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Assessing Patients' Risk for Opioid Use Disorder

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ABSTRACT

Opioid use disorder and opioid misuse continue to increase rapidly in prevalence in North America. Nurses play a critical role in managing pain in patients who are at risk for opioid use disorder. The interplay of pain and opioid use disorder provides nurses with an opportunity to address urgent needs while treating patients across the continuum of care. This article reviews strategies for assessing risk for opioid use disorder while treating patients with pain. Implementing these approaches into daily nursing practice may improve patient care and help reduce the incidence of opioid use disorder.
Key words: acute care, opioid misuse, opioid risk assessment, opioid use disorder

Opioid use disorder (OUD) and opioid misuse continue to increase rapidly in prevalence in North America. Whether the opioids are obtained through illicit means or through legitimate sources for pain management, nurses are faced with the challenging task of treating patients' pain while minimizing the risk of OUD. Today, many patients who are prescribed opioids to relieve pain have questions about the risks associated with their use or are specifically concerned about OUD, and most health care providers are concerned that administering opioids for pain may increase a patient's risk for OUD. The purpose of this article is to help the critical care nurse respond to these questions and concerns.

Risk for OUD can arise across the health care continuum. Recent population-based studies showed that prescribing of opioids to patients in the emergency department was associated with considerable risk for recurrent opioid use.[1,2] Another study showed that patients taking opioids before undergoing surgery continued to use opioids beyond their expected postoperative healing period.[3] Yet another study showed that after total knee replacement, 20% of patients were still experiencing pain at 6 months, with possible prolonged opioid use.[4] A retrospective analysis of administrative health claims data showed chronic opioid use after a variety of surgical procedures, including cesarean delivery (odds ratio [OR], 1.28; 95% confidence interval [CI], 1.12-1.46) and total knee arthroplasty (OR, 5.10; 95% CI, 4.67-5.58).[5] Additionally, 2 studies in which researchers analyzed health claims data for postsurgical chronic opioid use showed that patients with a preoperative history of benzodiazepine or antidepressant use, depression, or alcohol or drug abuse, as well as those older than 40 years, had increased rates of chronic opioid use.[5,6] In the United States, chronic pain has reached epidemic proportions, with 25 million people reporting daily pain and 23 million people reporting chronic pain that is

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Table 1: Assessment Tools for Aberrant Drug-Related Behaviors, Opioid Use Disorder, and Opioid Misuse

Name of Tool	Number of Items	Dimensions	Delivery Method	Administration Time	Score Interpretation
Screener and Opioid Assessment for Patients with Pain–Revised (SOAPP-R)	24	Mood swings, feelings of boredom, overconcern with medications, friends who abuse alcohol and/or drugs, personal history of alcohol and/or drug use	Self-report	Less than 8 minutes	Score higher than 18 indicates patient is 2.5 times as likely to be at high risk for aberrant drug-related behavior
Diagnosis, Intractability, Risk, and Efficacy (DIRE) Score	7	Psychological health, chemical health, reliability with treatment, and social support	Health care provider in primary care	Less than 2 minutes	Score of 13 or below indicates patient is not a candidate for long-term opioid therapy
Opioid Risk Tool for Opioid Use Disorder (ORT-OUD)	9	Family history of substance abuse, personal history of substance abuse, age, psychological disease	Self-report	Less than 5 minutes	Score of 3 or higher indicates risk for opioid use disorder
Opioid Compliance Checklist (OCC)	8	Running out of medications early, missing scheduled medical appointments, taking opioid medications in other ways than prescribed	Self-report	Less than 2 minutes	One or more "yes" response indicates there is a greater chance of predicting misuse of opioids

so intense that they cannot support or care for themselves.[7] Although state and federal policies have addressed opioids prescribed for chronic nonmalignant pain, opioids will always play a large role in management of acute pain, whether as an adjunct to neural blockade or as part of a multimodal analgesia regimen.[8]

Government agencies have issued guidelines recommending a reduction of opioid prescribing,[9] and various tools have been developed to help assess a patient's level of risk for OUD and opioid misuse (Table 1). Although additional research is needed on the ability of these tools to predict aberrant drug-related behaviors and OUD, federal and state guidelines currently recommend the use of these tools to assess both adult and adolescent patients.[9,10]

The main objectives of this article are to identify risk factors for OUD, summarize key elements of tools for assessing the risk of OUD and opioid misuse, and review strategies for monitoring patients for OUD and opioid misuse. Clinical implications for nursing are summarized in the areas of clinical practice, education, and research.

Risk Factors for OUD

Opioid use disorder is a problematic pattern of opioid use leading to clinically significant impairment or distress.[11] Among its diagnostic criteria are unsuccessful efforts to cut down or control opioid use, spending a great deal of time procuring and using opioids, persistent opioid use despite related social or interpersonal problems, exhibiting tolerance, and exhibiting withdrawal symptoms when stopping or reducing use.[11] Relevant to nurses working in critical care are patient risk factors for OUD, behaviors indicating misuse, and characteristics of prescribed opioids associated with OUD risk (Table 2).

Studies yielding OUD incidence rates have varied in terms of study design, diagnostic criteria, and the clinical setting in which data were collected. Therefore, some researchers performing meta-analyses have grouped studies by characteristics to address the difficulty of interpreting wide ranges in reported OUD

Table 2: Risk Factors for Opioid Use Disorder and Opioid Misuse

Patient Risk Factors for OUD	Behaviors Indicating Misuse	Prescribed Opioid Risk Factors
Family history of any SUD; personal history of any SUD; mental health diagnosis such as psychotic disorder, somatoform disorder, or personality disorder	Use of prescribed opioid longer than directed; use of opioid in greater amounts than prescribed; erratic use of opioids; inappropriate use of opioids to manage symptoms other than pain, such as anxiety; use of opioid with alcohol or illegal substance; overconcern with opioid medications; demanding opioids; rejecting or missing appointments for alternative methods of pain management care; demonstrating anger and hostility; providing an inconsistent history; has urine toxicology results not concordant with the prescription	Opioids received for more than 30 days; daily dose of opioid greater than 120 morphine milligram equivalents; concurrent use of atypical antipsychotic agents; opioids prescribed by multiple prescribers and received from multiple pharmacies as indicated by the PDMP

Abbreviations: OUD, opioid use disorder; PDMP, prescription drug monitoring program; SUD, substance use disorder.

incidence (eg, 0.10%-34%[12] or 0.70%-23.0%[13]). One group analyzed 3 studies looking at incidence of OUD in pain management: (1) a small study conducted in a chronic pain clinic with health care providers assessing symptoms of OUD; (2) a large study based on a commercial insurance database that examined initial opioid prescriptions and diagnoses of OUD within 2 years; and (3) a large study based on a commercial insurance database that examined receipt of chronic opioid therapy and diagnoses of OUD within 2 years. In the meta-analysis of these 3 studies, the researchers found an incidence rate of OUD associated with prescribed opioids of 2.5%,[12] a result that is relevant to those in clinical practice. Also significant to clinical practice are systematic reviews that showed the highest risk for OUD to be associated with certain characteristics of individuals who were opioid naive when initially prescribed opioids and with certain characteristics of the opioids prescribed (Table 2). All of these factors are important in the assessment of risk for OUD.

Opioid misuse, which is more common than OUD, refers to the use of opioids in a manner other than how they were indicated or prescribed,[14] such as using a prescribed opioid medication longer than directed or in greater amounts regardless of potential harm.[14,15] A systematic review using robust measurements of high-quality studies showed prevalence rates of misuse ranging from 23.6% to 24.9%.[13] Terms such as *opioid use disorder* and *opioid misuse* are endorsed and used by government organizations and the *Diagnostic and Statistical Manual of Mental Disorders* (fifth edition).[11,16] Terms such as *addict, abuser, drug seeker,* and *doctor shopping* should be avoided to reduce the stigma associated with substance use disorder.

Risk Assessment Tools for OUD and Opioid Misuse

Risk assessment tools were originally designed to measure risk of developing aberrant drug-related behaviors in patients prescribed opioids for pain. Aberrant drug-related behaviors include demanding opioids, rejecting alternative methods of care, demonstrating anger and hostility, and providing an inconsistent history.[17] However, those types of behaviors can occur in a variety of situations within the patient-clinician encounter. The first risk assessment tool to challenge the current paradigm of screening for aberrant drug-related behavior was the Opioid Risk Tool for Opioid Use Disorder (ORT-OUD),[18] which shifted to measuring risk of OUD.

The use of opioid risk assessment tools has 3 purposes: (1) to enhance planning for safe and effective pain management[19]; (2) to reassure patients who are anxious about their risk that their history does not mean their pain will not be managed[20]; and (3) to inform patients with a history of substance use disorder that safeguards will be used in their pain management and that referral for substance abuse treatment is available if needed.[21] Risk stratification can be incorporated into the patient's medical record, demonstrating thorough assessment and accountability for the treatment plan. Maintaining open and respectful conversations with patients is essential, and the use of these tools opens the door to such communication.

Opioid risk assessment tools vary in their design, ease of administration, risk variables

monitored or predicted, and psychometrics used. Currently, more than 25 opioid risk assessment tools are in use. A systematic review revealed insufficient evidence of diagnostic accuracy of opioid risk assessment tools in the prediction of risk of misuse, abuse, or overdose of prescribed opioids.[22] Furthermore, before 2014, there was little evidence of validity and reliability for any of the available opioid risk tools used to predict the likelihood of developing OUD after prescription of opioids for pain.[22] The 4 risk assessment tools discussed in this article were chosen on the basis of their widespread use as reported in the literature and my own experience with these tools. Three of the tools are for use before prescribing opioids, and 1 is for use while the patient continues taking opioids. The tools are described below in terms of purpose, intended patient population, context of care during testing, dimensions assessed, and psychometric evaluations (ie, reliability and validity).

Screener and Opioid Assessment for Patients with Pain

The Screener and Opioid Assessment for Patients with Pain (SOAPP) is a 24-item self-report questionnaire that the patient completes.[23] The purpose of this tool is to determine potential risk for aberrant drug-related behaviors when opioids are prescribed for pain treatment. The tool was revised in 2008 to reduce susceptibility to patients' deception, to increase discriminative ability, and to improve predictive ability. Dimensions assessed are mood swings, feelings of boredom, overconcern with medications, having friends who abuse alcohol and/or drugs, and personal history of alcohol and/or drug use.[23] Testing was performed in patients with chronic pain who received long-term opioid therapy. The initial psychometric evaluation of the revised tool (SOAPP-R) revealed internal consistency through a Cronbach α of 0.88. As a standard criterion for prediction of aberrant behaviors, the area under the curve was 0.81 ($P < .001$). In clinical practice, the cutoff score can be somewhat arbitrary and based on the judgment of the clinician. However, for the purposes of psychometric evaluation, a cutoff score of 18 showed a sensitivity of 81% and a specificity of 68%; a score higher than 18 can be interpreted as indicating that the patient is 2.5 times as likely to be at high risk for aberrant drug-related behavior. Overall, the psychometric evaluation for predicting aberrant drug-related behavior was good; at the time the tool was developed and tested, the prevalent thinking of clinicians and researchers was that assessing for aberrant drug-related behaviors was the best way to stratify opioid risk before initiating opioid treatment for pain.

Diagnosis, Intractability, Risk, and Efficacy Score

The Diagnosis, Intractability, Risk, and Efficacy (DIRE) Score is a clinician-rated scale completed by the clinician.[24] The purpose of the tool is to predict analgesic efficacy and patient compliance with long-term opioid treatment in primary care. The targeted population for the initial psychometric evaluation was patients with chronic noncancer pain and primary care providers. Sixty-one vignettes were derived from deidentified pain clinic patients' medical records. The raters (3 were family practice physicians and 2 were internal medicine physicians) were instructed on scoring the vignettes using the DIRE tool. Four dimensions are measured: diagnosis, intractability, risk, and efficacy. Risk subcategories are psychological health, chemical health, reliability with treatment, and social support. The psychometric evaluation of this tool showed internal consistency through a Cronbach α of 0.80. The cutoff score is 13, with a score of 13 or below interpreted to indicate that the patient is not a candidate for long-term opioid therapy.[24] The receiver operating characteristic curve was used to measure diagnostic ability to predict compliance, with a sensitivity of 94% and specificity of 87%, and predict efficacy, with a sensitivity of 81% and specificity of 76%. The intraclass correlation coefficient (ICC) for intrarater reliability was 0.95 and for interrater reliability was 0.94 and analyzed using mixed linear modelling.[24] Furthermore, the primary care providers in this study were asked to estimate the amount of time it would take to complete a DIRE Score on a patient in primary care; the mean estimate was less than 2 minutes. In summary, the 4 dimensions measured with this tool create a comprehensive picture of patient behavior regarding opioids. The DIRE Score is not time consuming to use, and it structures and quantifies health care clinicians' judgments made during the patient

encounter. This tool has not been tested across the care continuum, including acute care but shows promise given its comprehensive nature.

Opioid Risk Tool for Opioid Use Disorder

The ORT-OUD is a 9-item self-report tool completed by the patient.[18] The tool was revised from the "original" ORT in a unique cohort of patients with chronic nonmalignant pain receiving long-term opioid therapy who had no evidence of OUD (n = 781) and a group who developed OUD (n = 397) when initially prescribed an opioid for pain treatment. The purpose of this tool was to predict the development of OUD in patients with chronic nonmalignant pain on long-term opioid therapy; it did not measure aberrant drug-related behavior. The variables measured in the psychometric evaluation were age, psychological disease, and personal and family history of substance abuse. Clinicians using the tool were able to predict the development of OUD in patients with chronic nonmalignant pain on long-term opioid therapy (OR, 3.085; 95% CI, 2.725-3.493; $P < .001$), with high sensitivity of 85.4% (95% CI, 79.9%-89.8%) and high specificity of 85.1% (95% CI, 81.1%-88.5%).[18] The cutoff score was 2.5, with a score of 0 to 2 indicating no risk for OUD and a score of 3 or greater indicating risk for OUD. The ORT-OUD demonstrated excellent ability to predict the development of OUD in patients with chronic pain who were receiving long-term opioid therapy.[18] The study of the revised version of this innovative tool showed that personal and family history of substance use disorder, patient age, and concomitant psychiatric conditions may be sufficient to determine general risk for developing OUD in people with chronic pain receiving long-term opioid therapy.

Opioid Compliance Checklist

The Opioid Compliance Checklist (OCC) is an 8-item self-report measure for use by patients with chronic pain who have been prescribed long-term opioid therapy.[25] The purpose of this tool is to monitor ongoing opioid compliance in patients receiving opioids in primary care settings. The population studied consisted of patients with a diagnosis of chronic noncancer pain and primary care providers treating patients with chronic pain and prescribing opioids for pain. The 8 items on the checklist are answered "yes" or "no," with 1 "yes" response as the cutoff (using sensitivity, specificity, positive predictive value, and negative predictive value data calculations) with an area under the curve of 0.645 (95% CI, 0.562-0.721; $P < .01$), sensitivity of 59.7%, and specificity of 65.3%, showing moderate prediction capability.[25] Examples of dimensions measured were running out of medications early, missing scheduled medical appointments, and taking opioid medications in ways other than prescribed. Significant test-retest reliability was found over a 1-month period for 7 of the 8 items (ICC range, 0.15-0.65; $P < .05$).[25] The 8-item tool was endorsed as clinically useful in identifying misuse of opioids with repeated administrations.[25] In summary, the OCC is reliable and moderately valid in detecting current and future aberrant drug-related behavior and nonadherence among patients with chronic pain in primary care and potentially other clinic populations.

Other Strategies to Monitor Opioid Misuse

Other methods of helping clinicians monitor for ongoing opioid misuse include prescription drug monitoring programs (PDMPs) and urine drug toxicology screening. These strategies can be used in conjunction with opioid risk assessment tools to enhance assessment throughout the delivery of care and should be documented in the medical record.

Prescription Drug Monitoring Programs

The purpose of a PDMP is to help health care prescribers gain information about the control of prescribed opioids. The program's goals are to reduce inappropriate prescribing of opioids, improve clinical outcomes, and decrease overdose deaths involving opioids. As of February 2018, PDMPs were operational in 49 states in the United States, the District of Columbia, and 2 territories (Guam and Puerto Rico).[26] In May 2019, the state of Missouri continued to withhold legislative support of a state PDMP. However, in 2017 the St. Louis County, Missouri, Department of Public Health created a voluntary tracking system for patients' prescriptions of schedule II to IV medications.[27]

Available Data. Data available for each opioid prescription include patient demographic details and controlled substance

prescription history. The prescription data generally include the medication, quantity and daily dose, written and fill dates, prescriber, and dispensing pharmacy. The drugs included in PDMPs vary by state and range from prescription drugs with high abuse potential to all controlled prescription drugs in addition to other drugs of concern.

Data from a state's PDMP may be shared with other states. Currently, federal law does not require PDMP data sharing; as of September 2017, 43 states were engaged in interstate data sharing and 5 states were in the process of implementing interstate data sharing. Furthermore, states vary in terms of how information is shared with other states. Successful data sharing requires funding for technology supporting data sharing, user education, and individual state participation in real-time data collection.[28]

Variability Among Health Care Providers. Some states continue to make health care providers' access to a PDMP voluntary. One study showed that health care providers accessed the database when they needed to evaluate patient history and look for patterns of potential misuse and dangerous medication combinations such as benzodiazepines and opioids.[29] Another study showed that health care providers accessed the database when treating new patients, when issuing initial opioid prescriptions, and when a patient was suspected of drug misuse or abuse.[30] Studies show that PDMPs have been successful in reducing inappropriate prescribing behavior, patients' use of multiple prescribers, and overdose deaths.[31-35]

Urine Drug Toxicology Screening

Urine drug toxicology screening is a standard of care in treating patients with chronic nonmalignant pain and those receiving opioids for pain.[9] Urine drug testing can yield information that is not readily available, such as the presence of opioids prescribed by other prescribers or of illegally obtained drugs; it can also indicate when patients are not taking prescribed opioids, potentially signifying adverse effects or diversion.[36]

Population. Urine drug testing has been used to monitor people with substance use disorder, including OUD; people with chronic pain who are prescribed opioids; and people with acute pain requiring initiation of opioid treatment. It can also be used for patient populations at risk for misuse of prescribed opioids through their combination with nonprescribed opioids, benzodiazepines, or heroin. The use of urine drug testing may help prevent overdose and can help the health care provider guide patients to appropriate care.[37]

Types of Tests. This article discusses 2 types of drug testing techniques: immunoassays and gas chromatography–mass spectrometry (GC-MS). Immunoassays are easy to use, relatively inexpensive, and qualitative. Immunoassays bind to drug metabolites and are more commonly used across the health care continuum. With a higher cutoff level, false negatives are more common. These tests carry a risk of cross-reactivity with other agents, which can increase the frequency of false-positive results. Alternatively, GC-MS allows more advanced laboratory services and directly measures drugs and their metabolites. It has less cross-reactivity with other agents, minimizing false positives, and is very sensitive at low levels, minimizing false negatives. Disadvantages of GC-MS are that it is very expensive and obtaining results takes longer.[38]

Difficulties With Urine Drug Testing. Using urine drug testing for screening is associated with several problems. These tests do not yield information about the dose of opioids taken, making overuse difficult to determine through this method. The cost to the patient is problematic when insurance does not cover it. This cost can range from $211 to $363 for a single immunoassay screening test plus a confirmatory laboratory test using the GC-MS technique.[39] Members of the expert panel behind the Centers for Disease Control and Prevention guidelines were not in total agreement on the ideal frequency of urine drug testing; however, most thought that once per year was enough unless there were signs of misuse.[9] Finally, urine drug test results are often misinterpreted, resulting in stigmatization, inappropriate termination of care, or unwarranted discontinuation of the opioids.

Toxicology interpretation is a specialty field, and specialists are often available for consultation in the clinical setting. Two examples may be used to illustrate how nurses in clinical care can interpret the results. In the first example, an immunoassay performed for a hospitalized patient is positive for opiates, and the health care team questions whether this positive result stemmed from administration of morphine in the ambulance on the way to the hospital or

was a high-risk finding requiring further investigation. The urine specimen was sent to the laboratory for a confirmatory test using GC-MS. A few days later, the confirmatory test showed a positive result for 6-MAM (monoacetylmorphine). 6-MAM is a metabolite of heroin and does not indicate the presence of morphine sulfate. It can be detected in the urine 12 to 24 hours after use. The correct interpretation of this result is possible heroin use, requiring further screening for OUD and referral for treatment.[38] In the second example, a patient who was prescribed methadone for OUD has an immunoassay result that was negative for any drug. A member of the health care team questioned the patient about possible diversion of the methadone, which the patient denied. Methadone is not derived from natural opium and is considered a synthetic opioid. Immunoassays often do not detect synthetic opioids, resulting in a false negative.[38] If the patient is adherent to methadone maintenance therapy, confirmatory GC-MS will detect methadone, confirming that the patient was receiving appropriate care.

Implications for Nurses

Nurses must be aware of risk factors for developing OUD when opioids are prescribed to treat patients' pain. The use of PDMPs and urine drug toxicology screening can yield additional information to facilitate the care of patients with pain in the context of OUD. Areas of nursing in which this information can be helpful are clinical practice, education, and research.

Clinical Practice

In all practice settings, patients in pain deserve safe and effective treatment. Acknowledging risks related to opioid use can lead to implementation of strategies to limit those risks, including use of a validated opioid risk assessment tool on admission to the hospital or unit and continued monitoring after discharge. The results of such assessments can help guide care and should be part of the electronic medical record. Risk assessment includes obtaining a thorough substance use or abuse history and information on current drug use and should be part of routine care.[40] The opioid risk assessment should be performed at the same time as other admission assessments. Use of an opioid risk assessment tool opens the door to communication about a topic that is as important as diabetes management or cardiac management. In a study conducted in a methadone clinic on the experiences of patients with coexisting addiction and pain, participants stated, "Secrets keep you sick."[41] Patients want their health care team to know about their substance use history so that the team can provide safe and comprehensive care.

Nurses should also gain access to PDMP databases. In certain states, registered prescribers (ie, physicians, nurse practitioners, physician assistants) can designate other health care professionals as agents, allowing them to access PDMP data. To become an agent, the nurse can apply through the state board of nursing or pharmacy to receive access credentials as directed by a registered prescriber. When directed by a registered prescriber, the nurse can include the PDMP information in the medical record, if this procedure is supported by institutional policy. This information is protected in the same way as other health care information. Through this process, the nurse can play a key role in identifying problems early so that the patient can receive appropriate care.

Upon the patient's discharge from inpatient or outpatient care with opioids prescribed for pain, the nurse should help ensure the provision of appropriate and safe follow-up care. A cross-sectional study showed that less than 10% of admissions to substance abuse treatment resulted from referrals by a health care provider.[21] This percentage must be increased if patients are to receive the care they need. We can no longer be reticent about referral to substance abuse treatment. If patients at high risk are discharged from the hospital in pain, several options are available to ensure safe care:

- Designate a responsible person (usually a family member) who has been vetted as a reliable caregiver to be in charge of the opioid medications and provide this individual with comprehensive instructions.
- Order a computerized lockbox for the medication and arrange for a public health nurse or home health nurse to set up these medications so that they are dispensed to the patient on a predetermined schedule. Some insurance companies will pay for these boxes. One systematic review showed that 73% to 77% of postsurgical patients stored opioids without locking them up,

despite US Food and Drug Administration and Centers for Disease Control and Prevention guidelines recommending this.[42] Lockboxes can be found at community pharmacies or ordered online and have been endorsed by the American College of Physicians as a strategy for keeping patients safe when they have been prescribed opioids for pain.[43]

- Transfer the patient to a transitional care unit where the opioid medications can be administered to the patient for short-term pain management. The social services department can determine whether reimbursement is available for this level of care.
- Instead of sending the patient home with opioids, determine whether pain can be managed effectively with nonopioid medications (eg, high-dose acetaminophen or gabapentin) and nonpharmacological interventions (eg, cold and heat therapy as directed, transcutaneous electrical nerve stimulation, physical therapy, cognitive-behavioral therapy). More information about nonopioid medications and nonpharmacological interventions can be obtained from the book *Core Curriculum for Pain Management Nursing*.[44]

Education

Core competencies in assessing patients for opioid risk should become part of standardized nursing education. Herr et al[45] recommended identifying and discussing biases that may influence care of patients, particularly those with pain and a history of OUD. Withholding care from people with OUD or stigmatizing and marginalizing patients with OUD must not be tolerated in the nursing profession. A patient receiving treatment for heroin abuse revealed in a study that when he was not treated with respect, or was called a "drug seeker," it made him want to use drugs again.[41] Nurse educators must model care, concern, and open communication with all patients, including those with OUD and pain.

Nurses must be educated on methods of assessing patients in pain for risk of OUD in a nonjudgmental manner. The most commonly used and well-validated opioid risk assessment tools must be taught in nursing education, and knowledge of their use should be ascertained by means of standardized testing (ie, National Council Licensure Examination) for entry-level nurses. Postgraduate education must include lessons on safe use of opioids for pain management and assessment for opioid risk to ensure safe and effective care. Board examinations for advanced practice nurses must cover safe prescribing of opioids for acute and chronic pain and stratification of care according to assessment of opioid risk. Once nurses know how to assess risk, they must become educated on the safe use of opioids for pain management, nonpharmacological management of pain, and nonopioid medications that can enhance pain management. Nurses with such knowledge can play an important role in mitigating risk for OUD in patients receiving treatment for pain.

Research

Appropriate assessment of and interventions for patients with pain who are at risk for OUD requires continual research. Studies on pain management through both pharmacological and nonpharmacological strategies are needed to determine the effects of various interventions on patient outcomes, quality of life, rehospitalization rates, and health care costs. Examples of such research are studies on acceptance and commitment therapy, a cognitive-behavioral therapy intervention[46]; psychometric or validation testing of a tool to measure nurses' clinical knowledge of pain in the changing inpatient population with acute or chronic pain and OUD[47]; and the effect of transcutaneous electrical nerve stimulation on postoperative pain with movement.[48] High-quality research programs require funding at the level of the National Institutes of Health and the Agency for Healthcare Research and Quality. Nurses interested in participating in research on pain management and opioid risk assessment can team with more experienced nurse-researchers or join interdisciplinary research teams that are familiar with these funding mechanisms.

Conclusion

Nurses play an important role in managing pain in patients who are at risk for OUD. The interplay of pain and OUD provides nurses with an opportunity to address urgent needs while treating patients across the continuum of care. A variety of strategies can be used to assess risk for OUD while treating patients with pain. Implementing these approaches

into daily nursing practice may improve patient care and help reduce the incidence of OUD.

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