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The Tightrope Walk
Pain Management and Opioid Stewardship

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Pain and pain management are a major focus for an orthopedic nurse. However, reliance upon opioid monotherapy creates adverse effects for patients and has contributed to the opioid epidemic across the United States. There have been strategies developed locally and nationally to address the epidemic. Nurses, too, have an ethical and moral obligation to balance the management of pain therapies to alleviate the suffering of their patients, all while being good stewards of opioid medications. Nurses must also take the time to properly educate their patients on good stewardship techniques including proper use and disposal of their opioid medications.

Introduction

For centuries, opioids have been utilized to treat pain with varying degrees of effectiveness. According to the International Narcotics Control Board (2015), opioid consumption has increased by a factor of 19 between 1980 and 2015. In 2017, the U.S. Department of Health and Human Services (HHS) declared opioid abuse a national public health emergency (HHS, 2017). Historically, opioids have been the medication of choice to treat orthopaedic pain. Orthopaedic nurses have a particular interest in addressing the opioid crisis because pain is the primary symptom that drives patients to seek orthopaedic treatment.

In 1995, the American Pain Society and the American Society of Anesthesiologists introduced "Pain as the 5th Vital Sign" to address the perceived undertreatment of pain. Shortly after, The Joint Commission implemented new standards for assessing and reassessing pain. The heightened awareness of pain assessment and treatment led to a fourfold expansion in opioid prescriptions between 1999 and 2010 (Devin et al., 2014). Orthopaedic nurses have both ethical and moral obligations to address the pain and suffering of our patients while mitigating each patient's risk for developing opioid dependence. When nurses are prepared to address pain from a knowledge-based perspective, they are able to influence the comprehensive care plan to increase patient safety surrounding opioid consumption (Stratton, Palombi, Blue, & Schneiderhan, 2018). Nurses must increase their knowledge base to prepare themselves to best advocate for and educate their patients.

Opioid Epidemic

Background

Opium is the oldest documented painkiller. Archeological sites have unearthed evidence of opium seeds dating as early as 3,400 BC. References to opium are found across the millennia. In the 16th century, laudanum, an opium tincture, became widely available for the treatment of pain and was the treatment of choice for many ailments (Duarte, 2005). In the early 20th century, laws regulating opioids began to appear to govern the manufacturing and distribution of opiates.

Because of their effect on pain, manufactured, standardized, and regulated opioid prescriptions began to gain popularity. Momentum for opioid use as a primary intervention for pain increased, reaching unprecedented acceptance in the 1990s. Physicians began to rely heavily upon opioid monotherapy as a first-line intervention for trauma and surgical pain. Extended release opioids were combined with shorter acting opioids to treat those suffering from chronic pain. And, with the advent of synthetic opioids, transdermal patches were introduced to the regimen.

Opioids are not without limitations, however. The side effects are numerous and can range from minor to life-threatening. As physical tolerance to opioids develops, dose escalation is required, increasing the risk of physical dependence and withdrawal syndrome when treatment has ended. For nurses, the risk of opioid abuse can be significant, not only because of the highly addictive properties but also because nurses are frequently in settings where direct access is a part of their daily work. This can increase the risk for misuse, abuse, and diversion (Nalamachu & Shah, 2018).

Current State

Prescription practices have been recognized as a causal relationship for the opioid crisis (Edroso, 2018). Dozens of bills to address contributing factors are before committees in both the United States House and Senate. In

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March 2016, the Centers for Disease Control and Prevention (CDC) issued guidelines for prescription practices treating chronic pain. Some insurance providers are beginning to question coverage for any opioid prescriptions that are outside the published guidelines.

According to the CDC (2017), opioid overdose leads to more than 115 deaths daily. In addition, $78.5 billion are spent annually on opioid-related costs: medical treatment, addiction services, criminal justice, and lost productivity. Opioids are misused by 21%–29% of patients who are given prescriptions for chronic pain. Eight percent to 12% of patients will go on to develop an opioid use disorder, and an estimated 4%–6% of those patients make the transition to heroin. In fact, an estimated 80% of heroin users first transitioned to heroin after misusing prescription opioids (CDC, 2017). It is important for orthopaedic nurses to be aware of these statistics as the epidemic has impacted all regions across the United States.

Public Health Strategies

The HHS has identified five priorities to address the opioid crisis (HHS, 2018b):

- Public health surveillance
- Improving access to treatment and recovery
- Promoting use of overdose reversing drugs
- Providing support for research on pain and addiction
- Advancing better practices for pain management

Public health surveillance will contribute to the body of knowledge and increase understanding surrounding the extent of the epidemic. Knowledge of the problem is not enough, though. Patients will need access to treatment to begin the recovery process. Currently, the United States is grossly underserved for inpatient recovery treatment services. The Substance Abuse and Mental Health Services Administration (2013) reports that as many as 90% of people who most need rehabilitation services do not receive it. Government support will be vital to increase access. Increasing the promotion and use of opioid reversal agents, such as naloxone, can support efforts to decrease the mortality related to the epidemic. Finally, efforts will be placed in advancing our management and treatment of pain to include multiple modalities. As many orthopaedic patients rely upon opioid analgesia, the orthopaedic nurse can benefit from being aware of these strategies to better recommend options and resources to his or her patients.

The National Institutes of Health (NIH) is working to improve prevention strategies for opioid misuse, treat addiction, and manage pain without the use of opioids. Working with pharmaceutical industry as well as academic research centers, the goal is to develop innovative ways to treat and manage pain. Orthopaedic nurses staying abreast of the latest evidence-based practice in pain management alternatives will be an asset to this cause. Other recent initiatives include the launch of the Helping to End Addiction Long-Term (HEAL) Initiative. This initiative was revealed by the NIH Director in April 2018 to assist in the efforts of addressing the opioid epidemic. The CDC is also supporting efforts by providing support to states and communities for public education, information, and implementation of opioid overdose surveillance programs.

Multimodal Therapies for Pain

Healthcare providers can be good stewards of opioid usage by advocating for alternative methods to treat pain. Despite recent advances in surgical treatment options, postoperative pain management tends to be suboptimal (Lamplot, Wagner, & Manning, 2014). Historically, most postoperative pain management was centered in opioid monotherapy. In addition to the addictive nature of opioid medications, side effects of these medications are frequently unpleasant and may include nausea, vomiting, pruritus, and sedation, leading to delayed recovery (Wang, Cai, & Yan, 2015). Furthermore, studies have shown that unmanaged postoperative pain delays recovery, is tied to longer hospital stays, and negatively impacts patient satisfaction scores (Jo, Shin, & Huh, 2014). To complicate matters further, opioids may also sometimes trigger a paradoxical response, increasing the patient's sensitivity to painful stimuli (Kim, Ha, & Oh, 2016). As opioid dosages increase, so too do the adverse effects. With chronic use, adverse effects can manifest in diverse ways. For example, patients prescribed high-dose opioid medication for chronic pain were nearly three times as likely to be diagnosed with depression than patients taking a low-dose opioid (Simmonds, Finley, Vale, Pugh, & Turner, 2015).

To combat this, multimodal pain management strategies have become increasingly prevalent. Anesthesiologists are incorporating local and regional anesthesia to reduce the need for general anesthesia and postoperative opioid consumption. In addition, intraoperative options may include surgical site injections containing a combination of local anesthetic, nonsteroidal anti-inflammatory drugs (NSAIDs), epinephrine, and corticosteroids (Teng et al., 2014).

Postoperative multimodal management consists of partnering opioid medications with alternative drug therapies such as NSAIDs, COX-II inhibitor, neurotransmitter inhibitors, acetaminophen, and muscle relaxers. Nonpharmacological methods also play an important role. Nurses are encouraged to utilize cryotherapy, mobilization, therapeutic touch, and relaxation techniques as important nursing interventions to address pain. Studies on multimodal pain management have frequently shown improved pain control while minimizing the use of opioid medications (Kang et al., 2013; Milani et al., 2015).

Opioid Stewardship Strategies

Pain Steering Committees

Healthcare systems are implementing opioid stewardship programs because of the impact of the opioid crisis on patient care and medication safety. Utilizing an interprofessional committee under the coordination of a medical director brings the perspective of the entire care team, which is imperative when addressing the comprehensive care plan. Medicine, anesthesia, nursing, rehabilitation services, surgical services, inpatient pain management consultation team, palliative medicine, and pharmacy are

all important stakeholders for an effective pain steering committee. The pain steering committee can drive medication safety initiatives, devise policies and procedures for dose monitoring, and guide care practices surrounding high-risk transitions such as admission and discharge medication reconciliation (Ghafoor, Phelps, & Pastor, 2013). Orthopaedic nurses can lend their expertise in acute and chronic pain management by volunteering for hospital-based committees such as these.

State Prescription Drug Monitoring

All 50 states have prescription drug monitoring programs (PDMPs) that contain information on controlled substances. Prescribers are able to verify patients' prescription history in the PDMP database at regular intervals to prevent therapeutic duplication. The PDMPs have been associated with decreased opioid prescriptions and overdose deaths in some states (Fiellin & Fiellin, 2018). However, there is much to be done in this arena as state databases are not standardized. Variations exist for provider access to databases, inclusion criteria for controlled substances, and the level of enrollment. Many states have legislation in place, mandating enrollment in the PDMP and have requirements that limit the supply of narcotics in the immediate postoperative period. For example, the state of Georgia has strict PDMP participation requirements, with prescription parameters that must be met throughout the course of treatment (Georgia Drugs and Narcotics Agency, n.d.). An important part of any stewardship program, PDMPs allow providers to promote the appropriate use of medications, improve patient outcomes, and reduce adverse events. Orthopaedic nurses in the clinical setting as well as the acute care settings should be aware of parameters and legislation affecting their state. Nurses can partner with the providers and surgeons to ensure that their patient's pain needs are being met through alternative methods such as multimodal pain management therapy.

Considerations for Orthopaedic Nurses

The American Nurses Association (ANA) has recognized that nurses are positioned to play a leading role in assessing, diagnosing, and managing patients battling pain and opioid addiction (ANA, 2016). In 2018, the National Association of Orthopaedic Nurses (NAON) released a position statement on the opioid epidemic that concurs with the assessment from the ANA, stating that education must be increased for providers and patients alike. Nurses are qualified and well positioned as frontline caregivers to support coordinated efforts to address the epidemic. The importance of the role of the nurse in providing patient education cannot be overstated. Nurses must first educate themselves to better serve their patients.

Healthcare Provider Education

The need for healthcare provider education is underrepresented in the literature, and research is needed to assess the extent of the problem. A survey conducted by the American Medical Association showed that 25% of physicians report that continuing medical education on safe opioid prescribing is not readily available or does not meet their practice needs (Edroso, 2018). The ANA joined 40 other provider groups in a pledge to train 540,000 opioid prescribers over the next 2 years (ANA, 2016). For frontline nurses, knowledge of the impact of the opioid epidemic in their geographical region can prepare them to address risks to their individual patients. For example, Marietta, GA, is located solidly in a "drug triangle" that affects the metropolitan area of Atlanta and three neighboring counties. In this district, the misuse of opioids and heroin is increasing exponentially. Between 2010 and 2016, this region experienced a nearly 4,000% increase in overdose-related deaths (Campbell, Gutierrez, Rudeseal, Savidge, & Livingston, 2017). Many of these deaths reflected a specific demographic: age 35 years and younger, relatively successful, affluent people. Educated nurses in this region caring for patients who fall into this demographic are prepared to assess the risk factors and incorporate opioid stewardship in the individualized care plan.

Patient Education

Educating patients on pain management is an important step to assist their ability to self-care. With the introduction of Hospital Consumer Assessment of Healthcare Providers and System (HCAHPS) survey, nurses have placed an emphasis on educating about side effects of medication. However, when educating patients about opioids, it is equally important to speak to the normal and expected use as well as their safe and proper disposal. In addition, teaching alternative treatments to opioids for pain management empowers them to address their pain while reducing their risk for misuse and abuse.

A significant barrier to effective patient education is often the health literacy of patients and their families. Health literacy is the capacity for a patient to understand basic health information to make appropriate health decisions. Frequently, education materials provided to patients have high readability scores, which can impede efforts to instruct and promote self-care (Dee, 2018). When patient education materials are created using federal plain language guidelines (Plainlanguage.gov, n.d.), presented information can be meaningful. In addition, when nurses have access to a variety of source material, they can best meet the needs of individual patients. For example, Simmons, Rajan, Goldsamt, and Elliott (2018) found measured success utilizing complementary education techniques online to educate laypersons on Opioid Prevention, Recognition and Response Training. Education platforms that incorporate all learning styles—visual, auditory, kinesthetic, and reading/writing—have the ability to reach a broad audience and can better prepare patients to make informed decisions about their plan of care.

Implications for Orthopaedic Nurses

Nurses understand the importance and impact of patient education on successful patient outcomes. Nurses must evaluate the prepared education materials available at

their point of care for general readability and level of patient understanding. Supplementing general discharge education with opioid-specific material can assist nurses to provide information beyond an informed discussion.

For example, patients in a Level II trauma center receive printed materials created to educate them on both the opioid epidemic and their individual opioid prescription. Information provided includes responsible use of opioid medication and the importance of utilizing other forms of analgesia. Cryotherapy is a very valuable tool for reducing pain and inflammation postoperatively and is presented with other nonpharmacological techniques such as distraction, elevation to relieve edema, mobilization, calming environment, and aroma therapy. In addition, patients are educated about their multimodal regimen and what type of pain they are each designed to relieve. However, the patients are also told that if their pain is uncontrolled despite these interventions, they need to notify their physician to ensure there is not an underlying problem or complication from their treatment.

An important discussion for patients related to opioid use is proper disposal once the medication is no longer needed. Patients are encouraged to dispose of unused medications safely and resist the urge to save leftover pills for those "just-in-case" situations. Opioids can be diverted in the home setting by family members and may be lethal with only a single dose if accidently ingested by children or pets.

The U.S. Food and Drug Administration (FDA) recommends three safe methods of medication disposal: medication take-back options, disposal in household trash, and flushing medicine in the toilet (HHS, 2018a). The FDA has a limited number of permanent turn-in sites that may be accessed on the FDA's website. Nurses can investigate these sites in their area and promote use if needed. Many pharmacies sponsor "medication take-back days" to promote safe medication disposal. Similar events may be organized by law enforcement officials.

If medication return is not easily accessible, patients can dispose of medication in the trash. However, specific guidelines exist for safe trash disposal. Uncrushed pills must be combined with an inedible substance in a sealable plastic bag. Used coffee grounds, used kitty litter, and soil are all potential agents for safe trash disposal. In addition, labels must be removed from pill bottles before disposal to protect personal health information.

Most opioids are on the FDA's approved list for flushing down the toilet including oxycodone, hydrocodone, fentanyl, hydromorphone, morphine, methadone, and tapentadol. Patients must understand the risk to the household when unused opioids remain in the medicine cabinet. Identifying the disposal plan most convenient for individual patients allows them to proactively protect their environment after recovery is complete.

Conclusion

Orthopaedic nurses are challenged to address the pain and suffering of their patients while mitigating the risk of opioid misuse, abuse, and addiction. Balancing pain relief with opioid stewardship can feel like a tightrope walk in today's opioid epidemic. A comprehensive stewardship strategy is needed to prevent further escalation of the problem. As frontline caregivers, nurses play a pivotal role in reinforcing patient education and awareness of risks and benefits of opioid use. When providers, nurses, and patients are educated about opioid stewardship, the comprehensive care plan can safely address pain management.

References

American Nurses Association. (2016). *Nursing's role in addressing nation's opioid crisis*. Retrieved from https://www.nursingworld.org/~4ae212/globalassets/docs/ana/ana_nursings-role-in-opioid-crisis_2016.pdf

Campbell, J., Gutierrez, E., Rudeseal, L., Savidge, B., & Livingston, M. (2017, March 3). The triangle is growing: The full investigation. *11 Alive*. Retrieved from https://www.11alive.com/article/news/investigations/triangle/the-triangle-is-growing-the-full-investigation/85-415634751

Centers for Disease Control and Prevention. (2016). CDC guideline for prescribing opioids for chronic pain—United States, 2016. *Recommendations and Reports*, *65*(1), 1–49. Retrieved from https://www.cdc.gov/mmwr/volumes/65/rr/rr6501e1.htm

Centers for Disease Control and Prevention. (2017). *Understanding the epidemic*. Retrieved from https://www.cdc.gov/drugoverdose/epidemic/index.html

Dee, V. (2018). Health literacy as a measure to reduce cost, improve health and access [doctoral dissertation]. Retrieved from https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=6062&context=dissertations

Devin, C. J., Lee, D. S., Armaghani, S. J., Bible, J., Shau, D. N., Martin, P. R., & Ehrenfeld, J. M. (2014). Approach to pain management in chronic opioid users undergoing orthopaedic surgery. *Journal of the American Academy of Orthopaedic Surgeons*, *2014*(22), 614–622. doi:10.5435/JAAOS-22-10-614

Duarte, D. F. (2005). Opium and opioids: A brief history. *Brazilian Journal of Analgesia*, *55*(1), 135–146. doi:10.1590/S0034-70942005000100015

Edroso, R. (2018, June 1). Raise the bar on pain management and opioids: Craft policy that goes beyond the law to help patients and prescribers. *Patient Safety Monitor Journal, 6*, 10–12. Retrieved from http://www.hcpro.com/QPS-331314-234/Raise-the-bar-on-pain-management-and-opioids.html

Fiellin, L. E., & Fiellin, D. A. (2018). Toward better stewardship: Gaining control over controlled substances. *Annals of Internal Medicine*, *168*, 883–884. doi:10.7326/M18-1146

Georgia Drugs and Narcotics Agency. (n.d.). *Georgia prescription drug monitoring program (GA PDMP)*. Retrieved from: https://gdna.georgia.gov/georgia-prescription-drug-monitoring-program-ga-pdmp

Ghafoor, V. L., Phelps, P., & Pastor, J. (2013). Implementation of a pain medication stewardship program. *American Journal of Health System Pharmacy*, *70*, 2070–2075. doi:10.2146/ajhp120751

International Narcotics Control Board. (2015). [Graph illustration of morphine equivalence in mg/capita from World Health Organization population data]. *Global Opioid Consumption*. Retrieved from http://www.painpolicy.wisc.edu/sites/default/files/2018-03/global_me_methadone.pdf

Jo, C. H., Shin, J. S., & Huh, J. (2014). Multimodal analgesia for arthroscopic rotator cuff repair: A randomized,

placebo-controlled, double-blind trial. *European Journal of Orthopaedic Surgery & Traumatology*, *24*(3), 315–322. doi:10.1007/s00590-013-1208-z

Kang, H., Ha, Y. C., Kim, J. Y., Woo, Y. C., Lee, J. S., & Jang, E. C. (2013). Effectiveness of multimodal pain management after bipolar hemiarthroplasty for hip fracture: A randomized, controlled study. *The Journal of Bone and Joint Surgery Incorporated*, *95-A*(4), 291–296. doi:10.2106/JBJS.K.01708

Kim, S. I., Ha, K. Y., & Oh, I. S. (2016). Preemptive multimodal analgesia for postoperative pain management after lumbar fusion surgery: A randomized controlled trial. *European Spine Journal*, *25*(5), 1614–1619. doi:10.1007/s00586-015-4216-3

Lamplot, J., Wagner, E., & Manning, D. (2014). Multimodal pain management in total knee arthroplasty: A prospective randomized controlled trial. *The Journal of Arthroplasty*, *29*(2014), 329–334. doi:10.1016/j.arth.2013.06005

Milani, P., Castelli, P., Sola, M., Invernizzi, M., Massazza, G., & Cisari, C. (2015). Multimodal analgesia in total knee arthroplasty: A randomized, double-blind, controlled trial on additional efficacy of periarticular anesthesia. *The Journal of Arthroplasty*, *30*(2015), 2038–2042. doi:10.1016.j.arth.2015.05.035

Nalamachu, S. R., & Shah, B. (2018). Abuse of immediate-release opioids and current approaches to reduce misuse, abuse, and diversion. *Postgraduate Medicine*, 1–7. doi:10.1080/00325481.2018.1502569

National Association of Orthopaedic Nurses. (2018). Opioid epidemic (position statement). Retrieved from http://www.orthonurse.org/d/do/8435

Plainlanguage.gov. (n.d.) *Federal plain language guidelines*. Retrieved from https://plainlanguage.gov/guidelines/

Simmonds, M. J., Finley, E. P., Vale, S., Pugh, M. J., & Turner, B. J. (2015). A qualitative study of veterans on long-term opioid analgesics: Barriers and facilitators to multimodality pain management. *Pain Medicine*, *16*(4), 726–732. doi:10.1111/pme.12626

Simmons, J., Rajan, S., Goldsamt, L. A., & Elliott, L. (2018). Implementation of online opioid prevention, recognition and response trainings for laypeople: Year 1 survey results. *Substance Use & Misuse*, *53*(12), 1997–2002.

Stratton, T. P., Palombi, L., Blue, H., & Schneiderhan, M. E. (2018). Ethical dimensions of the prescription opioid abuse crisis. *American Journal of Health-System Pharmacy*, *75*(15), 1145–1150. doi:10.2146/ajhp170704

Substance Abuse and Mental Health Services Administration. (2013). *Results from the 2013 National Survey on Drug Use and Health: Summary of national findings*. Retrieved from https://www.samhsa.gov/data/sites/default/files/NSDUHresultsPDFWHTML2013/Web/NSDUHresults2013.pdf

Teng, Y., Jiang, J., Chen, S., Zhao, L., Cui, Z., Khan, S., & Xia, Y. (2014). Periarticular multimodal drug injection in total knee arthroplasty. *Knee Surgery Sports Traumatology, Arthroscopy*, *22*(8), 1949–1957. doi:10.1007/s00167-013-2566-0

U.S. Department of Health and Human Services. (2017). *5-point strategy to combat the opioid crisis*. Retrieved from https://www.hhs.gov/opioids/about-the-epidemic/hhs-response/index.html

U.S. Department of Health and Human Services. (2018a). *Disposal of unused medicines: What you should know*. Retrieved from https://www.fda.gov/drugs/resourcesforyou/consumers/buyingusingmedicinesafely/ensuringsafeuseofmedicine/safedisposalofmedicines/ucm186187.htm#Medicines_recommended

U.S. Department of Health and Human Services. (2018b). *What is the U.S. opioid epidemic?* Retrieved from https://www.hhs.gov/opioids/about-the-epidemic/index.html

Wang, C., Cai, X. Z., & Yan, S. G. (2015). Comparison of periarticular multimodal drug injection and femoral nerve block for postoperative pain management in total knee arthroplasty: A systematic review and meta-analysis. *The Journal of Arthroplasty*, *2015*, 1281–1286. doi:10.101/j.arth.2015.02.005

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