RADIOLOGY TEAM WORKING WITH NURSES IN MANAGEMENT SEDATED PROCEDURES; REVIEW

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Abstract:
There is currently a lack of a single consensus statement on Registered Nurse (RN) sedation core competencies or a consistent way in which RN sedation practice is regulated in the United States. This is despite the fact that the administration of procedural sedation during imaging is a regular practice among nurses. Variation in Board of Nursing regulation, a lack of research on RN sedation practice, and the absence of a national standard for RN sedation are the three key controversies that are associated with the practice of RN sedation. In order to offer regulators and nurse educators with information regarding the existing standards and knowledge gaps as they pertain to sedation treatment, recommendations are provided to address each of these areas. The discussion also includes methods that can be utilized to enhance sedation research in order to increase practice in this particular field.

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Introduction:

Medications that are sedatives and analgesics can be given to patients in order to alleviate pain, discomfort, and anxiety or distress during diagnostic and/or interventional procedures that do not require general anesthesia. PSA stands for "procedural sedation and analgesia," which is the name given to this method of treatment [1]. According to Conway et al. (2014), it is a regular practice for nurses to provide sedative and analgesic drugs in accordance with the prescriptions provided by the medical practitioner who is performing the procedure. Additionally, nurses use the term "nurse-administered PSA" to refer to the monitoring of the patient. According to Apfelbaum et al. (2018), complications can occur during PSA as a result of the adverse effects of opioids and sedatives that are administered during the procedure. For instance, the sedative drugs might cause the muscles to relax, which can result in a loss of the ability to keep the airway open. Additionally, the analgesic medications that are utilized, which are often opioids, have the potential to slow down the pace of breathing. The condition known as hypoxemia can occur when the amount of oxygen that is circulating in the blood drops to a level that is insufficient for the requirements of the body. This can happen if the difficulties that are causing the problem are not identified and corrective measures are not taken. Hypoxia can cause irreversible damage to key organs, such as the brain and the heart, if it is severe enough and if it is not treated in a timely manner. This can lead to catastrophic adverse consequences, such as persistent neurological disability or even death. It is possible to prevent the occurrence of these adverse effects by intervening at the beginning of complications or shortly after their commencement. As a result, it is of utmost importance to promptly identify and treat any issues that arise from sedation in order to guarantee the safety of the patient during procedures that are carried out with PSA [2].

An individual's self-efficacy can be defined as the degree to which they have faith in their own abilities to achieve specific goals. It has been established in previous studies that individuals will put out their utmost effort and persevere in spite of failure if they have the belief that they are capable of accomplishing a specific goal. In the field of healthcare, it has been demonstrated that clinicians who exhibit a lack of self-assurance in their capabilities are less likely to take the necessary activities for their patients [3]. Therefore, it is likely that nurses would not take activities to control issues associated to sedation if they do not have confidence in their ability to carry out the tasks that are required of them. There has been no research conducted on the self-efficacy of nurses in managing difficulties that develop as a result of the side effects of sedative and analgesic medications that are delivered during medical operations. This is despite the fact that the relevance of this problem is obvious. For this reason, the objective of this study is to design a tool that assesses the level of self-efficacy that nurses possess in treating issues that are known to occur as a result of the adverse effects of sedative and analgesic medicines that are delivered during medical operations [4].

Review:

Sedation is required for children more frequently and for a variety of different reasons than it is for adults. Children also require sedation for treatments more frequently than adults and at deeper levels; yet, children also have the highest risk of and the least tolerance for sedation issues due to their anatomical and physiological variations in areas such as the respiratory system [5]. In addition, children have different levels of tolerance for sedation complications than adults.

In the past, anesthesia providers delivered sedation in operating rooms (ORs). However, procedures are increasingly being conducted in other locations, which has led to an increase in the demand for sedation in other settings and by providers who are not anesthesiologists, such as registered nurses (RNs) [5].

Current research on registered nurses (RNs) providing sedation is scarce, and the majority of it consists of single-site studies that describe the installation and outcomes of RN-led sedation services or the outcomes of RN-administered drug protocols in a specific environment, such as a radiology or endoscopy unit. Neither the outcomes of sedation administered by registered nurses (RNs) nor those of sedation administered by physicians who are not anesthesiologists (MD) or RN-MD teams that monitor and administer sedation have been compared [6].

The Joint Commission (TJC), which is an institution that in the United States is responsible for accrediting health care organizations and programs, has established sedation standards that outline two different provider roles for sedation; however, these standards do not identify the type of provider. The intervention or procedure is carried out by a single provider, who is a physician who is not an anesthesiologist and who functions as a sedation provider (MD). This provider is also able

to simultaneously administer or direct the administration of sedative medicines by another competent provider [6]. In light of the fact that deeper degrees of sedation are associated with a higher risk of problems, the American Academy of Pediatrics (AAP) and the TJC have developed particular criteria for the level of sedation that is meant to be administered (moderate or deep). The majority of children who are given sedation are likely to experience deep sedation at some time during the treatment. This is true regardless of the level of sedation that is intended to be administered, the medicine that is used, or the method by which the medication is administered. Because the level of sedation is a continuum, it is not always easy to predict how the patient will react to the effects of the medication [7]. It is the exclusive responsibility of the registered nurse (RN) provider to continually monitor the patient throughout the deep sedation treatments. However, if moderate sedation is administered, the second provider, who is typically the RN, can simultaneously assist with interruptible duties while monitoring the patient during the sedation procedure. When comparing the results of different sedation delivery systems, it is possible that the influence of team factors, such as the utilization of an organization-wide sedation team with consistent membership, or personnel who possess credentials in giving sedation and work in teams, may be significant. According to the findings of one study, the development of high-quality sedative care systems requires the incorporation of team-training methods that are utilized by aviation crews. On the other hand, the current TJC guidelines continue to emphasize the need of psychomotor skills, such as the management of airways, the knowledge of sedative drugs, and monitoring techniques, in order to guarantee safe sedation treatment. However, there is very little to no description of training or assessment of team methods (RN+MD) [8]. It has been demonstrated in a number of studies that registered nurses (RNs) are utilized as members of teams to administer sedation for procedures such as magnetic resonance imaging (MRI), computed tomography (CT), and endoscopy. In point of fact, a survey conducted among gastroenterologists working in endoscopy centers in the United States discovered that 89.5% of respondents included registered nurses (RNs) as members of their endoscopy and sedation teams. In addition, descriptive practice data from the Pediatric Sedation Research Consortium (PSRC) have demonstrated that registered nurses are solely responsible for administering and monitoring sedation [9]. This data includes adverse event rates and physiologic monitoring practices for non-anesthesiologist sedation providers. The PSRC contains multisite data on pediatric sedation. As opposed to primary sedation providers (physicians or advanced practice providers) who are responsible for ordering medication and maintaining responsibility for the overall management of the patient throughout the sedation process, the American Association of Physicians (AAP) sedation guidelines describe the role of personnel such as registered nurses (RNs) as being purely assistive, providing monitoring and support in the event that resuscitation is required [10]. The PSRC data have been used in a number of research that have investigated the outcomes according to the sedation provider. In a study that included 41,392 cases of pediatric diagnostic radiology sedation, it was shown that 31% of the patients went through non-interventional diagnostic radiography procedures while under the supervision of merely a registered nurse (RN) [11]. The rate of adverse events that were documented for these patients was 5.78 percent. These adverse events included both small difficulties, such as IV access, and serious issues, such as the sudden need for bag-valve-mask ventilation. In another study, the incidence of mild and major problems was reported to be 5.3% in 30,037 cases of sedation delivered by medical doctors and advanced practice sedation providers (physician assistants and nurse practitioners) for a range of procedures. However, the study did not investigate sedation administered by registered nurses. A third study [12] looked into the influence that the type of provider had on the prevalence of serious problems that occurred during interventional and non-interventional procedural sedation.

There is no uniform consensus statement on RN sedation core competencies or a consistent way in which RN sedation practice is regulated in the United States, despite the fact that the administration of procedural sedation, which is sometimes referred to as "conscious" or "moderate" sedation, is a prevalent practice among registered nurses (RNs). A number of subspecialty nursing organizations, like the American Society of Perianesthesia Nurses (ASPN) and the Society of Gastroenterology Nurses and Associates (SGNA), have developed their very own standards pertaining to sedation and have published them in collaboration with other medical subspecialty groups. There is a multitude of contradictory criteria that have been published by a variety of medical and nursing specialty groups, as well as varied policies regarding sedation that have been established by Boards of Nursing [12].

It is not possible to estimate the level of drowsiness that patients will experience just based on the medicine that is administered or the dose that is performed. During the course of the process, the level of sedation and analgesia that is being evaluated can shift. The qualities that are necessary for the sedation provider range from the fact that there are no specific qualifications for minimal sedation to the capacity to manage and rescue patients from any level of sedation or anesthesia that is obtained when moderate and deep sedation levels are planned [13]. There is a lot of controversy around the capability of registered nurse sedation providers to be able to manage and rescue patients who are under anesthesia or a deep level of sedation. On the other hand, there are some patients who are excused from meeting the requirements for sedation monitoring because they are receiving sedative drugs. People who are using sedatives for the treatment of sleeplessness, anxiety, or pain control are some examples of patients who are receiving these drugs. Patients who are not having a diagnostic or therapeutic procedure, such as those who are intubated and ventilated and who are receiving continuous infusions of sedative agents, as well as patients who are at the "minimum" sedation level, are excused from following the standards for sedation monitoring and provider requirements [13].

Conclusion:

The field of sedation is a multidisciplinary one that will continue to develop in the future. There is still a lack of documentation and fragmentation in the current regulation of RN sedation in the United States. Variation in board of nursing regulation, a lack of research on RN sedation practice, and a lack of RN sedation national standards are the three key controversies that are associated with the practice of RN sedation. The development of a cohesive approach that will guide registered nurse practice in the field of sedation will require the participation of researchers, clinicians who specialize in sedation, professional organizations, and regulatory bodies in collaborative efforts. In order to improve sedation care, it will be necessary to develop research on sedation practices and results in a variety of populations. This evidence can therefore be used to advise clinicians, educators, and policymakers.

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