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Featured Article

Creating a Distraction Simulation for Safe Medication Administration

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Abstract: New RNs face many challenges. Inarguably, safe medication administration may be one of the most important. Patients may experience a medication error at the rate of one each day; however, many errors are preventable. Researchers have concluded that medication errors are the result of system errors, including transcription errors, failure to adhere to established policies, inadequate staffing, and poor communication. At this time, little is known about the number of medication errors that nursing students and new RNs make each day or the role distractions play in error rates. Faculty created a medication simulation to help students understand the role visual and auditory environmental distractions may play in potential medication errors.

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New RNs face many challenges. Inarguably, safe medication administration may be one of the most important. The Institute of Medicine's (IOM, 2006a) report indicates that patients may experience a medication error at the rate of one each day; however, many errors are preventable. Other studies have concluded that medication errors are the result of system errors, including transcription errors, failure to adhere to established policies, inadequate staffing, and poor communication (Bernstam, et al., 2007; Institute for health, 2012; Leape, et al., 1995; Reason, 1990). At this time, little is known about the number of medication errors that nursing students and new RNs make each day or the role distractions play in error rates. Faculty at a midwestern university created a medication simulation, as part of standard course development, to help students understand the role visual and auditory environmental distractions may play in potential medication errors.

Experienced nurses understand the medication process is quite intricate and comprises several steps such as, prescribing, transcribing, dispensing, administering, and monitoring (Haring & Petrick, 2008). Student nurses may be more vulnerable to medication errors because of their lack of experience and a knowledge deficit about the environment in which medications are administered (Harding & Petrick, 2008; Wolf, Hicks, Altmiller & Bicknell, (2009).

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Wolf, Hicks and Serembus, (2006) examined 1,305 nursing students' medication error records and found that nursing students' lack of experience and environmental distractions were the principal elements contributing to medication errors. Manno (2006) reported that medication errors are one of the most common types of reported health care adverse events. Studies also indicate that following policies and protocols, and using new safety equipment, may reduce medication errors (Bernstam et al, 2007; Konkloski, Wright & Hammett, 2001). However, there is still much to learn about the many distractions nurses encounter each day while preparing and administering medications that may lead to errors. The National Priorities Partnership (NPP, 2010) found that, at a national level, nearly four million patients were subjected to medication errors at a cost of appropriately $16.4 billion annually. Sadly, 37% of preventable medications errors were a direct result of dosing mistakes and 11% stemmed from medication allergies and harmful drug interactions (NPP, 2010). Not surprising, 22% of errors happen while administering medications (NPP, 2010). Alarmingly, nearly 70% of medication errors occur during transition of care, whereas 12% occur during patient discharge (NPP, 2010). On a more positive side, e-prescribing reduced medication errors by as much as 85%, and the implementation and use of bar-coding systems showed a 51% error reduction (NPP, 2010). Computerized order entry programs are now wide spread in most hospitals and are designed to reduce the incidents of medication errors (Bates et al., 1998). The Institute of Medicine found that in acute care hospitals medication errors occurred in all phases of the medication process of procuring, prescribing, dispensing, administering, and monitoring; however, errors happen most frequently during the prescribing and administering phases (IOM, 2006a). Medication errors can lead to devastating personal and professional consequences. In 2010, an experienced RN gave 1.4 g of calcium, which is 10 times the correct dose, to an 8-month-old baby instead of the prescribed 140 mg. The infant died 5 days later. Although the RN had no known previously documented medication errors, her employer still chose to terminate her. The nurse's case was then investigated by the state nursing commission board where the RN admitted that she had been distracted because she was talking to another nurse while preparing the medication and therefore miscalculated the correct dose (Aleccia, 2011). Further reports indicate that the medicine error and news from the nursing commission's final report eventually contributed to the nurse's suicide (Aleccia, 2011). This nurse's heartbreaking case is an example of the impact medication errors that may have on patients and the individual nurses. Nursing students and new RNs will be confronted with a myriad of potential distractions and may benefit from participation in a controlled simulated setting to address strategies to reduce environmental distractions.

Key Points

- Conversations provoked distractions among student when preparing medications.
- Errors in medication preparation indicate students are not as good at multi-tasking as believed.
- Students must learn to identify strategies to reduce distractions when preparing and administering medications.

Why We Created the Simulation?

Medication errors have continued to increase, and studies are identifying that there may be many distractors impacting the nurses' ability to safely prepare and administer patients' medications (IOM, 2006a, 2006b; Treiber & Jones, 2012). The medication distraction simulation was piloted as a new simulation as part of ongoing standard course development, requiring no institutional review board review or approval. We developed the simulation as a class laboratory activity that all students were required to participate in before beginning their capstone clinical experience. Additionally, the simulation exercise was created to help students understand that distractions are always present in the professional practice environment and that they must learn to identify and overcome distractions to provide accurate medication administration. Consequently, we believed it was important to simulate common sounds and visual distractions in a health care environment while students prepared and planned to administer 10 predetermined medications. Faculty also wanted students to understand the risks in multitasking or the belief that they are experts in multitasking (Howe, 2010).

First Group of Students

The students were enrolled in the fall semester of the senior level Leadership/Management course before their capstone clinical experience. The simulation is part of the normal course development content and, therefore, all students in the course participated. There was no grade or pass/fail for the simulation activity but it was used as a learning experience.

What We Initially Did

Three nursing instructors along with the school of nursing simulation and technology staff initially recorded common sounds normally heard in a health care environment. These sounds included a telephone ringing, patient call light sounding, patients yelling for help, a code being announced, a metal object being dropped, sounds from a floor cleaner machine, and a few conversations. The volume of the sounds was varied at different times throughout the audio recording. The initial length of the audio recording was