

SPECIAL REPORT

Shiftwork Sleep Disorder

The Role of the Nurse Understanding SWSD for You and Your Patients

Raising awareness for yourself and your patients

As shiftworkers, nurses are at risk for shiftwork sleep disorder (SWSD), which can cause physiologic and psychological distress and lead to various errors. Nurses also are well positioned to identify SWSD in patients. *American Nurse Today*, the American Nurses Association, and the American Nurses Foundation, in collaboration with CORE Medical Education, LLC, developed a web-based continuing nursing education (CNE) program on SWSD for nurses, with an unrestricted educational grant from Teva Pharmaceuticals. As part of this initiative, nurses were asked to complete a survey before and after participating in the CNE program to determine what they had learned. This report discusses SWSD and survey results and includes the article "Tips for achieving healthy sleep."

The CNE program is available at <http://ananursece.healthstream.com>. The program and this report are supported by an unrestricted educational grant from Teva Pharmaceuticals to the American Nurses Foundation. The CNE provider is the American Nurses Association's Center for Continuing Education and Professional Development.

Shiftwork sleep disorder: Raising awareness for yourself and your patients

As a shiftworker, you may have this disorder yourself. As a caregiver, you may detect it in patients.

More than 22 million Americans meet the criteria for shiftworker. Among them are nurses, whose work schedules revolve around the 24/7 needs of patient care. Nurses may be required to work several consecutive shifts of 10, 12, or 16 hours, followed by just 1 to 2 days off. (See *Defining shiftworkers*.)

According to the Centers for Disease Control and Prevention (CDC), lack of sleep due to long shifts and shiftwork sleep disorders (SWSD) in particular poses a serious health burden. (See www.cdc.gov/niosh/topics/workschedules.) SWSD affects work performance, impairs safety, and alters quality of life.

Nurses need to be aware of SWSD and be able to detect signs and symptoms both in themselves and patients.

What's more, research shows it contributes to development or exacerbation of various comorbid conditions, including cardiovascular disease, diabetes, GI disorders, and depression. Persons with SWSD suffer not just extreme sleepiness but significant and often detrimental health effects of those comorbid conditions. Nurses need to be aware of SWSD and be able to detect signs and symptoms both in themselves and patients.

In October 2012, the American Nurses Association launched a continuing nursing education (CNE) activity titled "Shiftwork Sleep Disorder: The Role of the Nurse, Understanding SWSD for You and Your Patients." This activity featured an audioguided clinical web course and an educational patient toolkit (available at <http://eo2.commpartners.com/users/swsd/>).

Michael Decker, PhD, RN, RRT, Diplomate of the American Board of Sleep Medicine and Byrdine F. Lewis Program Chair in Nursing at Georgia State University, served as program chair. Together with faculty composed of leaders in the research and clinical management of SWSD, Dr. Decker developed this CNE activity to provide nurses with ed-

Defining shiftworkers

Shiftworkers are employees who work "rotating" or extended shifts (shifts of more than 8 hours). For example, a shiftworker may work 2 weeks of 7 AM-to-3:30 PM shifts, followed by 2 weeks of 11 PM-to 7:30-AM shifts.

An extended shiftworker may work 7:00 AM to 7:00 PM for several consecutive days, followed by 1 to 2 days off.

ucation on signs and symptoms of SWSD, negative health and performance consequences of SWSD, screening tools, the latest management guidelines and recommendations, and strategies nurses can use to help patients, colleagues, and themselves.

Eight weeks after nurses participated in the CNE activity, they were contacted to take part in a voluntary outcomes survey to measure their progress in meeting the program's stated educational objectives, as well as to measure changes in their knowledge and competency. *American Nurse Today* (AMNT) spoke with Dr. Decker about the outcomes of this CNE activity.

AMNT: Why do you think SWSD is an important topic for nurses?

Dr. Decker: In most healthcare facilities, many clinical staff members work rotating or extended shifts. Sleep loss may follow these shifts—for example, from being awakened during daytime “sleep time” by phone calls and the need to deal with family obligations, ongoing academic pursuits, or just life in general. Such sleep loss can contribute to development of SWSD.

Besides sleep disruption caused by activities of daily living, some people may have a sleep-related disorder, such as sleep apnea, restless legs, or insomnia. During my time at the CDC, our research suggested up to one-third of the U.S. population may have insomnia, more than 20% have some degree of sleep apnea, and a large number have restless legs. Those findings suggest many shiftworkers may have a comorbid sleep disorder and may be unaware of it. Considering the combination of sleep loss due to shiftwork and additional sleep loss from an undiagnosed sleep disorder, cumulative sleep loss may be significant.

Sleep is an active brain process needed to maintain normal neural function. If sleep time falls below the “normal” amount of approximately 8 hours or if sleep continuity is disrupted, executive brain processes (including working memory, critical-thinking skills, and reaction times) may be disturbed during subsequent waking hours. Studies by leading sleep-research programs and the CDC show a

link between short sleep duration and reduced daytime vigilance, depression, and several chronic conditions (including diabetes, cardiovascular disease, obesity, and cancer).

Research on shiftwork impact shows negative outcomes in the physical, psychological, and social domains. Morbidity associated with SWSD is significantly higher than that experienced by daytime workers with identical symptoms, such as sleep-related accidents, depression, absenteeism, and missed family and social activities.

Growing concern centers on whether workers can maintain adequate performance levels over long shifts, particularly when those shifts span nighttime hours. One study reported shiftwork was the main factor linked to medical errors. Another found that professional mistakes, such as drug administration errors, incorrect operation of medical equipment by nurses, and needlestick injuries were associated specifically with excessive sleepiness.

AMNT: What were some of your main findings from the survey that participants took after completing the CNE program?

Dr. Decker: Before taking our CNE activity, the overwhelming majority of nurse participants didn’t recognize many adverse outcomes attributable to SWSD. Only 16% were aware that SWSD is a risk factor for traffic accidents, diabetes, cancer, and illness necessitating sick leave. But after completing the activity, nearly two-thirds (63%) recognized SWSD can contribute to

Sleep quality is as important as quantity; uninterrupted sleep, particularly during daytime, is a must.

any of these conditions. (See *Recognizing SWSD in patients: Before and after.*)

AMNT: Are you surprised that nearly half the participants didn’t routinely consider SWSD as a possible cause of excessive sleepiness in patients and coworkers?

Dr. Decker: Yes. Much like police officers, firefighters, paramedics, and pilots, nurses and other healthcare workers are at risk for SWSD. One potential reason for this underrecognition may be reduced awareness of the many factors contributing to SWSD, including the number of consecutive hours and days a person routinely works and duration of uninterrupted sleep before working hours begin. With more jobs now requiring shiftwork, nurses and other healthcare workers need to be vigilant. And they must keep in mind that the number of people reporting SWSD symptoms has been rising. They need to be proactive and advocate both for their own health and their patients’. (See *Tools for assessing excessive sleepiness.*)

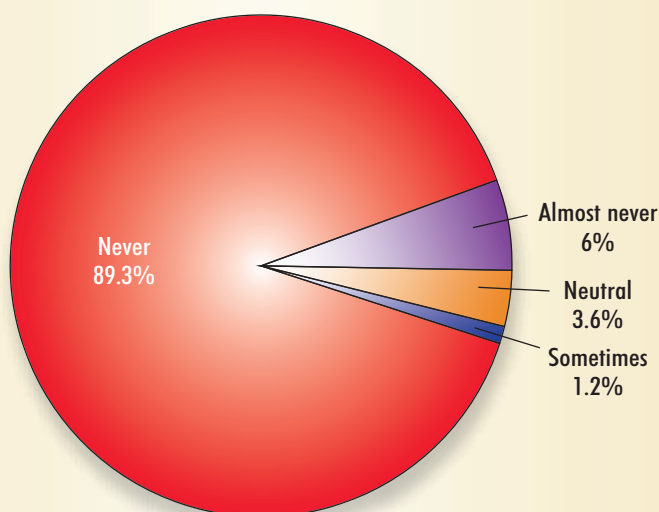
Tools for assessing excessive sleepiness

Multiple diagnostic tools are available to measure sleepiness, ranging from questionnaires to laboratory-based multiple sleep-latency testing. A widely accepted, easily implemented questionnaire is the Epworth Sleepiness Scale (ESS). This brief eight-item questionnaire asks about a person's chances of "dozing" in sedentary situations, such as when reading a book or sitting in a meeting. Besides screening for sleepiness, ESS can be used to determine sleepiness reduction after an intervention.

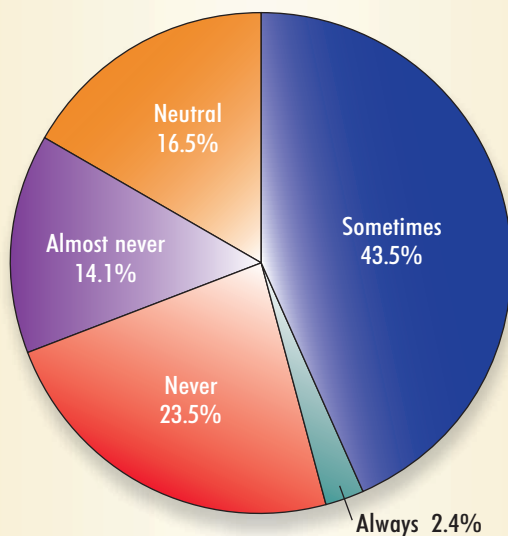
Clinicians can use the ESS in both office and inpatient settings. The maximum score is 24. The average score for a healthy, alert person ranges from about 4 to 7. A score of 10 or higher suggests clinically significant sleepiness.

In the survey sent to nurses who took the CNE activity "Shiftwork Sleep Disorder: The Role of the Nurse, Understanding SWSD for You and Your Patients," 89% said they'd never used the ESS before participating in the CNE activity. After participating in it, nearly 46% reported they sometimes or always used the ESS to help determine patients' sleepiness level.

BEFORE you participated in this CNE activity, did you use the Epworth Sleepiness Scale (ESS) to measure excessive sleepiness in the office setting?



AFTER participating in this CNE activity, have you used the Epworth Sleepiness Scale (ESS) to measure excessive sleepiness in the office setting?



AMNT: What are the standard management strategies for SWSD?

Dr. Decker: Treatment takes a multifaceted approach, with two ultimate goals: the patient sustains wakefulness when wakefulness is required and achieves sleep when sleep is required. The first step in achieving these goals may focus on sleep hygiene and planned napping to improve both the quantity and quality of sleep. Extending sleep times by going to bed earlier on a regular basis can increase sleep time and start compensating for lost sleep. Sleep quality is as important as quantity; uninterrupted sleep, particularly during daytime, is a must.

All shiftworkers and their employers should learn strategies for improving sleep hygiene and creating an environment for restorative sleep. These strategies include:

- using bright light therapy before or during a night shift
- reducing daylight exposure on the commute home from work, if possible
- establishing a dark, quiet sleep environment at home (for example, by using black-out curtains or melatonin medication before a required sleep period)
- napping to increase sleep quantity (napping timed judiciously before and/or during work to counteract shiftwork sleepiness can increase on-the-job alertness)
- improving shiftwork conditions (for instance, bright-light exposure during a night shift and appropriately timed naps)
- improving shift schedules, including use of clockwise-

rotating shifts and avoiding consecutive shifts longer than 12 hours.

If behavioral changes don't bring the expected improvement, prescription medications may be considered. The wakefulness-promoting drugs modafinil and armodafinil are the only drugs approved for treating SWSD. Evaluated specifically in patients with excessive sleepiness attributable to SWSD, they have been shown to reduce sleepiness during the work period, with associated benefits of decreased accidents and near-misses during the commute home.

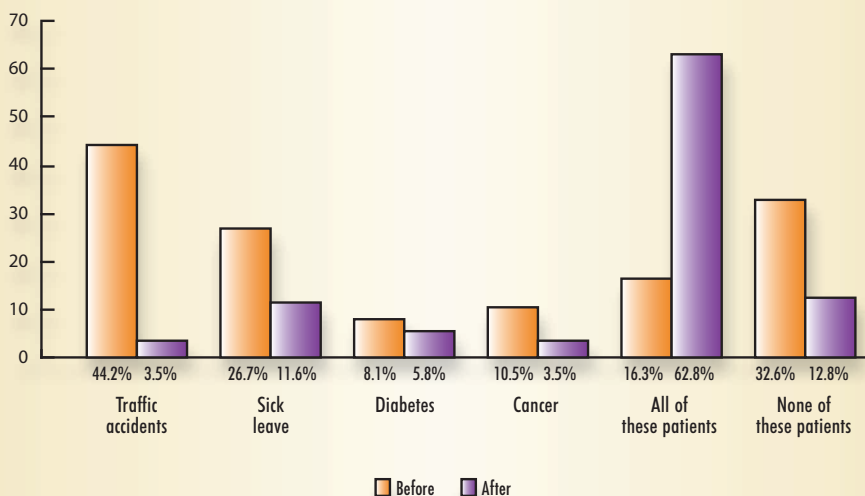
Before participating in our CNE program, 60% of nurses said they'd considered using only caffeine to improve SWSD symptoms. Two months after completing it, twice as many reported using multiple strategies, including sleep hygiene, pharmacologic management, bright-light exposure, and caffeine.

AMNT: Do you have any takeaway thoughts?

Dr. Decker: Because sleep disorders aren't "top of mind" for many healthcare providers, they're significantly underdiagnosed and undermanaged. Clinicians have an increased responsibility to recognize the important role that sleep plays in our overall well-being. It's crucial that we recognize presenting signs and symptoms of excessive sleepiness and SWSD. In the hospital, patients with these disorders commonly present after being involved in motor-vehicle or work-related accidents. In office-based practices, they may seek help for a specific disorder that may be a comorbid illness

Recognizing SWSD in patients: Before and after

The chart below compares nurses' ability to recognize shiftwork sleep disorder (SWSD) in specific types of patients (traffic accidents, sick leave, diabetes, cancer, all of these patients, or none of these patients) before and after participating in the SWSD continuing nursing education activity.



associated with shiftwork or SWSD. In these patients, we need to recognize the possibility of excessive sleepiness or SWSD and ask about the patient's sleep and work habits. Nurses are in a unique position: Many of us

are shiftworkers ourselves, and we can play an important role in identifying and implementing best practices to improve the lives of those with sleep disorders—patients, colleagues, and ourselves.

To learn more about SWSD, access the online multimedia education program "Shiftwork Sleep Disorder: The Role of the Nurse" at <http://ananursece.healthstream.com>.

Faculty for this program:

Michael Decker, PhD, RN, RRT, is an associate professor, Diplomate of the American Board of Sleep medicine, and Byrdine F. Lewis Program Chair at Georgia State University School of Nursing and Health Professionals in Atlanta, Georgia.

Jeanne Geiger-Brown, PhD, RN, is an associate professor at the University of Maryland in Baltimore. A federally funded researcher in the area of sleep and fatigue, she has published more than 30 works related to nursing work demands and adverse outcomes.

Kathryn Lee, PhD, FAAN, CBSM, is a professor and associate dean for research at the University of California, San Francisco, School of Nursing.

James Wyatt, PhD, DABSM, CBSM, is the director of Sleep Disorder Services and Research Center and an associate professor at the Rush University Medical Center in Chicago, Illinois.

Mark your calendar for the planned American Nurses Association SWSD webinar on December 18, 2013, from 1 to 2 PM EST.

Visit www.AmericanNurseToday.com/Archives.aspx for a list of selected references.

Tips for achieving healthy sleep

Learn about the behavioral and environmental factors that can interfere with your sleep. By Jaime Murphy Dawson, MPH

Healthy sleep improves our personal health and ability to work productively and safely. To maintain healthy sleep habits (also called sleep hygiene), we must control the factors that can interfere with sleep. Sleep interference can result from both behavioral and environmental factors. *Behavioral* factors are choices a person makes that affect sleep, such as caffeine use, diet, and exercise. *Environmental* factors are external and include noise, tempera-

ture, light, stress, work schedules, length of commute, and family and social obligations.

Most nurses who work shifts or long hours are familiar with sleep interference. Working the night shift is especially disruptive because it goes against our natural sleep-wake cycle. Despite these challenges, though, you can follow the tips below to improve both the quality and length of sleep.

An estimated 50 to 70 million

people in the United States suffer from sleep disorders. For them, even the best coping strategies may not help. If you have ongoing trouble falling or staying asleep and it's affecting your alertness at work or while driving, consult your healthcare professional.



Visit www.AmericanNurseToday.com/Archives.aspx for a list of selected references.

Jaime Murphy Dawson is senior policy analyst in the ANA Department for Health, Safety, and Wellness.

Make sleep a priority. Sleep is a necessity, not a luxury. Ask your partner or spouse and other family members to help by encouraging you to sleep and not disturbing you when you're sleeping. If necessary, remind them that sleep will keep you healthy, reduce stress, and help you do your job safely.

Establish a routine. Having a consistent, peaceful bedtime routine prepares your mind and body for sleep. Your routine may involve taking a warm bath, reading, journaling, or listening to soothing music. Reducing stress and unwinding from the day will help you fall asleep faster and achieve a better quality of sleep.

Eat a healthy diet. Avoid heavy or spicy foods before bedtime. If you drink alcoholic beverages, do so in moderation and stop drinking a few hours before you go to bed. While alcohol causes drowsiness, it may disturb your sleep and cause you to awaken sooner.

Sleep in a dark, quiet, cool room. A good sleep environment makes a difference. If you sleep during the day, keep your bedroom as dark as possible by using room-darkening curtains or shades or wearing an eye mask. Use a "white noise" machine or wear earplugs to create a quiet environment. Make sure your room is at an optimal sleeping temperature.

Reduce screen time. Light and noise from televisions, smartphones, and tablets are stimulating and can make it harder for you to fall asleep. To avoid temptation, recharge electronic devices outside your bedroom so they're not within arm's reach.

Use caffeine in moderation. The half-life of caffeine is 5 to 6 hours—even longer for some people. So if you drink caffeinated beverages at work, do so only at the beginning of your shift. That way, the caffeine will be out of your system when you're ready to sleep.

Time your exercise right. Body temperature starts to dip when it's time for sleep and stays lower while we sleep. Generally, 20 to 30 minutes of vigorous exercise 5 to 6 hours before bedtime raises body temperature for a few hours, and then leads to a temperature dip that's ideal for sleeping. Timing is important: exercising too close to bedtime can cause difficulty falling asleep as it stimulates the heart, muscles, and brain.

Turn down the lights. Light is the primary factor influencing circadian rhythms (the body process that regulates periods of alertness and fatigue throughout the day). Bright light increases alertness. Turning off or dimming lights 1 to 2 hours before going to bed can promote sleepiness.