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Research has shown that lack of sleep or suffering from sleep disorders can have long term effects causing glucose intolerance, high blood pressure, depression, and increased risk for myocardial infarctions. In addition, economic costs related to sleep disorders continue to grow. It has been estimated that patients with undiagnosed obstructive sleep apnea (OSA) have double the healthcare costs compared to patients without OSA, and patients suffering from insomnia have a direct cost of 15.2 billion dollars spent on products and treatments annually.

As a healthcare professional involved in the sleep industry, I recognize that there continues to be a significant lack of awareness and knowledge among healthcare professionals regarding sleep disorders. For this reason, I am pleased to have been provided the opportunity to enlighten the nursing community and the public with articles related to sleep. My goal is to be able to empower the reader to educate patients, families, and themselves regarding the importance of improving sleep wellness and overall well-being.

The five contributing authors for this edition are from a variety of working backgrounds. The first article is written by Dr. Lucille Gambardella who is no stranger to the DNA Reporter or the nursing community. She holds the distinction as Professor Emeritus at Wesley College and has been a certified clinical specialist in adult psychiatric/mental health nursing for over 30 years. Dr. Gambardella’s article explores the impact of sleep on mental health. The second article is written by Elaine Stevenson, MS, RN, CPNP, who works in the sleep clinic at Nemours Children’s Hospital. Elaine’s article discusses sleep in children.

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Vision: The Delaware Nurses Association is dedicated to serving its membership by defining, developing, promoting and advancing the profession of nursing as an art and science.

Mission: The Delaware Nurses Association advocates for the interest of professional nurses in the state of Delaware.

Goals: The Delaware Nurses Association will work to:
1. Promote high standards of nursing practice, nursing education, and nursing research.
2. Strengthen the voice of nursing through membership and affiliate organizations.
3. Promote educational opportunities for nurses.
4. Establish collaborative relationships with consumers, health professionals and other advocacy organizations.
5. Safeguard the interests of health care consumers and nurses in the legislative, regulatory, and political arena.
6. Increase consumer understanding of the nursing profession.
7. Serves as an ambassador for the nursing profession.
8. Represent the voice of Delaware nurses in the national arena.

Mission: Advancing the profession of nursing as an integrated health care profession.

The Delaware Nurses Association is dedicated to serving its membership and affiliate organizations.

Culture:
1. Promote high standards of nursing practice, nursing education, and nursing research.
2. Strengthen the voice of nursing through membership and affiliate organizations.
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Welcome to the November-December-January edition of the DNA Reporter. It is the start of the busy season as the holidays approach! Where did summer go? It seemed to just fly by. Before you know it, winter will be knocking at our door. So, let's enjoy the beautiful fall weather while we can.

Although this time of year is a fun season with festive lights and the enjoyment of celebrations among family and friends, it can also be a stressful time of year for many people. How well prepared are you to maintain your health and wellness during this season? And, in particular, are you getting enough sleep each night to help you feel motivated and healthy? These questions are appropriate for the topic of this edition of the DNA Reporter which is focused on sleep and health. As sleep plays an essential role in how we maintain a healthy balance; lack of sleep can have a negative effect on both our mind and body.

I want to thank Lyron Deputy, MSN, RN, MBA for his contribution as Guest Editor in emphasizing the importance of sleep and how it impacts our overall health and wellness. As you read through the articles, think about your own personal sleep habits (sleep hygiene) and whether you are truly having “sweet dreams” and “a good night’s sleep” when you close your eyes. Or, do you find yourself waking up in the middle of the night – maybe more than once? Do you nod off during the day while working or even while talking with a colleague? Do you often have an intense desire to sleep during your routine day? The authors have provided us with important information related to how sleep, or the lack of sleep, can negatively or positively affect our lives. I believe you will find this edition’s articles to be insightful as the authors discuss various topics related to sleep and health.

Board of Director Happenings: The Delaware Nurses Association Board of Directors will be very busy over the next few months. The Board of Director’s Retreat will occur on Saturday, October 31, 2015, and it is during this meeting that we will discuss how the currently revised American Nurses Association Bylaws, which were voted on during the Membership Assembly in Washington, D.C. this past July, help us to revise our organization’s strategic plan. In addition, on Tuesday evening, November 17, 2015, we will have our next General Membership Meeting. This will be held in the evening starting at 6:00 p.m. at Wesley College in Dover, Delaware. I hope that you will attend and share with the Board of Directors your thoughts and concerns related to nursing in Delaware.

Florence Nightingale Adventure: Of particular delight for this upcoming spring is the trip that is being planned by the Delaware Nurses Association for travel to England from May 17, 2016 through May 22, 2016. How exciting to have the opportunity to travel through London and visit the Florence Nightingale Museum as well as many other sites of interest that can be explored in Bath and Oxford with your nursing colleagues. You can find more information about the trip on the DNA website. Please contact Sarah Carmody if you want to discuss the trip in more detail.

To all the nurses in the state, I wish you a safe, healthy, and happy New Year! Thank you for all that you do every day.

Karen L. Panunto

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Here’s a true story! A nurse was named in a lawsuit after a 20-year-old female she saw in an urgent care clinic later died from one of the most dangerous forms of bacterial meningitis.

Case summary:
- The nurse attended to the patient and determined that he needed to go to the ER within 5 minutes of the patient arriving at the clinic.
- The patient’s girlfriend took him directly to the hospital where he was triaged but showed no fever and normal blood pressure. The patient began showing signs of deficit within two hours later, and an hour afterward began to be treated for meningitis even though a diagnosis had not been confirmed.
- The patient was definitively diagnosed with Neisseria meningitidis, Group B, the next day. He died less than 24 hours after arriving at the urgent care clinic.
- The nurse was named, along with the clinic where she worked, the physician working at the clinic, the ER physician, and the hospital, in a lawsuit brought forth in the patient’s name. The patient alleged that if the nurse would have triaged the patient and the physician would have seen him the patient would have recognized the symptoms of meningitis and administered antibiotics in time to save his life.

Defense experts supported the actions of the nurse in referring the patient to the ER. Immediately, Discovery also confirmed that the patient had been ill for several days before seeking care, and the defense concluded that no treatment could have reversed the course of his illness.

Despite this, her defense costs topped $125,000.

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References


ACRN. Beverly Fernandez-Harrington, FNP, MSN, AAHIVS, Canadian Registered Nurse, a Family Nurse Practitioner and currently works at an outpatient surgery center. Her article explores sleep in the Hispanic culture. The next article is written by Tracy Martini, MSN, RN, and discusses preoperative care and complications related to undiagnosed OSA. Tracy is finalizing her degree to become a Family Nurse Practitioner and currently works at an outpatient surgery center.
Promoting Healthy Sleep in Mental Health Clients

Lucille C. Gambardella, PhD, APRN-BC, CNE, ANEF

Introduction
Sleep and its relationship to health are on everyone's mind today. The Media is full of articles on sleep: too much sleep, too little sleep, how much sleep is enough?, how to get quality sleep?, sleep and obesity, sleep and cardiovascular health, and the list goes on. Americans are notoriously sleep deprived according to Harvard Health (2015), and those with psychiatric disorders are even more likely to be affected. Getting enough quality sleep is like putting money in the bank...and that money becomes energy that activates during sleep to repair and restore the body both physically and mentally. Lack of sleep slows down thought processes, impairs memory, makes learning difficult, and slows down reaction time. Sleep deprivation can impact daily life emotionally, financially, socially and can effect personal safety as well as the safety of others.

Promoting healthy sleep is highly important for those with emotional problems and serious mental illness. Chronic sleep problems affect 50-80% of typical psychiatric clients compared to 10-18% of adults in the general population (Harvard Medical School, 2015). Sleep disorders are most commonly seen in clients with anxiety, depression, bipolar disorder, substance abuse, and attention deficit hyperactivity disorder (ADHD). In the past, insomnia and sleep disorders were seen as symptoms in this population. But recent research suggested that sleep problems may actually increase the risk for these disorders and contribute to psychiatric disorders in general. (National Institute of Health [NIH], 2013). The clinical application of these findings is that treating sleep disorders may actually help alleviate the symptoms of the mental health problem. This premise can be used by psychiatric nurses and others who provide treatment for mental health clients to promote healthy sleep as part of any client treatment regimen.

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General Considerations about Sleep
There are 2 major categories of sleep:
• "quick sleep"; in this category the individual progresses through 4 stages of increasing deep sleep. Body temperature decreases, muscles relax, and heart rate and breathing slow down. In the deepest stage (4), physical changes actually help boost the functioning of the immune system
• "REM" sleep (rapid eye movement): this is the stage where dreams occur. Body temperature, heart rate and breathing increase. Research indicated that REM sleep enhances learning and memory and contributes to overall mental health. Achievement of this is the sleep state desired (Maddox, 2009).

Although advances in research have been monumental, scientists are still trying to understand all the sleep mechanisms. They do know that disruption in sleep affects neurotransmitter levels and stress hormone levels to create impaired thinking and difficulty with emotional regulation. As a result, insomnia may impact the symptoms of emotional disorders (NIH, 2015). Lack of sleep alters mood, causes irritability and anger, and lessens one's ability to cope with stress—all outcomes that complicate or contribute to emotional distress.

Importance of Promoting Healthy Sleep and Mental Health
Most people know sleep is important. However, most people don't know the effect sleep has on good mental health. Science is not clear on the exact link between mental health and sleep. Advanced practice nurses in mental health who conduct mental health assessment are educated to assess sleep habits and to consider sleep data in determining a diagnosis and treatment plan.

Sleep disorders can be considered as both a cause and effect of mental illness. For example, a recent study from the Journal of Sleep indicated insomnia in teenagers is a predictor of depression later in life as teens with insomnia were twice as likely to develop depression in early adulthood (Hale, 2010). Further, sleep disorders can exacerbate symptoms of mental illness such as anxiety and bipolar disorder. Studies have found that 25-65% of manic episodes are preceded by disruptions in sleep (Harvard Medical School, 2015).

More serious sleep disorders such as sleep apnea are 60% more likely to be present in those with depression and people with chronic insomnia are also more likely to develop major depression, substance abuse disorders, and to commit suicide (NIH, 2013). This preponderance of data makes it difficult to ignore the importance of quality sleep for good mental health.

Nursing Interventions in Promoting Healthy Sleep for Improved Mental Health
Since the link between healthy sleep and mental health has been identified, nursing interventions to promote quality sleep are important for this population and for clients in general; therefore, prompt assessment and non-pharmacologic treatment are encouraged. The following is a suggested protocol for promoting quality sleep. This protocol is divided into five intervention categories that should be considered when addressing the preventive and non-pharmacologic approaches to problem sleep patterns. Each of the categories is easily implemented, cost-effective measures that can be utilized in any setting. This health teaching can provide quality outcomes and a rewarding change in sleep patterns for the mental health client.

Category 1: Lifestyle changes
Examine lifestyle choices that may contribute to poor sleep patterns.
Decrease or eliminate caffeine, alcohol and nicotine (provides other health benefits as well) If elimination/decrease is not an option, then avoid their use for several hours prior to bedtime.

Category 2: Physical Activity
• Aerobic activity improves deep sleep and helps individuals fall asleep more quickly and stay asleep. Encourage aerobic activity daily.
• Schedule physical exercise or activity 20-30 minutes daily at least three times per week.
• Do not exercise right before bedtime; good guide is exercise 5-6 hours prior to normal bedtime.
• Physical activity can reduce anxiety and lift an individual's mood and can be beneficial for anxiety and depression as it increases those brain chemicals that regulate mood.

Category 2: Sleep Hygiene
• Sleep hygiene involves determining a pattern or ritual of preparation for sleep: assist the client to formulate a habitual routine that enables the "learning" of how to sleep better.
• Sleep hygiene should include maintaining a regular sleep/wake schedule; go to sleep and wake up at the same time daily; no exceptions. Changing the pattern on the weekend can disrupt the sleep cycle.
• Use the bedroom for sleep, no television, no computers, no eating in the bedroom.

Promoting Healthy Sleep continued on page 11

Dr. Gambardella has her BSN from Villanova University, MSN from Boston University, and PhD from Columbia Pacific University and she has been an ANCC certified clinical specialist in adult psychiatric/mental health nursing for over 30 years and a nurse educator since 1972. She is certified in nursing education (CNE) and a Fellow of the Academy of Nursing Education (NLN). She is currently the CEO of Positive Transitions, a nursing education consulting company and can be reached at 33066 East Light Drive, Lewes, DE or by phone at 302-270-7955.
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Sleep in Teenagers: Short on Catching Some Zzzzs?

Elaine Stevenson, MS, RN, CPNP

Elaine Stevenson earned her BSN from East Carolina University and her MS in Pediatric Primary Care Nursing at the University of Maryland. She is board certified as a Pediatric Nurse and has been a direct care nurse for over 30 years. Elaine spent 16 years practicing in Adolescent Medicine and is currently a Sleep Medicine Pediatric Nurse Practitioner at Nemours Alfred I. duPont Hospital for Children. She serves as an APRN representative on the Nursing Education Council at Nemours. Elaine can be reached by email at estevens@nemours.org or at her office (302) 651-5056.

As an Advanced Practice Nurse employed in Pediatric Sleep Medicine, I often confront with parental concerns regarding their inability to get their teenagers out of bed to avoid school tardiness. Sometimes teens are just difficult to awaken, others are having trouble concentrating at school and academics may suffer. Some adolescents refuse to get out of bed all day, and absenteeism becomes a problem, too. Questions inevitably arise about how much sleep teenagers need, and how parents can get teens to go to sleep earlier? Parents often wonder if there is something seriously wrong with their adolescent, since they are so tired. In an effort to avoid using last resort tactics (repeated urgings, yelling, dumping youngsters off of mattresses, drenching obtunded adolescents with cold water, or even addressing a court summons for truancy), this article proposes to disseminate some information regarding sleep in adolescents. The discussion addresses the recommended quantity of sleep, causes and consequences of poor sleep, offers some helpful hints for managing sleep issues and provides suggestions for when to seek help from sleep specialists.

The most recent research on sleep in teenagers (ages 14-17 yrs) indicates that they need an average of 8 to 10 hours of sleep nightly. Nine hours may be cited as causes (Brody, 2104). Set bedtimes tend to be relaxed as children get older and teens tend to stay up later to complete homework. Light exposure from electronic devices may also interfere with sleep onset by increasing alertness, instead of promoting relaxation (Crowley, Tarokh, & Carskadon, 2014). Excessive caffeine intake may also be a contributing factor.

Other physiologic contributors to inadequate sleep have been linked to hormone changes that occur during puberty. The natural shift in aces tendency to fall asleep later is assumed to be related to both brain maturity and hypothalamic-pituitary-gonadal activity. The propensity to be a night owl increases an adolescents ages, and therefore, is associated with puberty. The quantity of sleep required in the later teen years does not seem be decreased, but the sensitivity to light exposure late in the evening appears to be enhanced (Crowley et al., 2014).

Other research has proposed that the decline in sleep quantity may be a function of brain maturation even more than due to poor sleep habits and overscheduled lives. In fact, REM sleep during adolescence does not decrease, despite overall diminished sleep time according to a study by California Davis Sleep Laboratory. Since older teens EEG patterns were approaching that of adult patients, they postulate that brain maturation is a significant contributor to diminished quantities of sleep (Gever, 2015). This process is called pruning, where the biologic processes that contribute to sleep regulation involve the sleep-wake cycle (circadian rhythm) and the drive for sleep (homeostatic sleep system). The circadian rhythm consists of a 24-25 hour cycle that is regulated in the hypothalamus. Within the hypothalamus, the subcaruncle nuclei (SCN) is thought to be the “master clock” that helps organize our sleep rhythms. Melatonin is a hormone secreted by the pineal gland as part of the process. Melatonin levels peak in the evening and decline at routine wake up times. Exposure to daylight and darkness also contribute to the timing of the circadian rhythm, but is capable of manipulation. Both melatonin and light exposure regulate our sleep cycles (Crowley et al., 2104).

The interaction between the circadian rhythm and our drive for sleep interact to regulate sleep. The homeostatic drive for sleep is the pressure or tendency to fall asleep. Our need for sleep increases until will aslee and declines during sleep accumulation. For example, if one stays up late for several days in a row and muddles about on limited sleep, the drive for sleep increases on subsequent nights. When a teenager can “crash” after school at 5 pm and sleep through to the next morning, he surrenders to the drive for sleep. During times of extreme sleepiness one can change his usual sleep rhythm to catch up on ongoing sleep loss (sleep debt).

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Hispanic Adults and Sleep Disorders in the United States

Beverly Fernandez-Harrington
FNP, MSN, AAHIVS, ACRN

Beverly earned her Bachelor's in Chemistry from Delaware State University, her MSN from the Christiana College, and her Family Nurse Practitioner Post MSN Certificate from Wilmington University. She is ANCC certified as a Family Nurse Practitioner. She is certified as an American Academy of HIV Medicine Specialist (AAHIVS) for the American Academy of HIV Medicine. Beverly is also certified as an AIDS Certified Registered Nurse (ACRN) by the HIV/AIDS Nursing Certification Board. She worked in HIV care as a nurse and nurse practitioner at the Christiana Care HIV Community Program in Smyrna and Georgetown, Delaware for eight years. Beverly recently worked in HIV and primary care at Bright Point Health (formerly HELIV/FSII) in Bronx, New York for three and a half year. She is a member of the Nurse Practitioners of New York, Association of Nurses in AIDS Care, and the Oncology Nursing Society. Beverly can be reached via email at BeverlyAFdz@gmail.com.

Not much is known about sleep and sleep related health issues in Hispanics in the United States (US). Sleep is important in sustaining physical and psychological well being and is of critical importance to overall quality of life. Sleep disorders are linked to poor mental and physical health (Soler et al., 2013). The National Institute of Health (NIH), National Institute of Aging, and the National Sleep Foundation recommend eight hours per night to adults to ensure optimal health. Recent studies have shown a higher incidence of sleep disordered breathing (SDB) among Hispanics, and SDB is associated with an increased risk of cardiovascular disease. There is some evidence that Hispanic Americans already disproportionately affect this population (Redline et al., 2014). According to the US Census Bureau in 2014, there are 35.4 million Hispanics in the US making up the largest minority population, 17.1% of the population with 11.1% being US and 6% foreign born. The total number of Hispanic residents in the US state of Delaware is 84,637 as of the population in the state (Krogstad & Lopez, 2015). As Hispanics are the biggest and fastest growing minority in the US with high rates of obesity, diabetes, and cardiovascular disease, a better understanding of sleep, sleep physiology, and SDB is needed given an increase association of SDB and cardiovascular disease (Redline et al., 2014).

Those of Hispanic origin consist of a diverse population of self-described ancestry, heritage, lineage, nationality group, or country of birth including those from countries in Central and South America and the Caribbean (Krogstad & Lopez, 2013). Hispanic ancestry is ethnically diverse, African American, and European from Spain with all speaking the Spanish language, although different dialects depending on their country of origin (Redline et al., 2014). The 2013 statistical portrait of those of Hispanic origin in the US include 64.1% Mexican, 9.5% Puerto Rican, 3.7% Cuban, 3.7% Salvadoran, 3.3% Dominican, and 3.1% all other (Krogstad & Lopez, 2015). A 2008 survey including all 50 states and US territories showed a higher percentage of Hispanics reporting less duration of sleep and less hours of sleep per night than White Non-Hispanic and African Americans. The problem in evaluating sleep disorders in US Hispanics is in the lack of research problems, less than one-third of research within the population, the potential cultural differences in Hispanic groups that could affect the prevalence and severity of sleep problems, less than one-third of research within the degree of acculturation of the individual in the US.

There has been evidence of differences in sleep architecture among racial/ethnic groups causing cultural effects on quality of sleep. One study provided evidence of cephalometric (scientific measurement of the cranial and facial bones) differences in Hispanics and African Americans diagnosed with sleep apnea compared to Non-Hispanic Whites. The theory is that these cephalometric differences may affect the prevalence and future surgical treatment of sleep apnea in ethnic minorities (Loredo, 2013). Untreated sleep apnea is associated with diabetes, hypertension, maternal and infant outcomes, and obesity. Furthermore, there is a link between hypertension, cardiovascular disease, and poor sleep habits with deleterious health effects. There is a link with cardiovascular disease, hypertension, and diabetes to untreated SDB. SDB/ sleep apnea is common among Latinos in the US but infrequently associated with a diagnosis. There is a need for more advance research and support in the assessment and evaluation of culturally applicable diagnosis and treatment methods for optimal care for these patients (Redline et al., 2014). As nurses and advanced practice providers, it is pertinent to provide relevant education to diverse patients regarding appropriate and healthy sleep habits as a prevention of metabolic syndrome which adversely affects the Hispanic population. A better understanding of diverse ethnic groups, especially among Hispanics, is essential to properly assist with healthcare needs in evaluation of sleep and the effects of sleep disorders.

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A three year study conducted by the American Academy of Sleep Medicine of 2,230 men and women ages 54 to 93 reported that Hispanics, African Americans, and Chinese Americans were more likely to have sleep disorders including breathing problems during sleep such as sleep apnea than White Non-Hispanic Americans (Dallas, 2015). Participants in the study were evaluated for poor sleep, sleep apnea and the duration of day time somnolence and insomnia. One-third of participants had moderate to severe SDB, thirty-one percent of participants had less than six hours of sleep per night, one-fourth of participants had less than five hours of sleep per night, and 20 percent of participants had excessive day time sleepiness. The research showed that although there was an increase in prevalence of sleep apnea among Hispanics and ten study participants were diagnosed by their provider with sleep apnea. In the study, Hispanics were likely to have more breathing problems at night and have less than six hours of sleep per night (Dallas, 2015).

The Hispanic population has unique cultural challenges including inadequate and poor sleep habits with deleterious health effects. There is a link with cardiovascular disease, hypertension, and diabetes to untreated SDB. SDB/ sleep apnea is common among Latinos in the US but infrequently associated with a diagnosis. There is a need for more advance research and support in the assessment and evaluation of culturally applicable diagnosis and treatment methods for optimal care for these patients (Redline et al., 2014). As nurses and advanced practice providers, it is pertinent to provide relevant education to diverse patients regarding appropriate and healthy sleep habits as a prevention of metabolic syndrome which adversely affects the Hispanic population. A better understanding of diverse ethnic groups, especially among Hispanics, is essential to properly assist with healthcare needs in evaluation of sleep and the effects of sleep disorders.
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Margaret earned her Bachelor of Science in Nursing degree from The Catholic University of America in Washington, D.C. and a Master of Science in Nursing from Wesley College in Dover, DE. She is certified in Critical Care Nursing and has completed a certificate program in simulation from Drexel University. Margaret has extensive nursing experience in all areas of critical care and has taught as an adjunct for the department of nursing at Wesley College in the area of critical care while still practicing ICU nursing. Since 2011, she has been an Instructor of Nursing and Simulation Coordinator for Wesley College. In spring 2015 Margaret co-taught a field study course in Guatemala with undergraduate nursing students and can be reached by email at Margie.mcelligott@wesley.edu or at her office at (302) 736-2737.

Nursing is an arduous profession which demands moral, emotional, intellectual, and emotional strength. The hours are long, breaks are infrequent, and no two shifts are the same. It is a unique profession in that it requires so much of the nurse. Nurses care for the emotional, physical, and cognitive processing and manual labor. The burden of great responsibility, fear of litigation, and the memories of patients’ poignant stories. Nurses deserve to care for themselves and owe it to their patients to be in their best form.

The fields in healthcare require nursing services in many areas 24 hours a day. Acute care hospitals, clinics, occupational health, and long term care facilities are some of the settings which demand around the clock staffing. Some nurses work a typical day time schedule; however, the majority work a rotating schedule or off shift. Shift work has been deemed as work hours that are scheduled outside of daylight hours (6 am to 6 pm) (Hughes & Stone 2004). The logistics of shift work, while participating in the demands and activities of nurses’ personal lives, limits the opportunity for sleep. “Because the body’s internal clock is cued by day, the rise and fall of the dark cycle, shift work disrupts the synchronous relationship between the body’s internal clock system and the environment and has been linked to sleep disturbances” (Drake et al., 2004, p. 1454). Numerous studies, as noted by Admi et al. (2008), have validated that sleep disturbance and decreased alertness is reported in the majority of shift workers.

Sleep obtained during the day or at irregular times is of lower quality than that obtained during normal nighttime sleep. Chronically restricted sleep patterns and the subsequent sleep debt that accumulates over time may be the most pervasive in such professions as health care delivery that functions 24 hours a day, 7 days a week. (p. 251)

Extensive research has documented the associated health risks for long term shift workers, however many have improperly equated the immediate risk in nursing is impaired job performance and jeopardizing patient safety. Inadequate sleep and the negative effects on cognition and psychomotor skills of the nurse have a strong correlation with deficient nursing care. Numerous studies have documented that errors in nurses. The duration of time nurses are working without rest increases the risk of errors. Several studies have been performed that assessed the similarities in fatigue related mental and physical functioning and impairments secondary to alcohol intoxication. In these studies, participants performed tested and compared after staying awake for extended periods of time and after drinking alcohol to a certain blood alcohol level. Participants staying awake for 17 hours showed performance deficits similar to having a blood alcohol level of 0.9%, and after 24 hours awake the deficits were similar to having a blood alcohol level of 0.10% (Caruso & Hitchcock, 2010). Another variable which has been identified as an increasing risk is subsequent days of work without proper rest. Research has shown a correlation between various shifts and increased fatigue related errors. When compared to day shift, risks were 15% higher for evening shift and 28% higher for night shift (Folkard & Lombardi, 2006). Some errors which occurred were in miscommunication, inappropriate medication administration, improper technique, incorrect use of medical equipment, and failure to recognize and respond to patients’ needs. The results of these errors resulted from near misses to catastrophic injury and death. Major errors can impact nurses with legal repercussions, licensure restrictions, and emotional turmoil.

The American Nurses Association Code of Ethics for Nurses provision 5.2 is promotion of health, safety, and well-being. Fowler (2015) stated that we have a responsibility to take care of ourselves:

There is a two-fold moral thrust here. First nurses have a duty to themselves to promote and preserve their own health for their own sake. Second, nurses should “practice what they preach” and model health promotion and health maintenance for others. (p.79)

In not taking care of themselves, nurses are placing their patients at risk. To perform their jobs optimally, nurses must have proper rest and nutrition. Nurses also need exercise to meet the physical demands of the job. Adequate sleep is not a luxury; it must be made a priority for nurses in preparation for each shift.

Sleep deprivation is not an unavoidable consequence of shiftwork, nor a sign of heroism. Health care administrators need to develop strategies to ensure a well-rested nursing work force for patient care and patient safety. Overtime hours should be limited and alternating shifts should be scheduled in a forward or clock-wise rotation. There are proven ways to promote adequate rest. Educating nursing students and nurses about the associated patient safety risks with inadequate sleep patterns is paramount. Nurses should review the side effects of both prescription and over-the-counter medications for sleepiness. Research has validated that brief naps during the night shift can be restorative and promote safer nursing care. The National Sleep Foundation reported that the equivalent of two cups of coffee produces an increased alertness for a few hours. However, heavy daily use of caffeine reduces its effectiveness. Nurses should consider strategic use of caffeine when the stimulant effect is needed (Caruso & Hitchcock 2010). The use of bright light in the work environment has been shown to promote alertness. Food selection is also an important consideration for shift workers. A balance of protein with complex carbohydrates and small amounts of fat provides sustained energy. Sleep hygiene must be encouraged for the well-being of patients.

Adequate sleep is essential in maintaining effective cognitive and psychomotor skills required of a nurse while providing safe and effective care to his or her patient. Aside from an improved work performance and decreased risk of errors, nurses will enhance their personal health promotion and overall quality of life, secondary to optimal sleep. Not only do nurses owe these benefits to themselves, after selflessly care taking for others, they have an ethical responsibility for self-care to ensure the provision of best nursing practice.

References
Obstructive Sleep Apnea and Perioperative Care: The Hidden Danger

Tracy L. Martini, MSN, RN

Tracy L. Martini earned her BSN from Bloomsburg University and her MSN from Widener University. She has worked as a perioperative staff nurse and nurse manager in a variety of inpatient hospitals, outpatient surgical centers, and office based surgical practices for more than 25 years. She is currently enrolled as a student in the Post Master’s Nurse Practitioner Certificate program at Widener University and employed as a staff nurse at Chesapeake Ear, Nose, & Throat in Elkton, MD and Dover DE. Tracy can be reached by email at Tlmartini@comcast.net or (410) 398-6570.

Definition and Epidemiology
Obstructive sleep apnea (OSA) is more commonly known as sleep apnea, sleep disordered breathing, or a sleep disorder. With OSA, the airway becomes blocked when muscles relax and breathing stops and starts many times during sleep. It is now estimated that 26 percent of adults between the ages of 30 and 70 years have sleep apnea (Peppard et al., 2013). This problem can lead to poor quality of life and other serious health problems such as cardiovascular disease, diabetes, and stroke, as well as an increased risk for accidents (Park, Ramar, & Olson, 2011). It can also cause complications during diagnostic and surgical procedures when left undiagnosed and untreated. It is estimated that 90 percent of sleep apnea cases have not been diagnosed (Finkel et al., 2009). A recent study by Mutter et al. (2014) found that diagnosing sleep apnea and prescribing Continuous Positive Airway Pressure (CPAP) therapy prior to surgery can significantly reduce postoperative cardiovascular complications of cardiac arrest and shock by more than 50 percent.

Signs and Symptoms
Quality sleep is an important part of overall health, but getting the proper sleep proves difficult for many people for a variety of reasons. Some people may have sleep apnea, but are unaware of what signs to look for. The most common symptoms of OSA are excessive sleepiness (ES), lapses in breathing and snoring reported by bed partners (Kryger et al., 2011). Gasping for breath and choking have also been reported (Myers, Mckrobrada, & Simel, 2013). Some additional non-specific complaints are morning headaches, mood disorders, depression, and having to urinate during the night (Park, Ramar, & Olson, 2011). Healthy People 2020 Sleep Health Focus and The National Healthy Sleep Awareness Project encourages anyone with signs or symptoms of sleep apnea to visit www.stopthesnorge.com to pledge to “Stop the Snore” and talk to your doctor about sleep apnea.

Risk Factors
There are many risk factors associated with OSA. Some of the most common are: BMI >35 kg/m², large neck > 17 inches male and > 16 inches female, narrowed airway because of large tonsil and adenoids, or jaw size/structure and position (Dancey et al., 2003). OSA is more common in persons >50 years of age, blacks, males, and those with a family history of OSA (Kryger et al., 2011). It is also prevalent in those with other chronic health problems such as nasal/sinus congestion, heart disease, hypertension, stroke, arrhythmia, and type 2 diabetes (Park et al., 2011).

Screening and Diagnosis
Frequently OSA goes undiagnosed because many of the symptoms are non-specific or can be attributed to other health coexisting problems. Primary care physicians and advanced practice nurses need to be aware of and familiar with screening methods, diagnosis, and referrals for further studies, evaluation, and treatment. A sleep questionnaire is a helpful and cost effective screening tool. There are several available including the Epworth Sleepiness Scale, Berlin Questionnaire, and STOP-BANG tools, which vary in ease of use, sensitivity and specificity (Silva et al., 2011). Home sleep testing with portable monitor (PM) can also be a cost effective screening method and probably more reliable than questionnaires in low risk populations (Silva et al., 2011). A laboratory polysomnogram (PSG) or sleep study is the best method to confirm and stage the severity of the disease. The sleep study monitors breathing and the sleep apnea-hypo apnea index (AHI) where breathing stops for 1 minute. OSA is diagnosed and classified as mild (AHI <15), moderate (AHI 15-30) or severe (AHI >30) (Epstein et al., 2009). An office consultation with a qualified Otolaryngologist/Ear Nose and Throat specialist can help to identify any physical or mechanical issues. A fiber optic laryngoscopy is frequently performed to assist in the examination. The PSG will be reviewed to determine disease severity and discuss individualized treatment plan based upon symptoms and exam findings.

Management and Treatment Options
There are several lifestyle changes that can help to minimize OSA which include avoidance of smoking, alcohol, sedatives, and hypnotics, especially before bedtime. Changes in sleep position by elevating the head and lying on the side will keep the airway more open. Weight loss is effective in management of OSA, and BMI should target <15 kg/m². Providing education to promote behavior modification can improve symptom relief and encourages self-management. One of the most common treatments of OSA is CPAP. The positive pressure keeps the airway open and oxygenation level stable. (Gottlieb et al., 2014) found that hypertension was significantly reduced for patients undergoing CPAP. Another benefit is that it can lead to an improvement of postprandial lipid levels and may decrease cardiovascular problems (Mirrakhimov & Atl, 2013). There are also a few pharmacologic options used to treat excessive sleepiness such as armodafinil (Nuvagil) and modafinil (Provigil), stimulant-like drugs, that may be used in combination with the mechanical therapy to reduce excessive day time sleepiness. Dental devices can also assist in holding the jaw forward in an effort to improve airflow. Topical nasal steroids and oxygen therapy are other non-invasive treatments which may be effective.

Surgery
There are several surgical options available to treat OSA depending upon what is contributing to the obstruction and if CPAP or other oral devices are not tolerated. Many can be performed in the office or outpatient setting. Nasal surgery is commonly recommended if the nasal septum is deviated resulting in a blockage in the nose.

Obstructive Sleep Apnea continued on page 9

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Postoperative monitoring and tidal carbon dioxide monitoring is recommended (Gross et al., 2006). Respiratory end tidal carbon dioxide monitoring is easy to use and has been validated in surgical adults. (ASA) guidelines provide an anesthetic standard for the perioperative phase prior to undergoing any type of procedure (Saager, Safer-Zadeh, & Avidan, 2009). However, additional studies concerning these surgical techniques are needed to improve the quality of evidence, assess additional outcome measures, determine which populations are most likely to benefit from a particular procedure or surgery, and optimize perioperative care (Aura et al., 2010).

Perioperative Care

OSA is a chronic disease that is prevalent in the population and widely undiagnosed. Management of the patient with OSA during the perioperative phase can be challenging. The use of sedation, anesthetics, and pain management drugs related to diagnostic and surgical procedures relax the muscles and can result in further respiratory depression and airway compromise. All patients should be screened with a questionnaire during the preoperative phase prior to undergoing any type of anesthesia to identify undiagnosed OSA and at risk patients (Chung et al., 2008). The STOP questionnaire consist of four yes/no questions about Snoring, Tiredness, Observed apnea, and high blood Pressure (STOP). This tool is easy to use and has been validated in surgical patients. It can be combined with Body mass index, Age, Neck size and Gender (BANG). Chung et al. (2008) found the combination STOP-BANG resulted in a sensitive and significant predictive value in detecting moderate to severe OSA. A thorough preoperative asthma evaluation and history, physical examination, and patient interview by the anesthesia staff is necessary to evaluate risk, evaluate, and determine the appropriateness of anesthetic type (Gross et al., 2006). Respiratory end tidal carbon dioxide monitoring is recommended during moderate or deep sedation (Gross et al., 2006).

Patients with OSA are at greater risk for complications due to possible respiratory depression after surgery too. Postoperative monitoring and tidal carbon dioxide monitoring is recommended to detect moderate to severe OSA. A thorough preoperative asthma evaluation and history, physical exam, and patient interview by the anesthesia staff is necessary to evaluate risk, evaluate, and determine the appropriateness of anesthetic type (Gross et al., 2006).

Summary and Future Implications

OSA is a chronic disease that is prevalent in the population at large. Many people are unaware of the symptoms and the detrimental associated health conditions. There are a variety of treatment options available from behavior changes, non-invasive therapy such as CPAP, to surgical interventions. Patients who have OSA and those who are undiagnosed have an increased risk for complications due to anesthesia, analgesia, and surgery. The American Society of Anesthesiologists (ASA) guidelines provide an anesthetic standard of care to reduce risk. All patients undergoing any procedures or surgery should be evaluated preoperatively with a screening tool such as the STOP-Bang or home sleep study to identify risk. Patients at high risk should be treated as having OSA. Further education of staff members, compliance with OSA perioperative treatment parameters, and further research at an essential to ensure patients with OSA are managed safely during their procedure.

References


References
concerned about a grumpy, tired teenager at home. Inadequate sleep is a significant issue worth discussing with a health care provider if you are experiencing school tardiness, absences, unevaluated snoring or significant mental health issues. If other concerns such as extreme sleepiness, academic underachievement, weight gain, impaired driving ability, impulsive behavior, and poor judgment. It is also associated with an increase in risk of high blood pressure, heart disease and depression (Brody, 2014).

So what can health care providers and parents do to improve the sleep quantity of our teens? Initially, set bedtimes earlier and maintain similar schedules on weekdays and weekends. Since during the summer bedtime schedules tend to be later, setting an earlier bedtime should begin several weeks before school resumes in the fall. Ideally, aim for 9 hours of sleep per night. If a teen is not sleeping until midnight to complete homework, limiting or restructuring after school activities, decreasing social media connectivity, and screen time (for computers, gaming or television) is warranted. If applicable, eliminating afternoon naps is also advised. Improve sleep hygiene nightly by dimming lights, and eliminating electronic use an hour before bedtime. Bedtime pressure, heart disease and depression (Brody, 2014).

The consequences of inadequate sleep include school tardiness, school absences, decreased cognitive function/mental alertness, academic underachievement, weight gain, impaired driving ability, impulsive behavior, and poor judgment. In addition, there is evidence that later school start times compound the problem of teens' desire to sleep in. Interestingly, in the school districts that have initiated later start times for high schools, test scores and grade point averages have improved (Brody, 2014). Proposing later school start times in all school districts would pay off in the long run. Reducing caffeine consumption after midday may also be sleep-inducing. Still, melatonin can be used as a supplement for delayed sleep or mild insomnia, but professional guidance is necessary to manage teens with significant sleep time shifts. Adding bright morning sunlight or supplemental artificial light will help with morning waking and reduce sleepiness. Schedule changes on weekdays and weekends. Since during the summer bedtime schedules tend to be later, setting an earlier bedtime should begin several weeks before school resumes in the fall. Ideally, aim for 9 hours of sleep per night. If a teen is not sleeping until midnight to complete homework, limiting or restructuring after school activities, decreasing social media connectivity, and screen time (for computers, gaming or television) is warranted. If applicable, eliminating afternoon naps is also advised. Improve sleep hygiene nightly by dimming lights, and eliminating electronic use an hour before bedtime. If sneaking electronic use while in bed is a problem, parental removal of tablets, smartphones, gaming devices and televisions from the bedroom should help. A traditional alarm clock can be used for morning wake up calls. In addition, restructing bed use for sleep only may help promote relaxation. Since there should be a direct association with the bed and sleep, homework should be completed at a desk or table. Other measures that promote sleep include daily exercise (morning or afternoon, not nighttime), cool showers and a cool bedroom environment. Light therapy for morning waking and sleepiness is discussed further. The National Sleep Foundation. (2015). How much sleep do we really need? Retrieved from http://www.sleepfoundation.org

Sleep in Teenagers continued from page 5
cortical synapses in the brain decrease after ten years of age. Documented decreases in slow wave sleep occur, while an increase in lighter stage 2 sleep is noted. (Crowley et al., 2014). The full effect of these changes is still unknown; however, it is proposed that both social and physiologic factors are pressing teens to function on less sleep. The sleep debt that accumulates after nondelayed sleep deprivation has profound effects on the biology of the brain.

The consequences of inadequate sleep include school tardiness, school absences, decreased cognitive function/mental alertness, academic underachievement, weight gain, impaired driving ability, impulsive behavior, and poor judgment. In addition, there is evidence that later school start times compound the problem of teens' desire to sleep in. Interestingly, in the school districts that have initiated later start times for high schools, test scores and grade point averages have improved (Brody, 2014). Proposing later school start times in all school districts would pay off in the long run. Reducing caffeine consumption after midday may also be sleep-inducing. Still, melatonin can be used as a supplement for delayed sleep or mild insomnia, but professional guidance is necessary to manage teens with significant sleep time shifts. Adding bright morning sunlight or supplemental artificial light will help with morning waking and reduce sleepiness. School start times compound the problem of teens desire to sleep in. Interestingly, in the school districts that have initiated later start times for high schools, test scores and grade point averages have improved (Brody, 2014). Proposing later school start times in all school districts would pay off academically in the long run. Consider consulting a pediatric sleep medicine team if improving sleep hygiene does not help. If other concerns such as extreme sleepiness, school tardiness, absences, unexplained snoring or significant mental health issues are interfering with a teenagers sleep, consulting a pediatric sleep medicine team for an evaluation is appropriate. Interested. If applicable, eliminating afternoon naps is also advised. Improve sleep hygiene nightly by dimming lights, and eliminating electronic use an hour before bedtime. If sneaking electronic use while in bed is a problem, parental removal of tablets, smartphones, gaming devices and televisions from the bedroom should help. A traditional alarm clock can be used for morning wake up calls. In addition, restricting bed use for sleep only may help promote relaxation. Since there should be a direct association with the bed and sleep, homework should be completed at a desk or table. Other measures that promote sleep include daily exercise (morning or afternoon, not nighttime), cool showers and a cool bedroom environment. Light therapy for morning waking and sleepiness is discussed further. The National Sleep Foundation. (2015). How much sleep do we really need? Retrieved from http://www.sleepfoundation.org
SB 57 and SB 101 Bill Signing at the University of Delaware STAR campus on September 1st.

During the last hours of the 148th General Assembly legislative session, Senate Bill 57 w/SA 1 and SS 1 for SB 101 passed the House to bring the Delaware Nurse Practice Act in line with the APRN Consensus Model. The Consensus Model provides uniformity in the regulation of licensure, accreditation, certification, and education of APRN roles in states that adopt it. The new laws changes the title from Advance Practice Nurse to Advanced Practice Registered Nurse. It also updates the renewal and reinstatement requirements for Advanced Practice Nursing license. It creates a new board of Nursing Advanced Practice Registered Nurse (APRN) Committee to include four APRN population foci to be consistent with the Consensus Model. Also included is the provision for full practice authority for APRNs that extends to ordering and prescribing non-pharmacological interventions such as medical devices, durable equipment, diagnostic and supportive services and to sign death certificates. The new laws changes the title from Advance Practice Nurse to Advanced Practice Registered Nurse. It also updates the renewal and reinstatement requirements for Advanced Practice Nursing license. It creates a new board of Nursing Advanced Practice Registered Nurse (APRN) Committee to include four APRN population foci to be consistent with the Consensus Model. Also included is the provision for full practice authority for APRNs that extends to ordering and prescribing non-pharmacological interventions such as medical devices, durable equipment, diagnostic and supportive services and to sign death certificates. In addition, APRNs have independent practice eliminating the need for a collaborative agreement after meeting the licensing requirements. New APRNs must have a minimum of two years and 4,000 hours in a collaborative agreement with a hospital, doctor or medical practice. However, employer can still require collaborative agreement as condition of employment. Thank you to Senator Bethany Hall-Long and all those who worked on and supported these bills.

The above protocol is a broad-spectrum approach that can be utilized to effectively provide mental health clients with tools they can use to improve their sleep and ultimately improve their mental health. As nurses, we have a responsibility to work holistically with our clients to improve their overall health status. Sleep is not a luxury; it is an essential element for maintaining physical and mental health. Perhaps sleep should be the newest vital sign...certainly something to think about!

References
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