Applying Principles of a Fair and Just Culture to a Student Scenario

Jane Barnsteiner, PhD, RN, FAAN; Joanne Disch, PhD, RN, FAAN; Michelle Johnson, EdD, MS, APRN, CPNP-PC; and Nancy Spector, PhD, RN, FAAN

ABSTRACT

Background: This article reviews national efforts toward promoting fair and just cultures in schools of nursing. A real-life vignette in which a nursing student made a medication error is presented, and the nursing program contacted the nursing regulatory body for advice on how to handle the situation. **Method:** A framework was used to analyze the causes of the error. Commentary is offered regarding how applying the principles of a fair and just culture could improve student performance and advance the school's culture to reflect one that was fair and just. **Results:** A fair and just culture requires a commitment of all leaders and faculty within a school of nursing. Administrators and faculty must recognize that errors are part of the learning process, that errors can be minimized but not eliminated, and that learning can occur from each incident to prevent similar occurrences in the future. **Conclusion:** Academic leaders must engage faculty, staff, and students in a dialogue about the principles of a fair and just culture to develop a tailored plan of action. [***J Nurs Educ*. 2023;62(3):139-145.**]

A nursing student who was in her second semester of nursing school had her first face-to-face clinical experience with patients during the coronavirus disease 2019 (COVID-19) pandemic. The nursing student was working with a staff nurse on a medical-surgical unit. Medications were obtained by the staff nurse for two patients in a room. The nurse stepped out of the room to address the needs of another patient. According to the nursing student, "A patient was begging for medication." The nursing student proceeded to administer medication to the patient without the staff nurse being present. When the staff nurse returned to the room, the staff nurse discovered the nursing student had administered the oral medication to the wrong patient. The nursing school's policy stipulates that medications are administered under the direct supervision of the instructor or an RN employed by the facility. The patient was not harmed, and incident reports were completed by both the school and the facility. The student, who was dismissed from the program, was granted reinstatement the following semester and was placed on a remediation plan.

Despite numerous efforts in the past 20 years, errors in health care settings continue to occur. A recent report from the Office of the Inspector General (2022) identified that 25% of patients experienced harm during their hospitalization in October 2018. Moreover, in 2018, medical errors were reported to be the third leading cause of death in the United States (Sipherd, 2018).

Establishing a fair and just culture as a foundation to safer care as evidenced by an organization's policies, practices, structures, and reward systems is a necessary prerequisite to safe care. Furthermore, schools of nursing must actively incorporate these same key elements in their organizations for nursing students to learn how to practice safely in today's health care environment. This article is intended to serve as a resource for faculty and others who may be asked to address student errors within their nursing programs. National efforts toward promoting fair and just cultures in schools of nursing are reviewed. Using the vignette described above, a framework for analyzing the causes of the error is presented, and commentary is offered on how applying the principles of a fair and just culture can help nursing students and faculty address such situations in the future.

FAIR AND JUST CULTURE

Dr. James Reason, a world-renowned leader in the field of human error, describes error as "a generic term to encompass all those occasions in which a planned sequence of mental or physical activities fails to achieve its intended outcome, and when these failures cannot be attributed to the intervention of some chance agency" (Reason, 1990, p. 9). Historically, a culture of secrecy, shame, and blame has been the norm in health care, with providers being held accountable for any error or near-miss, the belief being that the provider could have prevented errors through personal vigilance and attention to detail (Institute of Medicine, 2000). Moreover, the focus has been on who is at fault and what the punishment should be. Rather than being a forward-looking, improvement-oriented approach, this historical approach often was punitive and re-

Jane Barnsteiner, PhD, RN, FAAN, is a Professor Emerita, University of Pennsylvania School of Nursing, and the Editor, *Research and QI, American Journal of Nursing*. Joanne Disch, PhD, RN, FAAN, is a Professor ad Honorum, University of Minnesota School of Nursing. Michelle Johnson, EdD, MS, APRN, CPNP-PC, is the Director of Nursing Education, Nevada State Board of Nursing. Nancy Spector, PhD, RN, FAAN, is the Director of Regulatory Innovations, National Council of State Boards of Nursing.

Address correspondence to Jane Barnsteiner, PhD, RN, FAAN, 9815 US Highway 98 W, G902, Miramar Beach, FL 32550; email: barnstnr@nursing.upenn.edu.

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inforced the idea that individuals should not admit to errors or near-misses. Research suggests that penalizing individuals for errors beyond their control or when they are just human mistakes does not prevent errors from occurring in the future; rather, it prevents the reporting of errors (Cohen & Shastay, 2008; Famolaro et al., 2018; Woo & Avery, 2021).

Findings from the *Hospital Survey on Patient Safety Culture* by the Agency for Healthcare Research and Quality (Famolaro et al., 2018) suggest employees do not feel comfortable disclosing errors or near misses. For example, 39% of respondents worried that their mistakes were recorded in their personnel file; 50% of the participants indicated that when an event is reported, they felt the individual was being written up rather than the problem; and 53% believed their mistakes were held against them (Famolaro et al, 2018). These beliefs have been reinforced with the criminalization and guilty verdict for the medication error by RaDonda Vaught (Glatter et al., 2022).

In contrast, a just culture is defined as:

> [An] environment of trust and fairness where it is safe to report and learn from mistakes and system flaws. It is where we are clear about the difference between human error in complex systems and intentional unsafe acts. A fair and just culture is where reporting and learning are valued, people are encouraged and rewarded for providing essential safety-related information and leaders and human resource systems assure we achieve it (California Hospital Patient Safety Organization, n.d.).

A just culture is based on an atmosphere of trust, encouraging and rewarding people for identifying the sources of errors and for problem solving to prevent their recurrence. The emphasis is on effective teamwork that explores what went wrong rather than who is the problem. In a just culture, frontline providers are encouraged and willing to report errors and near misses, being confident they may speak safely regarding their own actions or those of others.

Errors in the delivery of health care are multifactorial and can occur at several levels, and there is acceptable and unacceptable behavior on the part of the clinician. Marx (2001) delineated errors as human errors, at-risk behaviors, and reckless behavior.

Human Errors

Human errors are inadvertent human mistakes arising from either individual gaps in knowledge or functioning that are beyond what could conceivably be assumed of a nurse (or student). In other words, they are not due to inadequate preparation or failure to act in a reasonable manner. Safety science informs us that humans can only know so much and that vigilance can prevent only so many errors (Henriksen et al., 2008). People are human and will make unintentional mistakes. The appropriate course of action in these situations involves consolation to the individual and assessing the situation (for personal and system-contributing factors) to prevent similar occurrences in the future by that individual or by others.

In many situations, an individual may make an error due to an underlying system or technology malfunction. These are errors that occur as the result of poor physical design, faulty medical devices, lack of consistency in procedures, poor communication, or inadequate staffing and deficiencies in education, training, orientation, and experience (Barnsteiner, 2022; Barnsteiner & Disch, 2012; Marx, 2001). Barnsteiner et al. (2022) described an incident in which a patient suffered severe burns to her buttock caused by a design flaw in a cauterizing device.

Approximately 95% of health care errors are system errors (Institute of Medicine, 2000; Marx, 2001; Reason, 1990); little has been done recently to replicate the work of these patient safety pioneers. One exception is the work of Eltaybani and colleagues (2019); in their study of critical care nurses, they found system-related factors were involved 84% of the time. Although there is no definitive number, system issues clearly are a major direct or contributing factor in health care errors. When system errors occur, the individuals involved should not be punished; rather, a thorough assessment of the precipitating factors should be undertaken and efforts targeted toward correcting these factors.

At-Risk Behaviors

At-risk behaviors are the second level of error and involve clinicians doing something inappropriate but with a genuine, although incorrect, belief that the action is inconsequential or justifiable (e.g., a nurse documents all assigned patient medications while in the medication room before administration due to time constraints or turns off the monitor alarms when caring for a patient). A related error occurs when the health care provider makes a risky decision, such as a "workaround," but does not believe or intend for this to result in harm. Despite the name, at-risk behaviors sometimes lead to actual errors with real harm and therefore warrant some individual accountability. Appropriate responses involve gathering information about the situation to prevent similar events in the future and coaching staff to raise awareness about the purpose and significance of the rules violated.

Reckless Behavior

The final level of error arises from individuals who act or make mistakes with impunity or reckless behavior. These types of errors occur by individuals who have complete disregard for policies and procedures, or who have total regard for their own intelligence and devise their own rules. In some extreme situations, individuals in this category intentionally cause harm to patients or others. These individuals must be held accountable for their actions through a disciplinary process, up to and including termination, or in the case of students, dismissal from the program. These types of errors are extremely rare (Marx, 2001).

Within a fair and just culture, there is recognition that mistakes are part of learning and professional practice. They are not to be taken lightly but neither should they be causes of shame or blame. Individuals should not be held accountable for system problems or failures. Reason (1990) and Marx (2001) emphasized the importance of establishing general agreement on demarcating culpable and nonculpable unsafe acts. Frankel (2006) notes that this notion of fairness is critical. Individuals care about both the fairness of the outcomes and the process of coming to a conclusion as to the cause of the error. They also acknowledge that they are accountable for maintaining

the environment and for delivering outstanding care. They know that they are accountable for their actions but will not be blamed for system faults in their work environment beyond their control. As Marx (2001) noted, "Few people are willing to come forward and admit to an error when they face the full force of their corporate disciplinary policy, a regulatory enforcement scheme, or our onerous tort liability system" (p. 3).

Response to an Error

Designing an appropriate response to an error is crucial. Penalizing nurses (or students) for unintentional mistakes or system errors has been shown to reduce the reporting of errors rather than the occurrence of errors. An integrative review of 42 research studies involving health care professionals found that (1) fear of repercussions of reporting medical errors is a barrier; (2) supportive safety leadership is central to reducing fear of error reporting; and (3) improving education on adverse event reporting, developing positive feedback when adverse events are reported, and developing nonpunitive error guidelines for health care professionals are needed (White & Delacroix, 2020). Two additional integrative reviews (Afaya et al., 2021; Woo & Avery, 2021) found reporting and reviewing medical errors represented a complex interplay among organizational barriers, such as complicated reporting systems or lack of feedback when reporting occurrences, and professional or individual factors, such as fear of reprisal. The need for organizational reform was emphasized.

When an error occurs, a common reaction is to call for education of those involved. This may be helpful but only if it is specifically targeted to the situation. In a study of 1,500 clinical nurses in one health system, despite identification of systemic problems during incident investigation, every plan of correction included education of nurses. If the system is contributing to risky behaviors, improvements should be developed by actively engaging clinical nurses in exploring ways to improve the faulty system. Education of the staff for system issues can be considered punitive, and retraining should be required only when there is evidence that a lack of knowledge contributed to the event (Barkell & Snyder, 2021).

Foslien-Nash and Reed (2020) suggested changing mindsets, not just punishing individuals, must be the focus of the response to errors. Clinical and academic leaders need to emphasize not only what to do but also how to do it. In addition, organizations and schools need to assess and address a "self-deception" gap (i.e., the belief that the clinical agency or school already has a fair and just culture and needs little improvement). Periodic assessments, open channels for communication and reporting, and trending of errors and near-misses and their causes need to be promoted. Creating the appropriate mind-set regarding errors and recommending the appropriate interventions when they occur requires that leaders at all levels are knowledgeable about and support the principles of a fair and just culture. In some instances, faculty need to be redirected toward understanding that overly harsh punishments are not helpful and actually may run contrary to contemporary safety science (Woo & Avery, 2021).

FAIR AND JUST CULTURES IN SCHOOLS OF NURSING

While participating in the national Quality and Safety Education for Nurses (QSEN) Institutes, Cronenwett et al. (2007, 2009) and Barnsteiner and Disch (2012) observed many faculty members described situations in their organizations that did not reflect the principles of a fair and just culture, such as disciplining students for errors beyond their control, meting out discipline before exploring the situation fully, and relying on personal judgment to assess a situation (e.g., "I can just tell when someone is lying"). They also heard some faculty state that their students "never made mistakes." The researchers recalled their own experiences in schools of nursing whereby a culture of silence usually existed or one in which faculty believed that "If you are a good faculty member, your students don't make mistakes," "If you talk about mistakes, you are condoning them," or "If you share information about a student's performance with other faculty members, you are influencing their thinking."

With funding from the National Council of State Boards of Nursing (NCSBN), Disch and Barnsteiner (2014) conducted a national study to collect and analyze information on current practices and policies for reporting and trending errors and near-misses by prelicensure nursing students in schools of nursing to establish an electronic reporting tool and a national data repository to track students' errors and near-misses. A web-based survey was sent to 1,667 schools with prelicensure programs; one third of the schools responded (n = 557). Findings revealed only 16% of nursing schools had a tool, policy, or both related to handling errors and near-misses; of the schools with a tool or policy, the vast majority did not reflect the principles of a fair and just culture. For example, students could receive a warning, fail a course, or be dismissed for minor errors in the simulation laboratory or for a situation in which the preceptor provided conflicting directions. Furthermore, in many schools, there was no consistent approach to discipline; instead, it often was left up to the individual faculty member as to what disciplinary action would be appropriate. Only 15% of the schools indicated they tracked or trended student errors for faculty to examine for any trends or appropriate changes in the curriculum.

Core Elements of Fair and Just Cultures in Schools of Nursing

Elements of a fair and just culture in a school of nursing include (1) recognition that errors are multifactorial, (2) policies that support a fair and just culture, and (3) building just culture principles into the practices and processes of daily work. Establishing a fair and just culture in a school of nursing requires an ongoing commitment and action by school leaders, faculty and students.

Necessary structures. Fundamental structural elements need to be in place when establishing and maintaining a fair and just culture. These elements include:

- An explicit philosophy statement that outlines expectations about accountability, evidence-based education, the role of students and faculty in ensuring safety and quality, and the commitment to a fair and just culture.
- Clear systems and processes for tracking and trending data on unusual incidents and occurrences.
- Policies and procedures that clearly spell out reckless and unacceptable behavior and appropriate actions that faculty should take.
- Opportunities to discuss errors and near-misses for both faculty and students, and to create needed change.
- Support for an open, respectful culture that invites new ideas, healthy disagreement, and shared decision making.

Attitudes. School leaders, faculty, and students may need to adopt new attitudes related to learning, professional practice, scope of responsibility, and collaboration. These are most successful when arising from discussions among faculty, between faculty and students, and between faculty and clinical partners. Nurses and students learning to become professional nurses may need to develop views that are quite different from those long held in health care. Some of these attitudes include:

- Nurses need to be as accountable for and prepared to contribute to a safe environment as for delivering quality nursing care.
- Mistakes are part of learning and professional practice.
- Nurses should be held accountable for their actions but not blamed for system faults beyond their control.
- Nurses who act recklessly may need disciplinary action up to and including termination and appearance before the nursing regulatory body (NRB).
- Threats of punishment do not prevent errors; instead, they prevent the reporting of errors

Knowledge. Teaching and leading within a fair and just culture requires comprehension of several new content areas, such as human factors, system complexity, high-reliability organizations, effective communication, and the QSEN competencies (Cronenwett et al., 2007, 2009). Additionally, new skills are required, such as effective teamwork within nursing and across interprofessional boundaries, new teaching pedagogies, and thoughtfully eliciting information from students about errors or near-misses that they have observed or experienced. Rather than jumping to conclusions about the cause of an event, asking five core questions is recommended to gather a full sense of the situation before a decision is made regarding the appropriate course of action:

1. What happened?
2. Has it happened before?
3. Could it happen again?
4. What caused it to happen?
5. Who should be told?

Reactions by Students to Fair and Just Cultures

Although much work is being done within schools of nursing, it is essential to gather input from students regarding their perceptions of current efforts. Results from two studies provide some insights. Bedgood and Mellot (2018) conducted an integrative review of 14 studies focusing on patient safety education in undergraduate nursing students to describe the state of safety education in academia. Four themes emerged:

- Students perceive patient safety education is important.
- Safety education in the curriculum is important.
- Students are afraid to speak up.
- Students perceive a lack of knowledge and support for speaking up.

More recently, Walker and colleagues (2020) studied prelicensure nursing student perceptions of just culture in 15 schools of nursing. Seventy-eight percent of respondents reported their program had a safety reporting system, and 15.4% reported they had been involved in a safety-related event; however, only 12% of those involved in a safety-related event submitted an error report. **Table 1** provides an analysis of the nursing student's error described in the vignette at the beginning of this article.

Inadvertent human errors arise from suboptimal individual functioning but without intention or the knowledge that a behavior is wrong or error-prone. Therefore, this should elicit a response that involves consolation and assessment of systemic changes to prevent such errors in the future. An analysis of errors should consider skill-based, rule-based, and knowledge-based contexts. According to the framework proposed by Rasmussen (as cited in Borghini et al., 2015), the terms skill, rule, and knowledge-based (S-R-K) refer to "the degree of conscious control exercised by the individual over his or her activities, depending on the degree of familiarity with the task and the environment" (p. 1). The learner in the vignette is new to clinical experiences. Using the S-R-K framework suggests students would be at the knowledge-based level (Borghini et al., 2015):

> At this level, the user carries out a task in an almost completely conscious manner. This would occur in a situation where a beginner is performing the task (e.g., a trainee at the beginning of its training) or where an expert is facing a completely novel situation. (p. 1)

Corresponding questions include whether the student had appropriate skills and relevant training, whether the risks were known, whether the rules were or should have been known, whether the expectations were clear, and whether there were relevant exceptional circumstances that justify or mitigate the violation. It is important to use a system when analyzing errors and near misses. In this situation, the five core questions were used as the framework for analyzing the causes of the error and then recommending improvements. Other options include using the steps of root cause analysis (NCSBN, 2021) or the more detailed Adverse Event Decision Pathway (Martin & Reneau, 2021), which was designed to assist nurse administrators to evaluate adverse events.

THE FIVE CORE QUESTIONS

Question 1: What Happened?

To begin with, what happened in the situation must be known, along with any mitigating or aggravating circumstances. In this situation the student gave the medication to the wrong patient, and the student did not follow the school's medication administration policy. Additional questions would

be to ask the student what she had understood about the policy and whether she been prepared for medication administration that day. A mitigating factor is that this was the student's first semester working directly with patients because the COVID-19 pandemic prevented her from participating in any clinical experiences during her first semester. Additionally, the student was put in a vulnerable position given that the patient was begging for medication. A systems consideration was that neither the nurse nor the instructor were available to guide the student. Also related to system issues would be understanding the institution's policy for administering medication. The final consideration would be whether it was common practice to leave medications unattended at a patient's bedside when the nurse left the room.

Question 2: Has It Happened Before?

Particularly because of the type of systems issues, it would be important for both the school and the practice facility to determine whether this situation had occurred previously. Although this situation happened to this particular student, one wonders if other students could have made similar errors. Why did the student think she could administer the medications in the absence of her instructor, and what kind of instructions do students receive about medication administration? Likewise, for the practice facility, why did the nurse leave the room, and why were the medications drawn up but not administered?

Question 3: Could It Happen Again?

This question really is asking whether changes have been made to prevent this type of error from happening again. The educational institution must ask whether the training on medication administration is sufficient as well as why the faculty member was not accessible. Perhaps the program should consider a new policy where medications are administered only under the supervision of the clinical instructor. Likewise, the program should review its policies on what constitutes an error or near-miss, and how they are to be addressed. There should be clear guidelines on how to report errors and near-misses and who should receive these reports. These are areas where curricular and institutional improvements could be made. With this particular event and student, the nursing program must ask what kind of review and education is needed. The program also must determine what type of support the student received, given the mitigating circumstances and the systems concerns. The practice facility should review why the nurse left a novice student alone with medications. The nurse should gain an understanding of the responsibilities involved with retrieving a medication and then leaving the medication and the student behind to respond to another patient's need. Did the nurse adequately understand the level of student she was precepting?

Question 4: What Caused It to Happen?

Many factors were inherent in this error. The pandemic prevented the student from participating in beginning clinical experiences; thus, she was more of a novice than typical students in their second semester. Being inexperienced and without any guidance, she was caring for a patient who was begging for her medication. Although the student was stressed in this vulnerable situation, she still should have verified the patient's identify with two methods of identification before giving the medication. Is there an education component related to medication administration that is inadequate in the program? This needs to be investigated. Neither the clinical instructor nor the nurse were with the student when she gave the medication, even though this is a school policy. This lack of guidance with a beginning student administering medication seemed to be the most important element of this scenario. Mock scenarios in skills laboratories can help students understand not only the preferred courses of action in their practice, but also how to respond to unexpected deviations in the setting.

TABLE 1
Analysis of the Occurrence

With system issues, there appear to be multiple points:

- The medications were drawn up but were not administered immediately
- The student was under the supervision of the staff nurse, and it appears from scenario that there was no review by the staff nurse of the medications that each patient was supposed to receive or the purpose of the medication
- The staff nurse left medications in the room as she was called away—it is known that a large number of medication errors are caused by interruptions
- The beginning clinical student was put in a vulnerable position by being left alone with the patient requesting medications. Had the staff nurse given the student any instructions before leaving the room?
- What kind of debriefing took place with the staff nurse, the student, the instructor, and the nurse manager after this event? Did the student and staff nurse complete the occurrence report together?

With the student:

- What did the student understand about the medication administration policy?
- How had the student been prepared for medication administration on this clinical day?
- Why did the student think she could give the medications in the absence of the staff nurse or instructor?
- What education and review should be conducted with the student?

Question 5: Who Should Be Told?

Occurrence reports were completed by both the facility and the nursing program. The student and staff nurse should have completed the incident reports together, and there should have been a debriefing with the staff nurse, the student, and the clinical instructor. It would be important for the nursing program

and the clinical facility to review this error together so there is an understanding about what happened and to determine what preventative measures should be taken to ensure such errors would not happen again, from both the academic and clinical side. This mutual understanding would promote a collaborative relationship between the nursing program and practice facility and ensure there would be no blame for what happened. In addition, the program contacted the nursing review board for advice. Nursing review boards do not require reports for every error or near-miss in nursing programs but often are used as resources in these kinds of situations.

In the vignette presented here, the student appeared to have had no intention of violating a protocol and expressed contrition during a meeting about the event. Thus, the response should have focused primarily on consolation in the form of recognizing and affirming that she had been put in a tough situation. At the same time, this would have provided an opportunity to coach the student about handling such conflicts, including strategies for diplomatically addressing the clinical preceptor, such as perhaps seeking to clarify the instructions, without being perceived as being insubordinate. Additionally, reviewing the 10 rights on medication administration (Edwards & Axe, 2015) would be warranted.

In the vignette, lack of knowledge and lack of awareness were the causes of the error, and a discussion about both could be used to debrief the student. Using the five core questions can be valuable for faculty and practice facilities when analyzing errors or near misses. Clearly, the outcome would be different, depending on the situation. In this vignette, there were multiple system issues as well as mitigating circumstances that called for a supportive response by faculty. However, if the student had been in her last semester and had been up all night studying for an examination and had made this error, the recommended outcome may have been different.

NRBs are not routinely notified of nursing students' medication or other errors. NRBs can provide information related to best practices to assist nursing programs in addressing such errors in a fair and justice manner. From a regulatory perspective, NRBs use evidence-based guidelines (Spector et al., 2020) when approving nursing programs. One of the guidelines calls for programs to have policies and procedures in place for tracking student errors and near-misses during clinical experiences. Faculty are encouraged to collect these data and make improvements as necessary. For example, faculty may decide to revise how they teach calculations, or they may determine that they need guidelines for teaching their students about root cause analyses. The NCSBN has resources available to assist faculty as they track and analyze student errors and near misses (NCSBN, 2021).These resources include the Safe Student Reports, a national data repository, which allows schools to benchmark their data with national data.

Within a fair and just culture framework, this vignette reflects a situation where education is warranted. In some schools, a best practice would be to conduct a postconference discussion for all students to learn from this and for all students to think about how they can respond when put in vulnerable situations. Lastly, it is recommended that someone from the faculty reach out to such students to offer support and to ensure that there is a transition plan for returning back to school the following fall, if they desire. This is a best practice for helping smooth the way for such students so they are not shamed or stigmatized.

CONCLUSION

Achieving a fair and just culture requires a commitment on the part of all leaders and faculty within a school of nursing. There must be recognition that errors are part of the learning process, that they can be minimized but not eliminated, and that learning can occur from each incident to prevent similar occurrences in the future. In addition to recognition, there needs to be active engagement in creating changes in policies, practices, and culture. Clear lines of accountability, transparency, and communication are essential. The first step is for leaders to engage the school community (e.g., faculty, staff, and students) in a dialogue about the principles of a fair and just culture, and to conduct an assessment regarding current status. From that initial work, a specific plan of action with priorities can be developed and tailored to a particular school of nursing.

REFERENCES

Afaya, A., Konlan, K. D., & Kim Do, H. (2021). Improving patient safety through identifying barriers to reporting medication administration errors among nurses: An integrative review. *BMC Health Services Research, 21*(1), 1156. https://doi.org/10.1186/s12913-021-07187-5 PMID:34696788

Barkell, N. P., & Snyder, S. S. (2021). Just culture in healthcare: An integrative review. *Nursing Forum, 56*(1), 103–111. https://doi.org/10.1111/nuf.12525 PMID:33231884

Barnsteiner, J. (2022). Safety. In G. Sherwood & J. Barnsteiner (Eds.), *Quality and safety in nursing: A competency based approach to improving outcomes* (3rd ed., pp. 213–238). Wiley Blackwell.

Barnsteiner, J., & Disch, J. (2012). A just culture for nurses and nursing students. *Nursing Clinics of North America, 47*(3), 407–416. https://doi.org/10.1016/j.cnur.2012.05.005 PMID:22920431

Barnsteiner, J., & Disch, J. (2017). Creating a fair and just culture in schools of nursing. *The American Journal of Nursing, 117*(11), 42–48. https://doi.org/10.1097/01.NAJ.0000526747.84173.97 PMID:29076855

Barnsteiner, J., Hays, D., & Kruse, J. (2022). *Building a framework for fair and just cultures in nursing education and practice*. Oakland University School of Nursing. Faculty development presentation.

Bedgood, A. L., & Mellott, S. (2018). The role of education in developing a culture of safety through the perceptions of undergraduate nursing students: An integrative literature review. *Journal of Patient Safety, 17*(8), e1530–1536. https://doi.org/10.1097/PTS.0000000000000548 PMID:30383621

Borghini, G., Aricò, P., Di Flumeri, G., Graziani, I., Colosimo, A., Salinari, S., Babiloni, F., Imbert, J. P., Granger, G., Benhacene, R., Golfetti, A., Bonelli, S., & Pozzi, F. (2015, December 1-3). Skill, rule and knowledge-based behaviour detection by means of ATCOs' brain activity. SID 2015, 5th SESAR Innovation Days, December 2015, Bologna, Italy.

California Hospital Patient Safety Organization. (n.d.). *Strategies for moving to a fair and just culture*. https://www.chpso.org/newsletter/strategies-moving-fair-and-just-culture

Cohen, H., & Shastay, A. D. (2008). Getting to the root of medication errors. *Nursing, 38*(12):39-47. https://doi.org/10.1097/01.NURSE.0000342031.85246.a1 PMID:19033987

Cronenwett, L., Sherwood, G., Barnsteiner, J., Disch, J., Johnson, J., Mitchell, P., Sullivan, D. T., & Warren, J. (2007). Quality and Safety Education for Nurses. *Nursing Outlook, 55*(3), 122–131. https://doi.org/10.1016/j.outlook.2007.02.006 PMID:17524799

Cronenwett, L., Sherwood, G., Pohl, J., Barnsteiner, J., Moore, S., Sullivan, D. T., Ward, D., & Warren, J. (2009). Quality and safety education for advanced nursing practice. *Nursing Outlook, 57*(6), 338–348. https://

doi.org/10.1016/j.outlook.2009.07.009 PMID:19942035
Disch, J., & Barnsteiner, J. (2014). Developing a reporting and tracking tool for nursing student errors and near misses. *Journal of Nursing Regulation, 5*(1), 4–10. https://doi.org/10.1016/S2155-8256(15)30093-4
Edwards, S., & Axe, S. (2015). The 10 'R's' of safe multidisciplinary drug administration. *Nurse Prescribing, 13*(8), 398–406. https://doi.org/10.12968/npre.2015.13.8.398
Eltaybani, S., Mohamed, N., & Abdelwareth, M. (2019). Nature of nursing errors and their contributing factors in intensive care units. *Nursing in Critical Care, 24*(1), 47–54. https://doi.org/10.1111/nicc.12350 PMID:29701274
Famolaro, T., Yount, N., Hare, R., Thornton, S., Meadows, K., Fan, L., Birch, J., & Sorra, J. (2018). *Hospital Survey on Patient Safety Culture: 2018 user database report*. Agency for Healthcare Research and Quality. https://www.ahrq.gov/sites/default/files/wysiwyg/sops/quality-patient-safety/patientsafetyculture/2018hospitalsopsreport.pdf
Foslien-Nash, C., & Reed, B. (2020). Just culture is not "just" culture—It's shifting mindset. *Military Medicine, 185*(Suppl. 3), 52–57. https://doi.org/10.1093/milmed/usaa143 PMID:33002145
Frankel, A.S., Leonard, M. W., & Denham, C. R. (2006). Fair and just culture, team behavior, and leadership engagement: The tools to achieve high reliability. *Health Services Research, 41*(4 Pt 2):1690-1709. doi:10.1111/j.1475-6773.2006.00572.x PMID:16898986
Glatter, R. D., Ranney, M. L., & Barnsteiner, J. (2022, April 13). Are all medical errors now crimes? The nurse Vaught verdict. Medscape Emergency Medicine. https://www.medscape.com/viewarticle/971634?src=soc_tw_share
Henriksen, K., Dayton, E., Keyes, M. A., Carayon, P., Hughes, R. (2008). *Understanding adverse events: A human factors framework*. Agency for Healthcare Research and Quality. PMID:21328766 https://www.ncbi.nlm.nih.gov/books/NBK2666/pdf/Bookshelf_NBK2666.pdf
Institute of Medicine. (2000). *To err is human: Building a safer health system*. National Academies Press.
Martin, B., & Reneau, K. (2021). Evaluating the adverse event decision pathway: A survey of Canadian nurse leaders. *Journal of Nursing Regulation, 12*(1), 71–77. https://doi.org/10.1016/S2155-8256(21)00020-X
Marx, D. (2001). *Patient safety and the "just culture": A primer for health care executives*. https://psnet.ahrq.gov/issue/patient-safety-and-just-culture-primer-health-care-executives
National Council of State Boards of Nursing. (2021). *Safe student reports (SSR) research study*. https://www.ncsbn.org/safe-student-reports.htm
U.S. Department of Office of Health & Human Services, Inspector General. (2022). *Adverse events in hospitals: A quarter of Medicare patients experienced harm in October 2018*. https://oig.hhs.gov/oei/reports/OEI-06-18-00400.pdf
Reason, J. (1990). *Human error*. Cambridge: Cambridge University Press, 1990. http://patientsafetyed.duhs.duke.edu/module_e/definitions.html
Sipherd, R. (2018). *The third-leading cause of death in U.S. most doctors don't want you to know about*. https://www.cnbc.com/2018/02/22/medical-errors-third-leading-cause-of-death-in-america.html.
Spector, N., Silvestre, J., Alexander, M., Martin, B., Hooper, J., Squires, A., & Ojemeni, M. (2020). NCSBN regulatory guidelines and evidence-based quality indicators for nursing education programs. *Journal of Nursing Regulation, 11*(2, Suppl.), S1–S64. https://doi.org/10.1016/S2155-8256(20)30075-2
Walker, D., Altmiller, G., Hromadik, L., Barkell, N., Barker, N., Boyd, T., Compton, M., Cook, P., Curia, M., Hays, D., Flexner, R., Jordan, J., Jowell, V., Kaulback, M., Magpantay-Monroe, E., Rudolph, B., Toothaker, R., Vottero, B., & Wallace, S. (2020). Nursing students' perceptions of just culture in nursing programs: A multisite study. *Nurse Educator, 45*(3), 133–138. https://doi.org/10.1097/NNE.0000000000000739 PMID:32310625
White, R. M., & Delacroix, R. (2020). Second victim phenomenon: Is 'just culture' a reality? An integrative review. *Applied Nursing Research, 56,* 151319. Advance online publication. https://doi.org/10.1016/j.apnr.2020.151319 PMID:32868148
Woo, M. W. J., & Avery, M. J. (2021). Nurses' experiences in voluntary error reporting: An integrative literature review. *International Journal of Nursing Sciences, 8,* 453–469. https://doi.org/10.1016/j.ijnss.2021.07.004 PMID:34631996