

## Inside the medicine cabinet...: Do you know your staff's common medication usage and how it can impact their practice?

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Letvak, S., Jones, E. & Hodge, M.A. (2009). Inside the Medicine Cabinet...Do you know your staff's common medication usage and how it can impact their practice? *Nursing Management*. March 2009

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### Article:

A growing number of Americans use prescription and nonprescription medications on a regular basis. An aging population, rapid development and release of new medications, and changes in health practice are all responsible for increased usage.<sup>1</sup> Indeed, in any given week, 81% of adults in the United States take at least one medication (prescription or over the counter [OTC]) and at least 50% take a prescription medication.<sup>2</sup> Prevalence of use increases with age and by gender, with older women having the greatest medication use.<sup>2,3</sup> Most Americans are also likely to take more than one medication (see *Table 1*).

While medications are being used by most Americans, there's little information on the specific medications being used by RNs. Nurses working in hospital settings are faced with high job stress, staffing shortages, and increasing patient acuity and care needs. Many common medications are known to have adverse reactions that may interfere with work performance.

**Table 1: Medication use among adults**

Age	Men/Any Use	Women/Any Use	Men 5+ medications	Women 5+ medications
18-44	65%	82%	7%	12%
45-64	81%	92%	32%	42%
65+	92%	95%	59%	63%

The purpose of this article is to describe the medication usage of RNs employed at the bedside in three hospitals in the southeastern United States. The major adverse reactions of the most frequently used medications will be described and the possible implications of RN medication usage for nurse man-agers will be presented.

We used a cross-sectional survey design and received human subject approval. Participants' names weren't asked and data between hospitals and units were aggregated to ensure further confidentiality of responses.

The survey collected information on demographics (age, gender, ethnicity/race, marital status, total number of years worked as an RN, and height and weight, which were converted to body mass index [BMI]), workplace characteristics (employed full time or part time/per diem), type of unit (by medical specialty), average number of hours worked per day, average number of patients cared for, perceived quality of care provided [measured on a five-point Likert Scale] and inability to meet patient-care needs (recorded as a percentage of time), overall job satisfaction (measured on a four-point Likert scale), job stress (Health Professions Stress Inventory), overall health (global rating scale from excellent to poor), and an open-ended question asking what medications (prescription, OTC, or herbal) were used on a regular basis.

## Study findings

The majority of respondents were female (91.6%), Caucasian (81.4%), and married (68.8%). The mean age was 40.15 years (range 22–71, standard deviation [SD] = 10.9) and they worked an average of 12.29 years in nursing (range 4 months to 50 years, SD = 10.2). The majority of the respondents worked full time (87%), averaging 12.41 hours/day on a 12-hour day (57.9%) or 12-hour night (27.6%) shift. The mean BMI was 26.7 and 58.2% were overweight. The mean number of patients cared for was 4.5 (range 1–12, SD = 1.95) on a medical-surgical unit (47.4%), ICU (16%), maternity or pediatrics unit (6%), the OR or postanesthesia care unit (2.8%) or psychiatric units (2.8%).

A survey item asked what percentage of the time nurses felt they were unable to fully meet their patients' needs. Respondents stated they were unable to meet the needs of their patients on an average of 12.7% of the time (range 0%–85%). Most respondents were satisfied with their jobs, with 29% highly satisfied, 64% generally satisfied, and only 7% dissatisfied. On a scale of 0 to 120, the mean job stress score was 47.9 (range 16–85, SD = 14.9).

Over 60% of the participants reported using a medication regularly. Specifically, 144 nurses (45%) used a prescription drug on a regular basis and 100 RNs (31%) used an OTC medication regularly. The most frequently used prescription medications were mood enhancers/sleep agents (17%), antihypertensives (14%), gastrointestinal medications (11%), birth control pills (9%), and asthma/respiratory medications (6%). Interestingly, only eight nurses (less than 3%) reported using an opioid medication for pain on a regular basis. No illegal sub-stances were reported. The most frequently used OTC medications were herbal medications/vitamin supplements (19%) and pain relievers/anti-inflammatory agents (9%). Variables that correlated to medication use included age (0.000), years employed in nursing (0.001), ability to provide quality care (0.024), health (0.001), job stress score (0.004), and BMI (0.005).

## Points to ponder

While the RNs in this study reported less medication use than the national norm, the nurses in this study were younger than the average age of an RN, which is 46.8 years—and medication usage increases with age.<sup>2–4</sup> The most commonly used medications of nurses in this study are also different than the national norm. The most commonly used prescription medications by nurses in this study were mood enhancers/sleep agents, antihypertensive agents, and gastrointestinal medications. The most commonly prescribed prescription drugs in the United States were cholesterol-lowering drugs followed by thyroid supplements and then anti-hypertensive medications.<sup>2</sup>

Despite reports that RNs abuse prescription drugs (especially opioids) at higher rates than the public, very few RNs reported opioid drug use on this anonymous survey.<sup>5,6</sup> However, this may be because the survey question asked about what medications the respondent took on a regular basis and opioid-abusing nurses don't consider these agents as a medication "regularly taken."

Nurses in this study had similar OTC use to the national norm, with the most frequent nonprescription medication being vitamins and herbal agents followed by pain relievers and anti-inflammatory agents. In the national sample of adults, the most frequent nonprescription medications used by adults are vitamins (40%), aspirin (17%), and ibuprofen (16%).<sup>2</sup> It's not surprising that medication use is related to nurses in this study being older, having poorer health, being unable to provide the care they would like to, and having high job stress. The relationship of medication use to higher body weight is also not surprising, as research demonstrates that obesity is linked to higher rates of physical and mental health issues and health expenditures.<sup>7</sup>

While the nurses in this study report overall usage similar to other U.S. adults, it's important for nurse managers and nurses themselves to be aware of the possible adverse reactions of the medications being used and work implications of the health problems requiring these medications. While all of the medications being used by nurses have adverse reactions, this manuscript will focus on the implications of mood enhancers, sleep agents, antihypertensive medications, and OTC pain relievers in nurses who work at the bedside.

## **Mood enhancers**

Mood enhancers are often pre-scribed for diagnoses of depression or anxiety. The specific medications stated by the nurses in this study reflect these diagnoses. Approximately 20.9 million Americans, or 9.5% of the U.S. population, suffers from a mood disorder, with depression affecting 6.7% of the population in any given year and 18.1% of the population having an anxiety disorder.<sup>8</sup> Anxiety disorders frequently co-occur with depressive disorders. Important to the profession of nursing, depression is more prevalent in women than in men.

Depressed workers are more likely to make errors and are accident prone due to problems with concentration and focus associated with depression.<sup>9–11</sup> Thus, it's important that nurses who are depressed or suffer from anxiety receive early diagnosis and appropriate treatment.

Nurse managers should be aware of possible depression and anxiety disorders in their nursing staff. Specific signs of which to be aware include a nurse who's persistently sad or anxious, seems to have lost interest in activities or conversations, has increased restlessness, is irritable or prone to crying, expresses increased pessimism and helplessness, has decreased energy, has decreased concentration and decision-making skills, and experiences an increase in errors and omissions. Managers should talk to the nurse in confidence, emphasizing concern for well-being and suggesting she speak with her medical provider or employee assistance department for evaluation.

There are two major categories of antidepressant medications: the newer medications are the selective serotonin reuptake inhibitors (SSRIs) while the tricyclics and monoamine oxidase inhibitors have been in use much longer. The SSRIs have been found to have fewer adverse reactions than tricyclics. Most antidepressant medications take at least 4 weeks for the individual to notice improvement, and some individuals may need 8 weeks before an improvement in symptoms is noticeable. Nurse managers must encourage nurses who suffer from depression to remain on therapy and to inform their healthcare provider if adverse reactions occur or the desired treatment hasn't occurred. While most adverse reactions of antipsychotic medications are mild and decrease after the first few weeks of treatment, the most common adverse reactions include rapid heartbeat, dizziness when changing position, and a dry mouth. Most importantly for nurse managers, however, is that nurses who are depressed receive proper evaluation and treatment. A supportive work environment should also be maintained to assist the nurse in achieving optimal mental health. Suggestions include reduction in work hours from 12-hour shifts to 8-hour shifts and reassigned job duties (i.e., mentoring new staff, assisting with unit quality assurance projects, or "light" duty assignments, such as treatment or admission/ discharge nurse).

## **Sleep agents**

Sleep agents are used for those requiring assistance getting quality sleep. A recent study conducted by the National Sleep Foundation found that 64% of women in the United States experience insomnia at least a few nights per week and 46% experience insomnia every or almost every night.<sup>12</sup> Sleep problems increase with age, with 33% of those age 18 to 24 having sleep problems compared to 48% of women over the age of 55. Additionally, of those who reported insomnia at least a few nights per week, 16% reported missing at least 1 day/work in the past month due to the need for sleep. The survey respondents also reported that sleep agents are commonly used; 15% of adults with occasional insomnia reported using a prescription sleep aid, an additional 12% used an OTC sleep agent, and 5% reported using alcohol to help them sleep.

Nurses increasingly work long hours (greater than 12 hours/day) and are often shift workers. It's not surprising that sleep problems are common in staff nurses. There's increasing evidence that long shifts and impaired sleep impacts performance and possibly patient safety.<sup>13</sup> Tired nurses may put their patients as well as their own safety at risk. A recent study of hospital nurses found that 27% of nurses reported a drowsy driving episode within a 4-week period.<sup>14</sup> Clearly, nurse managers have an obligation to ensure that staff nurses are working reasonable hours. Shifts shouldn't exceed 12 hours in length, days of rest should be scheduled between 12-hour shifts, and rotating of shifts should be minimized. Nurse managers must be aware of excessive tiredness and sleepiness of their nursing staff. Staff education programs could be offered to improve sleep hygiene and educate nurses on the importance of quality sleep.

OTC and prescription sleep medications don't cure insomnia and only offer a short-term fix. Concerns of sleep medication use include development of drug tolerance and dependence, rebound insomnia, and daytime sleepiness. Thus, nurse managers should encourage nursing staff to seek nonmedication therapy to improve their sleep. Nonpharmacologic therapies include maintaining a regular sleep-wake cycle as much as possible; using the bed-room only for sleep; limiting caffeine, alcohol and nicotine; eating a proper diet and avoiding late heavy meals before bedtime; regular exercise; avoidance of napping; not keeping a clock too close to the bed to avoid "clock watching"; and exposure to bright light or sunlight immediately after waking.<sup>15</sup>

### **Antihypertensives**

As the nursing workforce ages, there will be more nurses working with their own diagnosis of hypertension. The American Heart Association reports that almost one in three U.S. adults has hypertension.<sup>16</sup> There are many different types of antihypertensive medications, including diuretics, beta-blockers, vasodilators, angiotensin-converting enzyme (ACE) inhibitors, calcium channel blockers, and combination products. While adverse reactions vary by type of medication, the more common adverse reactions include orthostatic hypertension and light headedness, dry cough (ACE inhibitors), fatigue (beta-blockers), edema (calcium channel blockers), and frequent urination (diuretic therapy).

Nurse managers must encourage nurses with hypertension to take their medications as prescribed. Nurses who are fearful of frequent urination and the inability to take frequent bathroom breaks (especially nurses employed in the OR and procedure areas) may not take their medications prior to going to work. Frequent breaks with time to elevate legs and rest must be provided. Lighter work assignments may also be needed for nurses who are on new therapy who may be experiencing more significant adverse reactions, such as light headedness and palpitations.

### **OTC pain relievers**

Musculoskeletal pain is very common in staff nurses. Indeed, the most common health risk for nurses is musculoskeletal disorders, with prevalence rates as high as 60%.<sup>17</sup> Of concern, 72.3% of workers with musculoskeletal and back pain report activity limitations and 79.6% report significant loss of productivity.<sup>18</sup> It's not surprising that a large number of staff nurses routinely use OTC pain relievers to relieve discomfort at work.

First, nurse managers must ensure safe work environments for the prevention of musculoskeletal injuries. Lifting must be minimized. Additionally, while occasional use of OTC pain relievers is unlikely to have adverse reactions, nurse managers should educate nurses on the possible adverse reactions of long-term use. Acetaminophen can cause liver damage if taken in very high doses. Nonsteroidal anti-inflammatory agents (NSAIDs) can cause gastrointestinal problems with long-term use. NSAIDs may also increase BP in those with hypertension or participate congestive heart failure in those at risk.

### **Be aware, stay flexible**

While the nurses in this study reported less medication use than the U.S. adult population, the most frequently used medications (especially antihypertensive medications and mood enhancers/sleep agents) have adverse reactions that may impact nurse and patient safety. As the workforce ages, and job stress increases, attention must be made to the medications being used by RNs, and to whatever extent possible, nurse managers must ensure that work environments are conducive for maintaining optimal physical and mental health for those RNs requiring medications.

Employee unions have the ability to influence work environments that presumptively protect workers and mandate protections from hazards such as extended work hours. While healthcare workers currently have low union membership rates (9.6% among healthcare service workers and 12.7% among professionals), union membership is likely to increase as organized labor targets an increasingly disgruntled workforce.<sup>19</sup>

Appreciating that healthcare privacy is fundamental, it would benefit the agency and the RN employee when the nurse manager is aware that an employee is taking prescribed medications that may interfere with certain work related functions, and in response, adjustments can be accommodated.

Nurse managers should work with their human resource (HR) departments in assisting with optimal employee health. While HR has often been viewed as a passive, service-oriented department concerned only with managing paperwork and compliance issues, HR is increasingly taking greater roles in labor relations, including absenteeism, and health and safety issues. For nurses whose health may be impacting job performance, or who anticipate long-term health problems, HR can protect nurse managers from any possible legal issues while also assisting the staff nurse with career options and eligibility for special programs and benefits.

Importantly, nurses themselves must take responsibility for their health and safety while at work. Nurses who use medications need to be aware of adverse reactions and how to best time dosages. Nurses must balance their own privacy concerns with the possible obligation to disclose health problems so they can advocate for their job needs. Finally, further research is warranted on how common medications being used by RNs may impact their health and safety as well as the quality of care provided.

## REFERENCES

1. Crockett AB. Use of prescription drugs: rising or declining. *Nurs Clin North Am.* 2005;40(1):33-49.
2. Slone Epidemiology Center. *Center Patterns of Medication Use in the United States 2005 : A report from the Slone Survey.* Boston, MA: Boston University; 2005.
3. Centers for Disease Control and Prevention. National Center for Health Statistics. National health and nutrition examination survey. <http://www.cdc.gov/nchs/has.htm>. 2006.
4. Health Resources and Services Administration (HRSA) US Department of Health and Human Services. Projected supply, demand, and shortages of registered nurses: 2000-2020. <http://bhpr.hrsa.gov/healthworkforce/reports/rnproject/report.htm>. 2004.
5. Dunn D. Home study program: substance abuse among nurses—defining the issue. *AORN J.* 2005;82(4):573-575, 577-582, 585-596.
6. Shaw MF, McGovern MP, Angres DH, Runwal P. Physicians and nurses with substance abuse use disorders. *J Adv Nurs.* 2004;47(5):561-571.
7. Bertakis KD, Azari R. Obesity and the use of health care services. *Obes Res.* 2005;13:372-379.
8. Kessler RC, Chiu WT, Demler O, Walters EE. Prevalence, severity, and comorbidity of twelve-month DSM-IV disorders in the National Comorbidity Survey Replication (NCS-R). *Arch Gen Psychiatry.* 2005;62(6):617-276.
9. Goldberg RJ, Steury S. Depression in the workplace: costs and barriers to treatment. *Psychiatr Serv.* 2001;52(12): 1639-1643.
10. Jacob IG. Depression's impact on safety. *Occup Health Saf.* 2006;75(10):32-40.
11. Wang P, Berglund P, Mckenas D, Pronk N, Simon G, Kessler R. Effects of major depression on moment-in-time work performance. *Am J Psychiatry.* 2004;161(10):1885-1891.
12. National Sleep Foundation. NSF sleep in America poll. <https://www.sleepfoundation.org>, 2007.
13. Lockley SW, Barger LK, Ayas NT, Rotschild JM, Czeisler CA, Landrigan CP. Effects of health care provider work hours and sleep deprivation on safety and performance. *Jt Comm J Qual Patient Saf.* 2007;33(11)(suppl):7-18.
14. Scott LD, Hwang W-T, Rogers AE, Nysse T, Dean GE., Dinges DF. *The Relationship between Nurse Work Schedules, Sleep Duration, and Drowsy Driving.* 2007; 30(12):1801-1807.
15. Morin AK, Jarvis CI, Lynch AM. Therapeutic options for sleep-maintenance and sleep-onset insomnia. *Pharmacotherapy.* 2007;27(1):89-1 10.
16. American Heart Association. High blood pressure statistics. <http://www.americanheart.org>. 2007.
17. Lipscomb J, Trinkoff A, Brady B, Geiger-Brown J. Health care system changes and reported musculoskeletal disorders among registered nurses. *Am J Public Health.* 2004;94(8):1431-1435.
18. Ricci JA, Stewart WF, Chee E, Leotta C, Foley K, Hochberg M. Back pain exacerbations and lost productive time costs in United States Workers. 2006;31(26):3052- 3060.

19. Evans M. Uniting to conquer: SEIU joins with other unions to target healthcare workers as organizing intensifies. *Mod Healthc.* 2006;36(33):14-15.

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