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Improving the Safety Knowledge of Associate Degree Nursing Students

Melissa Jones

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Improving the Safety Knowledge of Associate Degree Nursing Students

Abstract

The purpose of this study was to implement the Quality and Safety Education for Nurses (QSEN) safety component using several teaching strategies during didactic experiences to improve the safety knowledge and competency of first-year students enrolled in an associate degree nursing program. As a metric assessment, aggregate scores of the QSEN safety areas on the Health Educational System, Inc © (HESI) exam were compared to the previous year's aggregate scores on the same examination. The results indicated an improvement in scores in students who participated in the implemented intervention. Statistical analysis suggests the intervention improved the participant's knowledge and acquisition of safety.

Key Words

Patient safety

QSEN

HESI scores

Associate Degree Nursing

Improving the Safety Knowledge of Associate Degree Nursing Students

Introduction

An essential goal in nursing practice is the provision of safe, effective, and quality nursing care. As the largest group of caregivers in health care, the nursing profession is an integral component of meeting the demands of safe and quality care. Stakeholders such as clinical agencies and hospital organizations expect competent and knowledgeable nurses who can make sound decisions that will positively impact patient outcomes. However, a significant threat to patient safety is the pervasiveness of preventable medical errors, many of which involve new graduate nurses. Nurse educators remain challenged to develop effective teaching methods to address this on-going dilemma.

Literature Review

An astounding number of preventable medical errors cause thousands of patient deaths annually (Murray et al., 2019). New graduate nurses are a primary contributor to these medical errors in today's health care environment. The most recent research indicates 50% of medical errors involve a new nurse, and over 65% of these errors are a result of clinical judgment (NCSBN, 2018). Although the Institute of Medicine (IOM) has called for a transformation in nursing education to enhance safe practice and improve patient outcomes, nursing schools continue to graduate students who lack the skills and knowledge to provide safe patient care (IOM, 2011; NCSBN, 2018).

Because medical errors are often under-reported, the prevalence of this problem may be under-estimated, minimizing the true scope of the issue in the literature and research (Murray, et al., 2019; Dirk et al., 2019). Evidence from the literature also suggests undergraduate nursing programs fail to adequately prepare students for safe

nursing practice (Missen et al., 2016). Faculty may also experience barriers such as time and content overload that prevent their ability to consistently infuse safety content into their teaching methods. Therefore, the need to strengthen safety knowledge in nursing practice remains a key concern in nursing curricula. As an intervention to improve safe practice in undergraduate nursing students, the purpose of this study was to implement the QSEN safety component in an associate degree nursing program.

The QSEN competencies were developed in response to the Institute of Medicine's (IOM) findings related to the increasing prevalence of medical errors (Altmiller & Hopkins-Pepe, 2019). Implementing the safety competency was the primary focus of this project as it aligns with the problems surrounding the prevalence of medical errors in the health care environment. The QSEN safety component definition includes both individual and system factors with the goal of reducing harm to patients and providers. The literature has demonstrated the effectiveness of implementing QSEN interventions in nursing curricula and the positive impacts on student acquisition of knowledge and performance in nursing practice (Curcio, 2021). As a result, the following PICOT question was developed to guide the study: Will the implementation of the QSEN safety competency into the didactic experiences of first-year associate degree nursing students improve their knowledge and safety in nursing practice?

Methods

This study was conducted at a community college in the southeastern United States. Approval to perform the study was received from the community college's administration and the university institutional review board of the study's investigator. A total of 42 students participated in the intervention. These first-year nursing students were

enrolled in the course titled Health-Illness Concepts during their second semester of study. The QSEN safety teaching strategies were implemented as activities within the curriculum to meet the objectives of the course. All students enrolled in the course were required to participate in the intervention to meet the requirements of the course.

Instrumentation

The community college administers the HESI© standardized examination to students within each nursing course throughout the program. This examination is routinely administered at the close of each semester as one measurement of attainment of course objectives within the nursing curriculum. The HESI© examination utilized for this study is aligned with the content taught during each in the Health-Illness Concepts course. HESI examinations are valid predictors of success on the NCLEX-RN examination (Sosa & Sethares, 2015). The assessed metric for this study was the use of aggregate scores related to all areas of QSEN safety on the examination. The HESI© scores were void of any student identifiers. Using a pre and post-test design, these aggregate scores were compared to the previous year's scores of students who did not receive the intervention.

Procedure

The project implementation occurred during an eight-week period beginning in January through March 2021. Multiple activities were utilized to implement the intervention. These teaching strategies included providing all participants with a document outlining the knowledge, skills, and attitudes (KSAs) for the QSEN safety competency. The definitions within the document were reviewed and discussed with the participants by the course faculty. Study participants also completed the Institute of

Health Improvement's patient safety modules. These modules provided an overview of safety from both an individual and system perspective. Other teaching methods to implement the intervention included:

- Utilizing the IHI SBAR tool
- Analyzing three patient stories of medical errors
- Classroom of errors activity
- Medication Incident Reporting

Prior to implementing the activities, a meeting was held with the participating faculty administering the intervention to provide an in-depth review of the QSEN safety competency. Each faculty member completed the American Association of Colleges of Nursing QSEN Safety modules webinar prior to the start of the intervention. To establish consistency in the implementation and utilization of each teaching strategy during the study period, the project leader provided a thorough review and discussion of each strategy to be implemented during the initial meetings. This process enhanced cohesion among faculty in the delivery of the safety intervention.

The intervention was administered during an eight-week period through the various teaching strategies to all student enrolled in the nursing course. During the implementation period, the project leader met weekly with the participating faculty to review each strategy prior to and after application. This process not only reinforced the need to maintain consistency in delivering the intervention but also provided the faculty the opportunity to bring any questions or concerns to the project leader during the study process. While the intervention period was mostly uneventful, the team did meet with challenges related to the COVID pandemic and inclement weather causing cancelled

classes. However, all strategies were implemented successfully by the close of the study period.

Quantitative Results and Analysis

The 2021 HESI© scores were utilized to evaluate the effectiveness of the intervention. These scores were compared to the 2020 scores consisting of first-year associate degree nursing students who did not receive the intervention. Students who participated in the intervention demonstrated higher aggregate scores in the Quality and Safety Education for Nurses (QSEN) safety areas of the HESI exam versus the cohort of students who did not receive the intervention. In addition to the improvement in the aggregate scores, an increase was noted in each of the four individual QSEN safety category scores.

Table 1

HESI Scores

HESI QSEN Category	Pre-Intervention n=32	Post Intervention n=42
Safety and Quality	807	810
Basic Safety Design	803	840
Culture of Safety	819	842
National Patient Safety	795	854
Mean	806	836.5

Note. Score results comparing two cohort group of first-year, second semester students.

An excel software spreadsheet was utilized to compute a statistical analysis of the data using the *t* test (two tailed) and an alpha level of 0.05 to compare the intervention group to the non-intervention group. A p-value of 0.039 was obtained from this analysis which further suggests that implementing the QSEN safety component through teaching strategies improved the study participant's safety knowledge.

Limitations

The program met the ultimate outcome to improve the safety knowledge of first-year nursing students by implementing the QSEN safety competency using teaching strategies. However, the program will require additional adjustments during the on-going evaluation process to maintain sustainability. Since the study contained no qualitative data collection methods, the program can be improved upon by incorporating efforts to collect qualitative data in the future. This feedback will be obtained from the faculty and students impacted by the program; qualitative data analysis will provide an additional source of rich information as a means of program evaluation and add to the overall continuous process improvement of the program.

An additional limitation is the intervention was implemented during the COVID-19 epidemic. Students and faculty were impacted by rare incidents of adjustments in class schedules which resulted in additional time and effort to implement all the teaching strategies prior to the close of the study period. Also of note, the project leader is a member of the faculty and participated in delivery of the intervention during the study period.

Conclusion

This study adds to the growing body of evidence supporting the implementation of the QSEN of safety as an effective strategy to improve safety knowledge and skills of nursing students. As a result of the program clearly achieving its goals, discussions with stakeholders will include ways to implement the program across all semesters of the community college's nursing curriculum. Planning sessions regarding sustaining and maintaining the program are occurring; success of the program hinders upon creating an

environment in which faculty and students realize the impact the program results can have on patient safety. While this study focused on teaching strategies during didactic experiences to improve students' knowledge related to patient safety, the project team also seeks to identify additional ways to implement the intervention during experiential activities in simulation and clinical further demonstrating the application of safe nursing practice.

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