity.

Workplaces

The CDC advises that employers can help their employees get adequate sleep and better sleep quality through evidence-based workplace health programs.⁶⁹ Suggested strategies to promote healthy sleep in the workplace include providing a sleep education program for all employees, permitting short naps during work breaks, establishing fatigue risk management systems, referring workers with sleep problems to a health care provider or accredited sleep center, and modifying environmental factors to promote worker well-being and alertness.⁷⁰ In addition to improving sleep and reducing fatigue, workplace interventions may be associated with reduced absenteeism and presenteeism, improved performance, and better overall quality of life.⁷¹

FUTURE DIRECTIONS

The mechanisms mediating the associations between sleep and health are complex and multifactorial.⁷² Therefore, there is a need for more research to address the health and societal impact of sleep deficiency and circadian dysfunction. Specifically, research is needed to evaluate intervention strategies assessing the impact of improved sleep and circadian alignment on physiological functioning, behavior, health, and well-being throughout the lifespan.⁷³ Research on sleep health disparities also may identify common causal pathways, including sleep and circadian mechanisms, that contribute to health disparities.^{74,75}

CONCLUSIONS

Sleep is essential to health. While significant resources have been invested in individual and population-level interventions to address health-related lifestyle factors such as nutrition, exercise, and smoking, programs focusing on sleep health have been notably rare. To promote public health and safety, widespread support is needed to increase sleep education, improve sleep disorders screening, optimize sleep conditions for inpatients and residents of long-term care facilities, optimize sleep health through public health and workplace interventions, and expand sleep health research.

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The American Geriatrics Society supports the general principles in the document and believes it is of general benefit to its membership.

The American Society of Anesthesiologists' Administrative Council approved support for the position statement with qualifications; since the document has neither been presented to nor approved by either the ASA Board of Directors or House of Delegates, it is not an official or approved statement or policy of the Society. Variances from the recommendations contained in the document may be acceptable based on the judgment of the responsible anesthesiologist.

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DISCLOSURE STATEMENT

The authors report no conflicts of interest and are the 2020 – 2021 members of the AASM board of directors.