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# Sleep and Aging: Challenges and Recommendations for Middle-Aged and Older Adults

Quinn M. Pearson

*Understanding and alleviating sleep problems for middle-aged and older adults is addressed through discussion of the following topics: age-related sleep changes; gender considerations; interactions among sleep, mental health, and physical illness; lifestyle and sleep; and assessment and treatment recommendations.*

*Keywords:* aging, sleep, treatment, advocacy

As sleep problems are increasingly considered to be as much a cause of mental and physical illness as a symptom (e.g., Anderson & Bradley, 2013), the need to address sleep directly and proactively is crucial. Although sleep problems have long been recognized as hallmark symptoms of depressive and bipolar disorders and classified as a separate category of mental disorders, the reciprocal nature between sleep problems and health has recently come to the foreground. Sleep challenges are associated with changes related to aging—hormonal changes, circadian rhythm shifts, and physical illnesses—such that declines in one can precipitate or exacerbate declines in the other. These interactive challenges for middle-aged and older adults are addressed as follows: age-related sleep changes; gender considerations; interactions among sleep, mental health, and physical illness; lifestyle and sleep; and assessment and treatment recommendations.

## AGING AND SLEEP

Sleep is a complex, highly coordinated process. Described by Anderson and Bradley (2013) as “being of the brain, by the brain, and for the brain” (p. 61), sleep is essential for normal brain function and, thus, mental and physical

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health (e.g., Hidalgo et al., 2012; Masters, 2014; Porkka-Heiskanen, Zitting, & Wigren, 2013; Roundtree, 2012). Sleep proceeds through two main phases: non-rapid-eye movement (NREM) and rapid-eye movement (REM; see Anderson & Bradley, 2013, and Porkka-Heiskanen et al., 2013, for descriptions of sleep physiology). Porkka-Heiskanen et al. (2013) described the main theories regarding the purpose of sleep as falling into three categories: energy metabolism, inflammation/immune response, and neural plasticity. Energy metabolism–related theories suggest that sleep is needed to restore energy. Immune response–related theories suggest a link between sleep and immune responses such that sleep helps the body to fight infection, and disruptions in the circadian rhythm increase the susceptibility to chronic inflammatory diseases. Brain plasticity–related theories suggest that sleep is necessary for learning, memory, and synaptic homeostasis. Interestingly, the same experimental research often supports more than one theory.

According to Porkka-Heiskanen et al. (2013), general agreement exists that brain activity while awake drives sleep pressure, or the force that makes us sleep. The timing and duration of sleep are regulated by circadian rhythms and the homeostatic sleep drive through which the pressure to sleep is increased by the duration and intensity of daytime brain activity (Anderson & Bradley, 2013; Porkka-Heiskanen et al., 2013). Sleep needs change naturally across the developmental life span, with the need for sleep being the greatest at 16 to 18 hours a day for newborns and gradually decreasing with age: 11 to 12 hours for preschool-aged children; at least 10 hours for school-aged children; 9 to 10 hours for adolescents; and 7 to 8 hours for adults, including older adults (Centers for Disease Control and Prevention, 2015).

The literature related to sleep and aging shows that total sleep time continues to decrease slightly as people age (Anderson & Bradley, 2013; Porkka-Heiskanen et al., 2013). A meta-analysis of 3,577 individuals from 5 to 102 years of age found that average nightly sleep duration declined further as people aged, to approximately 6.25 hours at age 65 years to 5.83 hours at age 80 years (Ohayon, Carskadon, Guilleminault, & Vitiello, 2004). Whether this decrease in sleep time reflects a reduction in the amount of sleep needed or the ability to obtain enough sleep is unclear. What is becoming increasingly clear is that both the quality and quantity of sleep are affected by changes associated with aging. Hidalgo et al. (2012) reported that older adults not only sleep less at night, but also get less deep sleep and their sleep is more fragmented. Anderson and Bradley (2013) echoed these conclusions: “As we age, total sleep time is slightly reduced compared to younger adults, with decreasing amounts of SWS [slow-wave sleep associated with NREM], increased sleep latency [time to fall asleep], and increased fragmentation during the night” (p. 68). Porkka-Heiskanen et al. (2013) discussed age-related changes in sleep mechanisms as potential explanations for these changes. Foremost in this discussion were weakened circadian rhythms, advanced circadian rhythms, vigilance-state fragmentation, increased

brain arousal during sleep, and reductions in accumulations of sleep pressure. Supporting these findings, Porkka-Heiskanen et al. explained, “During ageing, the circadian pacemaker, SCN [suprachiasmatic nucleus, a group of neurons above the optic chiasm], loses progressively its ability to produce precise rhythms, leading to disrupted circadian cycles with reduced amplitude. . . . This well-documented circadian phase advance, together with a weaker arousal signal in the evening, promotes earlier sleep timing in older individuals” (p. 320). Additionally, the increased vigilance-state fragmentation combines with increased brain arousal during sleep, thus leading to involuntary awakenings and resulting in reduced sleep efficiency and inadvertent sleep episodes when awake. Simply stated, as adults age, they tend to fall asleep earlier, take longer to fall asleep, sleep less deeply, and wake up intermittently, changes that potentially reduce the quality of sleep and its restorative powers. Thus, declines in sleep quality and sleep efficiency associated with aging may bear more significantly than the reduction in quantity (Leblanc, Desjardins, & Desgagné, 2015; Porkka-Heiskanen et al., 2013).

## **GENDER AND SLEEP**

Gender is also widely recognized as a risk factor for sleep difficulties. According to the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association [APA], 2013), women are 1.44 times more likely than men to complain of insomnia. In their review of the research literature on the influence of sex and gonadal hormones on sleep disorders, Orff, Meliska, Martinez, and Parry (2014) noted gender differences among several diagnoses: (a) Sleep-related movement disorders appear to be more prevalent in women, (b) circadian rhythm disorders are equally prevalent, and (c) obstructive sleep apnea is diagnosed more in men. They noted, however, that rates of obstructive sleep apnea increase after menopause and may be underdiagnosed in women.

Hormonal factors appear to play a role in sleep-related problems for women. According to the *DSM-5* (APA, 2013), the first onset of insomnia is associated with childbirth or menopause. In their review of gonadal hormones and the sleep disorders cited previously, Orff et al. (2014) concluded that compared with other periods of significant hormonal changes associated with the female reproductive cycle, the connection between hormonal changes and sleep disturbance is more strongly associated with perimenopause and menopause. Moreover, for postmenopausal women, insomnia may continue even after other menopausal symptoms, such as hot flashes, have abated (APA, 2013).

Although hormonal factors seem to play a role in greater sleep complaints among women, reasons for gender discrepancies are not altogether clear. As mentioned by Orff et al. (2014), despite more subjective complaints of insomnia among women, objective measures show that women sleep better than men. In the *DSM-5* (APA, 2013), similar objective differences were

reported: “Despite higher prevalence [of insomnia] among older females, polysomnographic studies suggest better preservation of sleep continuity and slow-wave sleep in older females than in older males” (p. 366). Likewise, in a study comparing gender differences in sleep among adults ages 40 years and older, Burgard and Ailshire (2012) found that women slept slightly more than men. They also found, however, that women had more interrupted sleep and took more naps, whereas men had more time for leisure. In their analyses, Burgard and Ailshire concluded that much of the gap in sleep time is explained by gendered time trade-offs related to work and family responsibilities, and, therefore, differences varied with life-span stages. The interaction of sleep with role and lifestyle factors is addressed later in this article.

### **INTERACTION OF SLEEP WITH MENTAL AND PHYSICAL HEALTH**

Although explanations for sleep problems associated with aging are not clear, the magnitude and impact of such problems are becoming clearer and are beginning to gain the attention they deserve (e.g., Anderson & Bradley, 2013; Hidalgo et al., 2012; Masters, 2014). In a random sample of 951 adults ages 65 years and older, Hidalgo et al. (2012) emphasized several key points based on their findings and those of previous studies: (a) Insomnia is a widespread health problem in older adults that is often not recognized and, therefore, is underdiagnosed and undertreated; (b) insomnia in older adults has varied, significant consequences (e.g., reduced quality of life, decline in daytime functioning, inappropriate reliance on sleep medications, increased risk of psychological disorders); and (c) given its prevalence and negative consequences, it is important to recognize insomnia and identify its true origins to appropriately differentiate primary insomnia from those related to other mental disorders or medical conditions and effectively target treatments.

Perhaps most familiar to counselors is the inclusion of sleep problems, especially insomnia, as symptoms of other mental health disorders, particularly depressive, bipolar, and anxiety disorders (APA, 2013). Although insomnia has long been considered merely a symptom of anxiety or mood disorders, it is now recognized that “insomnia may precede the appearance of a mental disorder, appear at the same time, or appear afterward” (Leblanc et al., 2015, p. 580). Anderson and Bradley (2013) and others (e.g., Masters, 2014) likewise emphasized the bidirectional relationship between sleep and mental health disturbances. Reviewing research that explored these relationships, Anderson and Bradley reported several key findings: 50% to 90% of people diagnosed with depression report poor sleep quality, depression is highly prevalent among those struggling with insomnia, and insomnia is “emerging as a clear risk factor for subsequent depression and conferring a worse outcome in those already depressed” (p. 65). They also suggested that even more evidence points to a potential causal role of sleep disturbances in the development and maintenance of bipolar disorder. Additionally, as people are

treated with various medications (e.g., antidepressant, antipsychotic), drawing connections between sleep and other mental health symptoms becomes more complicated. What is becoming clearer as the research advances is the complex bidirectional relationship between sleep disturbances and mental health. More research is needed to determine “whether sleep patterns can be used as specific biomarkers of disease or, possibly more importantly, as trait markers for subsequent illness” (Anderson & Bradley, 2013, p. 70). Additionally, whether or not symptoms rise to the level of a disorder, the experience of anxiety or depression related to insomnia deserves attention.

Other mental disorders, specifically neurocognitive disorders, also interact with sleep disturbances (Anderson & Bradley, 2013; APA, 2013; Masters, 2014). Given that many of these disorders are more common in older adults (APA, 2013), they deserve separate mention. In their review of the literature on sleep disturbance and neurodegenerative disease, Anderson and Bradley (2013) focused specifically on Alzheimer’s disease, Parkinson’s disease, dementia with Lewy bodies, frontotemporal dementia, and Huntington’s disease. They emphasized that in all forms of dementia, sleep disturbances are among the most common reasons for institutionalization and that *sundowning* (severe nocturnal restlessness) is reported to occur in 25% to 50% of older persons with dementia. Furthermore, in moderate and severe levels of Alzheimer’s disease and other forms of dementia, profound disturbances in circadian rhythms have been found through actigraphy studies in which levels of activity are monitored. Additionally, as Alzheimer’s disease progresses, sleep disturbances worsen: The number of awakenings increases and the amount of SWS decreases. In Parkinson’s disease, sleep disturbances are common, are almost universal in its advanced stages, and sometimes precede other motor-related symptoms (Anderson & Bradley, 2013). Anderson and Bradley also reported that, compared with those for Alzheimer’s disease, fewer studies exist for sleep disturbances associated with dementia with Lewy bodies; although a less clear relationship exists between sleep disturbances and the progression of the disease, “recent studies suggest an even greater level of nighttime sleep disturbance with an increase in hallucinations, agitation, and apathy” (p. 70). They also reported that a single study of frontotemporal dementia showed disrupted circadian rhythms that were less severe than those associated with Alzheimer’s disease and were also not clearly related to disease progression. Finally, in their review of the research on Huntington’s disease, Anderson and Bradley found that fragmented sleep is particularly problematic—up to 88% with the disease report sleeping problems—and sleep disturbances increase as cognitive impairment and depression worsen. On the basis of their review, Anderson and Bailey concluded that although it is not known whether improving sleep improves outcomes for neurodegenerative diseases, the role of sleep clearly needs greater recognition and attention.

Definitive conclusions about the relationship between sleep and other medical disorders are similarly difficult to draw. In the *DSM-5* (APA, 2013),

however, some sleep–wake disorders, such as breathing-related sleep disorders, require verification of specific medical conditions (e.g., polysomnography of obstructive apneas). Thus, recognition of the role between sleep disturbances and physical illnesses, including medications to treat them, is increasing, even though the causal relationships are seldom clear. In an article focused on internal medicine practice, Masters (2014) reported that “individuals with coexisting medical disorders (particularly pulmonary disease; heart failure; and conditions associated with pain, such as cancer) are at increased risk for insomnia. . . . An increased prevalence of insomnia is also associated with a variety of rheumatologic, endocrine, urologic, and dermatologic disorders” (p. ITC2). Masters also emphasized that an increased risk for insomnia is associated with some pharmacological agents—“stimulants (e.g., caffeine, nicotine), antidepressants,  $\beta$ -antagonists, calcium-channel blockers, and glucocorticoids” (p. ITC2)—and withdrawal from other agents, such as alcohol or hypnotic medications. In another medically based article, Roundtree (2012) explained some of these sleep–health connections using the sleep theories described previously, namely, energy metabolism, inflammation/immune response, and neural plasticity (see Porkka-Heiskanen et al., 2013). Roundtree emphasized the relationships between inflammatory processes, fatigue, and irritability that are associated with chronic sleep loss and the continuum of metabolic syndrome and diabetes, as well as various cardiovascular diseases, such as heart disease and hypertension. Research has continued to show these connections, such as the associations between insufficient sleep and poor dietary habits, increased caloric intake, and obesity (Chaput, 2014), along with the possibility that poor sleep may increase the risk of stroke for older adults (Preidt, 2016).

## LIFESTYLE AND STRESS

Given that sleep disturbances, medical conditions, and mental/emotional struggles do not occur in isolation, the role of lifestyle, including such aspects as diet, activity levels, and stress, bears mentioning. Clearly, ingestion of caffeine and other stimulants is commonly known to contribute to sleep problems, particularly for those who are sensitive to their effects (Porkka-Heiskanen et al., 2013; Roundtree, 2012). Likewise, as noted by Masters (2014) and Roundtree (2012), the impact of alcohol is well documented: Drinking alcohol before bedtime may help induce sleep but also contributes to waking up in the middle of the night. Studies have also shown that overall diets (e.g., high-glycemic diets; Yoneyama et al., 2014) are associated with improved sleep and that eating certain foods can improve sleep. For example, Lin, Tsai, Fang, and Liu (2011) found that kiwifruit eaten 1 hour before bedtime reduced the time to fall asleep and increased total sleep time and efficiency among adults between 20 and 55 years of age, and Garrido et al. (2010) found that ingestion of tart cherry juice increased total sleep time and sleep efficiency among small samples



of middle-aged (ages 35–55) and older adults (ages 65–85). Other authors (e.g., Roundtree, 2012) have emphasized the potential role of dietary supplements (e.g., melatonin, magnesium, passionflower) in promoting sleep. Thus, although few definitive dietary recommendations in relation to sleep can be given to older adults, the role of diet and nutrition is relevant.

Prior to a discussion of the topic of stress and sleep, the potential effects of daytime activity levels on sleep quality deserve mentioning. Roundtree (2012), among others, emphasized the important role that exercise plays in promoting good sleep. Although his recommendations were not specifically targeted to older adults, Roundtree emphasized that people need to do something physical every day by intentionally moving 20 to 30 minutes. He also pointed out that the activity does not have to involve vigorous aerobic or weight-lifting workouts and that vigorous workouts after 6:30 p.m. could be overstimulating for some and impede falling asleep; one recommendation was a gentle walk after the evening meal. Regarding older adults specifically, Porkka-Heiskanen et al. (2013) asserted that not only does aging itself reduce the accumulation of sleep pressure and, thus, the need to sleep, but the impact of insufficient brain stimulation related to daytime inactivity reduces the sleep pressure even more, potentially creating a cycle of poor sleep.

Without question, stress interferes with sleep (Brand, Gerber, Pühse, & Holsboer-Trachsler, 2010; Porkka-Heiskanen et al., 2013; Roundtree, 2012; Seelig et al., 2013; Winzeler et al., 2014). Porkka-Heiskanen et al. (2013) explained that the hormones (i.e., corticotropin-releasing hormone, adrenocorticotropic hormone, and corticosteroids) associated with the hypothalamo-pituitary-adrenal (HPA) axis, or the stress axis, promote wakefulness, and when high levels of these hormones are activated, falling asleep is not possible. In a study comparing healthy adult women (mean age of 52.8 years) with women with primary chronic insomnia (mean age of 51.7 years), Seelig et al. (2013) found significantly higher midnight salivary concentration levels among those with insomnia, indicating a dysregulation of the HPA axis. They concluded that their results and those of other studies “suggest that dysregulation of HPA is a common feature of both acute and chronic sleep curtailment. However, the mechanisms involved are unclear. . . . It remains unknown whether sleep deprivation leads to increased cortisol levels or if the dysregulation of the HPA-axis causes primary chronic insomnia” (p. 7).

The potential link between sleep-related cognitions, stress, and insomnia is worth noting. Leblanc et al. (2015) emphasized the connection between sleep difficulties and the following dysfunctional beliefs and attitudes about sleep: unrealistic expectations about sleep, erroneous thoughts about the causes and consequences of insomnia, excessive thoughts and worries at bedtime, and attempts to control these invasive thoughts. Furthermore, in their study of 2,759 adults ages 65 years and older, Leblanc et al. found that older adults with and without anxiety and mood disorders report many thoughts or worries at



bedtime, including sleep-related worries. Additionally, they found that certain dysfunctional sleep-related beliefs and attitudes were predictors of anxiety and mood disorders. These results clearly point to the need to assess and address such cognitive patterns. Echoing the suggestion of using established cognitive behavior techniques to address insomnia (Winzeler et al., 2014), Brand et al. (2010) emphasized the important role of stress management, specifically coping skills to reduce stress and cognitive techniques to address maladaptive, sleep-related thoughts.

As mentioned earlier, the role of stress related to gender and lifestyle potentially explains some of the gender differences that hormonal factors and objective measures leave open to question. On the basis of previously cited research, which focused on time for sleep and leisure among women and men in the United States ages 40 and older, Burgard and Ailshire (2012) asserted that their findings add to the mounting evidence that multiple aspects of sleep are shaped by gender roles related to work and family responsibilities. Likewise, in a study of working adults (ages 34–59 years) in Japan, Yoshioka et al. (2012) reported several findings that lend further support to this argument. First, insomnia was more prevalent in female participants (31.0%) than in male participants (23.2%). Second, in both genders, insomnia was associated with higher levels of occupational stress, overcommitment, and caregiving responsibilities. Third and most notable were the gender differences related to these factors along with time spent on household tasks; the proportion of participants who reported high job strain, high effort–reward imbalance, high overcommitment, and engaging in household tasks for 1 hour or more each day was significantly higher among female participants than among male participants. Thus, gender inequities in sleep and insomnia are partially explained by gender differences in family and employment responsibilities (Yoshioka et al., 2012).

Compared with other life stages, midlife brings particular challenges for women—an interweaving of many roles and responsibilities—that are more likely to affect sleep (Hislop & Arber, 2003). Darling, Coccia, and Senatore (2012) studied the relationship among several variables in middle-aged U.S. women, including weight, family strains/changes, physical activity, sleep, health stress, and life satisfaction. They found that among overweight, postmenopausal women, those who slept fewer than 7 hours per night experienced more family strains/changes, more health stress, and less life satisfaction. On the basis of these findings, they emphasized the need to gain a better understanding of the impact of sleep and the lack thereof on women, including strains on individual and family levels. Related concerns regarding family situations and socioeconomic factors were raised by Ravan, Bengtsson, Lissner, Lapidus, and Björkelund (2010), who studied three different cohorts of two groups of women (ages 38 and 50 years, respectively) in Sweden over a 36-year period from 1968 to 2004. Strikingly, over this time period, the proportion of women with sleep complaints almost doubled for both age groups, and insomnia rates were higher among

the 50-year-old cohorts at all time periods. These findings led the researchers to conclude that changes on the individual level to improve sleep for women are not enough; changes on the societal level are likely to be more efficient.

One family aspect that deserves separate mention is the impact of a couple relationship on sleep. Meadows (2005) discussed the concept of negotiated sleep when the sleeping environment is shared with another person. Thus, social roles affect sleep in the sense that the night is negotiated between one's own sleep needs, preferences, and desires, and those of others, particularly a spouse or partner. Reporting a single-case study of a male–female couple, Meadows noted, “Contrary to Mike [the male partner], Jean’s [the female partner] negotiated sleep comes not from her own desires but primarily from a compromise with Mike’s. . . . Her sleep is controlled to a large degree by her sleeping partner” (p. 250), and their views of sleep and the hours they need are different. This finding supports that of Hislop and Arber (2003), who found among a sample of women in midlife that both their children’s and their partner’s sleep were prioritized over their own. Similarly, on the basis of a study of the dyadic effects of anxiety, depressive symptoms, and sleep among married couples, Revenson, Marín-Chollom, Rundle, Wisnivesky, and Neugut (2015) suggested that a couples approach might be more effective, if counseling is needed to address psychological or sleep problems, particularly for women.

## ASSESSMENT AND TREATMENT STRATEGIES

Because of the prevalence and consequences of sleep problems in midlife and older adulthood, counselors should assess sleep quality routinely during the intake process by asking about the following areas: satisfaction with quality of sleep; amount of sleep each night; any sleep changes within the past year; time to fall asleep and any associated difficulties; problems with daytime sleepiness; daytime naps; awakenings during the night or early morning and ability to return to sleep; and, if applicable, the impact of sharing the sleeping environment with another person or pet (Puterbaugh, 2011). If the hallmark signs of insomnia—sleep complaints, worry about sleep, or significant daytime consequences (Rybarczyk, Lund, Garroway, & Mack, 2013)—surface from the intake, additional assessment and intervention are indicated.

As discussed previously, multiple factors are possibly involved in and affected by sleep disruption. Milner and Belicki (2010) provided a succinct overview of factors that contribute to insomnia in adults: general medical conditions, neurodegenerative disorders, chronic pain, circadian phase shifts, natural aging, psychological problems, lifestyle factors, physiological or cognitive hyperarousal, maladaptive beliefs about sleep, and maladaptive conditioning (p. 238). Because of these multiple factors related to sleep problems, counselors need to expand their interview protocol to include caffeine and alcohol intake, previous prescription or over-the-counter sedative/hypnotic medication use, shifting or

irregular sleep or work schedules, previous treatments for insomnia, and acute stressors (e.g., medical or mental illness, current medications or other drug use, work or home stress, circadian rhythm stressors; Masters, 2014). A checklist of medical and mental illnesses commonly associated with insomnia (e.g., thyroid dysfunctions, diabetes, heart diseases, depression) may enhance the accuracy of client self-report. Additionally, specific information about the sleep environment, such as lighting, temperature, and electronics, as well as routine behaviors prior to bedtime, need to be assessed. Likewise, physical activity levels and recent changes in daily or nightly routines need to be examined. Asking clients to complete a sleep diary may also provide information about sleep patterns and lifestyle factors that coincide with better and worse sleep. Detailed information about specific times when clients have slept longer or felt more rested may also provide important clues to patterns that promote better sleep. Finally, assessment of thoughts and worries prior to bedtime and sleep-related expectations and concerns deserve thorough investigation.

Given the potential interplay between sleep and physical illness, medications, and health habits, consultation between mental health counselors and clients' primary care physicians is essential. Knowing what information to share with physicians and what information to request, as well as cooperating to provide behavioral and medical interventions, is crucial to successful collaboration. Understanding the role of primary care physicians in assessing and treating sleep problems can assist counselors in this collaboration. Masters (2014) described several strategies for assessing and treating insomnia in internal medicine practice. First, physicians should screen for insomnia as a regular part of patient care by taking a comprehensive sleep history with many of the components listed previously. Second, Masters recommended assessing or testing for several conditions that could disrupt sleep, among them thyroid dysfunction; cardio-pulmonary disease; neurological disease; obstructive sleep apnea syndrome; diabetes mellitus; kidney disease; iron deficiency; and, for patients who are at risk, congestive heart failure, chronic obstructive pulmonary disease, and gastroesophageal reflux disease. Finally, when an underlying sleep disorder for insomnia is suspected or clinical evidence of a disease associated with insomnia is found, Masters recommended that physicians consider additional laboratory testing: polysomnography (an overnight sleep study), a multiple sleep latency test (series of monitoring naps for onset of REM sleep), and sleep actigraphy (an electronic device worn around the wrist that detects motion during sleep).

A thorough assessment of insomnia, including consultation between mental health and medical practitioners, best ensures what Hidalgo et al. (2012) emphasized as crucial for aging adults: recognizing insomnia and identifying its true origins to effectively target treatments. It is hoped that this process will lead to alternative treatments, rather than the typical first-line approach to insomnia, which is sleep-inducing medication (e.g., Buysse et al., 2011; Rybarczyk et al., 2013). In addition to side effects and dependency possibilities, these medications

carry particular risks for older adults, including psychomotor and cognitive slowing, daytime fatigue, increased fall risk, and rebound insomnia (e.g., Masters, 2014; Rybarczyk et al., 2013). Given these risks and the equal, if not superior, efficacy of other treatments for insomnia, such as cognitive behavior therapy (CBT), numerous authors have argued strongly that medications should not be the first-line approach (e.g., Irwin, Cole, & Nicassio, 2006; Masters, 2014; Rybarczyk et al., 2013; Trauer, Qian, Doyle, Rajaratnam, & Cunnington, 2015).

Meta-analyses have shown that CBT effectively addresses insomnia in adults (Trauer et al., 2015) and older adults (Irwin et al., 2006). Additionally, Buysse et al. (2011) showed that a brief behavioral treatment effectively treated chronic insomnia in older adults. Moreover, among a sample of adults ages 50 and older who were still experiencing insomnia despite using sleep medication, Lichstein et al. (2013) found that CBT in conjunction with medication tapering was an effective treatment. On the basis of these findings and recommendations from others (i.e., Milner & Belicki, 2010; Puterbaugh, 2011; Rybarczyk et al., 2013), the following strategies and techniques are recommended:

- Sleep education, which involves providing information about the amount of sleep needed, what constitutes good and bad sleep, changes related to aging and sleep, and how insomnia develops and persists. Sleep education is a key initial step in motivating clients to consider making sleep a priority because lack of knowledge is a barrier to making health-related changes (Granello, 2013). Helping clients understand the reciprocal role between sleep and health—physical, mental, and emotional—is an important early step. Also essential to this process is informing clients that 7 to 8 hours of sleep is recommended for adults per night, sleep may change with circadian rhythm and hormonal shifts related to aging, sleep medications are associated with risks and side effects, and cognitive behavior strategies are at least as effective as medications. Counselors need to consider not only what clients need to know but also the best means for communicating this information—websites, pamphlets, or conversations. Finally, recognizing that clients with physical health problems may need personalized education beyond their expertise, counselors can help clients prepare questions for medical providers, collaborate with medical providers, or both.
- Sleep hygiene, which includes reducing or eliminating behaviors that negatively affect sleep (e.g., ingesting caffeine/stimulants, drinking alcohol to induce sleep, going to bed hungry, drinking liquids close to bedtime, exercising close to bedtime, using media and bright lights before bedtime, seeing the time displayed on a clock, taking long daytime naps) and making adjustments that improve sleep (e.g., sleeping on a regular schedule; exercising regularly; creating an optimal sleep environment, including temperature and ambient noise). Improving sleep hygiene is

an extension of the education process and can be personalized based on specific sleep complaints and associated patterns that were assessed in the intake interview, with sleep diaries or through descriptions of exceptions to these complaints—either when sleep was good or better than usual.

- Sleep restriction, which entails following a strict schedule of bedtimes and arising times, including no napping, based on a person's average sleep time (using a sleep diary) and increasing or decreasing by 15 minutes nightly until client sleep efficiency (time asleep/time in bed) is increased to 85% to 90% and the client is satisfied with sleep and daytime functioning (see Milner & Belicki, 2010). By increasing sleep pressure through more daytime activity and restoring a sleep schedule, this strategy is particularly useful for clients who have resorted to spending more time in bed and napping during the day to compensate for poor sleep and its effects.
- Stimulus control, which involves associating/reassociating the bedroom only with sleep and intimacy by avoiding nonsleep activities, going to bed only when sleepy, leaving the bedroom when unable to fall asleep within 15 to 20 minutes and returning only when sleepy, and sleeping only in the bedroom. Resistance to these suggestions may occur. Clients, for example, may have long-standing patterns of watching television or reading in bed, or they may share a bedroom with someone who engages in these or other distracting activities. Thus, rather than simply informing clients of these recommendations, counselors need to engage clients in discussions about challenges and potential solutions, including negotiating with others in the household if needed.
- Cognitive restructuring, which consists of identifying, challenging, and modifying unrealistic beliefs about sleep and fears related to not sleeping. Rybarczyk et al. (2013) listed erroneous beliefs about sleep that are commonly experienced by older adults, such as

If I don't get eight hours of sleep (or a good night's sleep), I will get sick, my medical conditions will get worse, or I will not be able to do anything tomorrow.

Because of my age, my sleep is broken and cannot be fixed.

I should be able to sleep like I did when I was younger.

Fatigue and problems concentrating are due solely to my sleep problems.

If I sleep in, take naps, or spend enough time in bed, I will get the rest I need. (p. 84)

Presenting clients with a checklist of these thoughts is an efficient tool for identifying thoughts that are connected to the difficulty of falling asleep

or returning to sleep upon awakening. Moreover, understanding that these thoughts initiate a stress response that prohibits sleep can motivate clients to become aware of, modify, and interrupt these thoughts.

- Relaxation training, which targets cognitive and physiological arousal prior to bedtime with techniques such as deep breathing, meditation/prayer, progressive muscle relaxation, mindfulness, and guided imagery. Done prior to bedtime, relaxation techniques can become part of the stimulus control that is associated with preparing for sleep. Alone or in conjunction with cognitive restructuring, these techniques can serve to prevent or reduce cognitive arousal. Additionally, progressive muscle relaxation and body scans increase an awareness of body tension that can signal clients to implement relaxation at other times. Compatibility with clients' values and clients' confidence in using a particular technique is essential for success.

## CONCLUDING RECOMMENDATIONS

Highlighted throughout this article are sleep-related changes and challenges common in middle age and older adulthood. These changes range from minimal disruptions in sleep-wake cycles to noticeable reductions in emotional states and quality of life to significant negative interactions with mental disorders and physical illnesses. Although direct causes and consequences are seldom distinct and clear, patterns have emerged to provide direction to counselors and other providers. What is most clear is the need to assess for and help clients address sleep problems when they occur. Along with the CBT interventions described earlier, several suggestions are worth noting or reiterating:

1. Assess for sleep routinely as part of the intake protocol and throughout the counseling process. Rather than thinking of sleep changes narrowly in terms of diagnosing mental disorders, counselors should investigate sleep more broadly from a wellness perspective. If sleep problems are evident, information from several key areas can provide focus to CBT interventions; these areas include overall stress levels, diet and exercise habits, evening routines, thoughts and worries at bedtime, and thoughts and attitudes about sleep. Engaging clients in dialogue and using checklists are two helpful assessment methods, as is encouraging clients to complete a sleep diary (refer to a 2-week sleep diary available at [www.sleepeducation.com](http://www.sleepeducation.com)) that tracks sleep time along with caffeine intake, medications, and exercise.
2. Ask about various life roles and routine stressors to get a better picture of personal and sociocultural factors that may be affecting clients' sleep, particularly for clients who have multiple roles, including caregiver, parent, or spouse/partner. Questions about caregiving responsibilities and sleep

patterns/preferences for a spouse or partner are key. Also, asking about a typical day can give a snapshot of life roles and stressors and provide direction for stress-reduction strategies, self-advocacy negotiations, and other advocacy strategies.

3. Advocate for clients and help clients to advocate for themselves when relational or environmental barriers to good sleep exist. Recognizing and addressing these barriers when designing CBT interventions is crucial for successful implementation. Consider integrating assertiveness training to teach self-advocacy and couples or family counseling to address entrenched systemic patterns.
4. Coordinate care with primary care physicians and advocate for clients when necessary. Collaborating with medical providers is essential when physical health problems are contributing to or worsened by sleep problems. This collaboration can ensure that physical causes for sleep problems are identified and addressed medically. It also provides an avenue for counselor advocacy. Most notably, counselors can advocate for using CBT interventions rather than medications as a first-line approach and tapering sleep medications for clients who continue to have sleep problems despite their use. More broadly, consider integrative health care arrangements with physicians to initiate collaborative agreements, including psychoeducation approaches, to affect a wider range of clients.

Good sleep is necessary for good health—emotional, cognitive, and physical. Sleep problems and aging often coincide as a result of multiple contributing factors. Inadequate and unrestful sleep interacts with other mental health problems, physical conditions, and medications, resulting in reduced quality of life for middle-aged and older adults. Assessment, education, collaboration, treatment, and advocacy offer hope, relief, and improvement.

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