Portrait of the Role Nursing Institutions in the Implementation of Patient Safety by Nursing Students in 21st Century: A Literature Review

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Abstract

Background: The level of students' understanding of the knowledge of patient safety concepts in infection prevention and control and awareness of treatment is in the low category. Clinical education that provides problem-based learning models in real areas helps students to better understand patient safety. This study is designed to analyze the evaluation and reflection of the role of nursing education institutions in the achievement of patient safety competencies by nursing students.
Method: "Searching for articles in research journals is obtained from Sciencedirect, Ebscohost, Garuda, Proquest and Scopus. As many as 228 articles were obtained consisting of nursing journals and health journals with the keywords clinical education, competence, and patient safety. After that, the screening process was carried out based on the inclusion criteria and obtained 25 articles that met the criteria. "
Results: the results of the evaluation show that there is a big role in educational institutions in designing curricula, learning models, and clinical education models in an effort to achieve patient safety competencies in nursing students.
Conclusion: the learning model about patient safety organized by many educational institutions is considered ineffective in producing the achievement of patient safety competencies for nursing students. This makes it necessary to develop models, reform the patient safety curriculum that is embedded in real areas in clinical education practice

Key Word: *Nursing Institutions, Patient Safety, Nursing Students*

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INTRODUCTION

Patient safety incidents are still a trend of global problems in health service delivery (1). Patient safety problems caused by nursing students can have various adverse effects on patients (2). This condition encourages educational institutions and students in them to play a role in reducing patient safety incidents (2).

Educational institutions become a gateway for students to contribute to patient safety standard programs (3). Nursing educational institutions play a role in instilling a learning process that teaches patient safety materials (4). Educational institutions have a major role in securing patient safety in multifactor health care environments (5). In this role, nursing education institutions include patient safety curricula in their educational curricula (6). The basis of knowledge, skills, behavior, and attitudes relevant to the scientific field of patient safety needs to be innovated in the educational process so that students get competent skills (7). Knowledge, skills, behavior, and attitudes are factors that affect the application of patient safety (8)

The role of students and nursing education institutions in patient safety that is not optimal will cause an impact or problem on patient safety (9). (7) notes that the understanding of the knowledge of students who are in the process of nursing education on the concept of patient safety in infection prevention and control as well as awareness of the safety of treatment is still low. (1)

mentions that a problem-based learning approach in real life in the area of clinical education helps in patient safety education. (10)explained that knowledge management-based patient safety models can improve the competence of nursing students. (11) sees that curriculum changes in educational institutions can be carried out, one of which is through a practical community-based knowledge management approach (12) & (13). Knowledge management provides better practice experience and patient safety competencies for nurses (14), (15).

The aim of the study and research questions

Research that evaluates clinical education in educational institutions in improving patient safety competence in nursing students is still lacking. Based on the background of this problem, it is necessary to carry out further research on the implementation of patient safety implementation by students in health services. This systematic review was conducted to identify, evaluate how student safety was performed and to pinpoint gaps in the study. The specific research question is how the effectiveness of the participation of nursing education institutions in achieving the patient safety competencies of nursing students?

Design

This systematic review is carried out through stages in accordance with the PRISMA guidelines, namely (1) determining research questions, (2) determining search aspects that are in accordance with keywords and consultation with information specialists in the area of health sciences, (3) make a plan search strategies, (4) determine the appropriate inclusion and exclusion criteria, (5) conduct a systematic search on electronic databases, (6) select eligible research articles and (7) carry out an assessment of the quality of the studies selected for review.

Search strategy and inclusion criteria

The literature search was started by using the keywords clinical education, patient safety, nurse student, community of practice. The databases used were Sciencedirect, Ebsco, Garuda, Proquest and Scopus with inclusion criteria, namely searches limited to full text from 2019 to 2021.

Search result

Obtained articles as many as 228 literature sources, 57 sources from Ebscohost, 27 from Garuda, 69 from Proquest, 39 sources from Science Direct, and 36 sources from Scopus. Several articles are then screened, namely by reading at the core of the journal, focusing on the topic, the suitability of the journal content, the suitability of known sources from the abstract, keywords, introduction, and conclusion. In the end, we obtained 25 articles used in this literature review.

RESEARCH METHODS
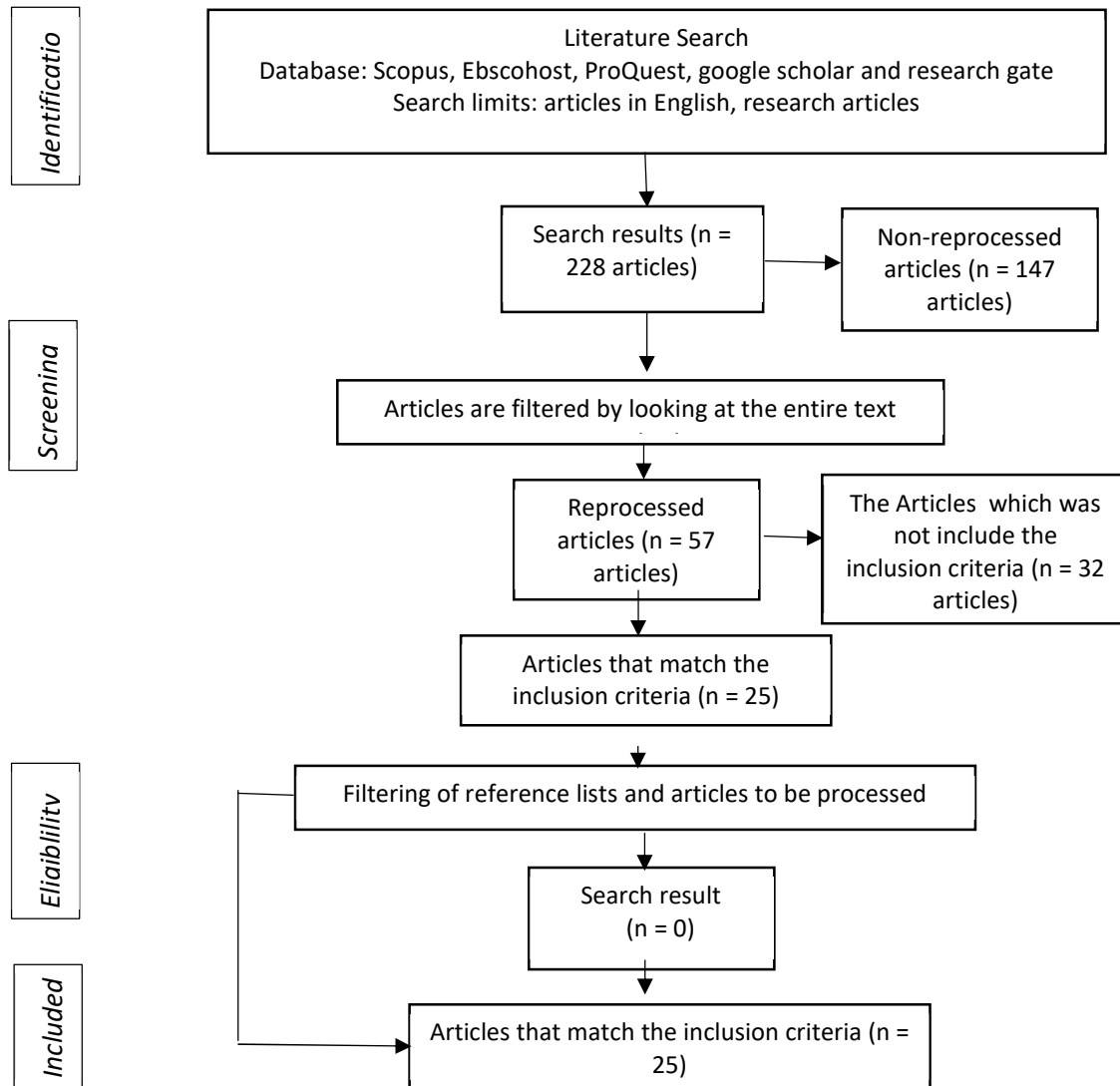
Figure 1. PRISMA Flow Chart *(Moher et al. 2009)*

Data Extraction

The data extraction process was carried out by considering several important aspects of the core of the research which consisted of; author and year of publication, aim of the study, the number of sample size, instruments, method, outcomes and conclusion which can be found in table 2. Methods in each article are identified, categorized into themes, summarized and synthesized systematically.

Table 2.

NO	Author, years	Aim	Research Design	Sample size	Instrument	Result	Conclusion
1	(7)	To test the level of understanding of the knowledge of key patient safety concepts in nursing students in the last semester	Crossectional study	1981 nursing students from 23 educational institutions	Questionnaire	The results showed that the level of knowledge of the respondents, namely nursing students in the field of patient center care and communication therapy, achieved the highest score, while the lowest score was in the domain of infection prevention and control and awareness of the safety of treatment	Nurses have an important role in providing examples of the application of patient safety by students, students need to be well prepared in implementing safe and effective clinical education, and there is a need for curriculum reform to improve patient safety.
2	(1)	to conduct an assessment or a portrait of student evaluations about the implementation of patient safety education in nursing institutions that are included in the curriculum	Crosssectionalstudy	338 Students	Questionnaire	The results showed that 33.40% of interns and 51.10% of nursing students stated that the patient safety education curriculum had been obtained by students. Meanwhile, 48.2% of midwifery students and 32.1% of health officer students stated that patient safety courses were given in a small number in their curriculum. Nearly 60% of students of all respondents indicated that their average level of knowledge about patient safety was in the "moderate" and "bad" categories.	Pendidikan tentang keselamatan pasien pada mahasiswa kurang emphasized by nursing education institutions. The students self-reported that they felt the level of knowledge about patient safety was mostly in the low category. Learning in the real clinical practice area and problem-based learning approaches are learning methods that are fast enough for students
3	(14)	To carry out an assessment of the attainment	Descriptive, crossectional design.	829 nursing students	Questionnaire	The results showed that as many as 61.5% - 76.5% of respondents from the health education professionals	Nursing students who come from Saudi countries have a positive perception of their

		of patient safety competencies by nursing students' baccalaureate during clinical training held at six Saudi state universities				agreed with learning patient safety materials. Human and environmental factors are the main competencies possessed by students while working in teams is the lowest competency possessed in the implementation of patient safety. There are significant differences in competencies of patient safety between different universities. Male students have higher competence in the aspect of teamwork than female students. Students running the internship program had significantly higher differences in competency levels across all component of health professional students in the third and fourth year levels education in the patient safety survey	patient safety competencies. There is a significant difference in the achievement of nursing student patient safety competencies based on differences in college origin, gender and study year.
4	(9)	To identify the factors that influence the achievement of patient safety competencies by students and to assess the strengths and weaknesses of Chinese nursing students to get the	cross-sectional	732 Chinese undergraduate nursing students	Questionnaire	Undergraduate nursing students who come from China are confident in their clinical safety skills in the moderate category. But in understanding patient safety material mastery in sociocultural aspects, including effective communication and understanding human and environmental factors in the category of lack of confidence. There are significant differences in the achievement of patient safety competencies based on regional	The results of this study indicate that there is a better understanding of patient safety competencies among final year nursing students in China. Research results can become a reference for nursing educators or health care organizations to cultivate and improve patient safety competence by establishing documented policies or by

		predicate of competence in the implementation of patient safety.			differences, patient safety learning styles (independent study and classroom theory studies), independent assessment of the level of patient safety competence and experiences in the occurrence of adverse events with p value <0.05. These factors contributed to nearly 15% of the total variance in the patient safety competency score (adjusted R 2 = 0.15, p = 0.00).	improving the efficacy of intervention.
5	(15)	To explore views on nurse educator perspectives on curriculum change and investigate how current patient safety science can be taught in pre-registered undergraduate nursing student education programs in South Korea	Descriptive study	80 nurse educators working in 16 regions throughout Korea.	A paper-and-pencil survey	There is little consistency found in approaches to teaching patient safety to nursing students. Learning about patient safety topics is studied in a variety of nursing courses, and material on patient safety education is limited in teaching hours and in the breadth of content. The majority of respondents stated that additional support in studying patient safety is required, including in the national standard curriculum for patient safety education for nursing students.	A new approach is carried out to teach patient safety science in nursing education to undergraduate nursing students in Korea. Overall, patient safety education is limited and provided through a fragmented approach with little attention to systems, workplace design or human issues. This is necessary to develop critical reasoning and skills to support patient safety.

RESULTS

In this systematic review, there were 6 articles that were included, namely cross sectional research. These articles were published from 2019 to 2021 in several countries. Respondents for research articles were nursing students with a total sample of 80-1981.

Several studies have shown that the participation of educational institutions in their efforts to achieve patient safety competence in nursing students is in the low category. It is known from several studies analyzed that as many as 60% of apprenticed students reported that their average

level of knowledge was in the moderate category (1). Even though in the field of patient safety, students should have a good level of knowledge (1). Knowledge of patient safety in 23 educational institutions is also known to be low. From an average score of 65.23%, the lowest score is on infection prevention and control and medication safety (7).

The results showed that the achievement of patient safety competencies carried out by nursing students at the professional level was stated to be better than students who were still practicing theory in educational institutions (16).

There are significant differences in the achievement of competence in implementing patient safety by students in different areas and different learning styles in learning models in academics and in the clinical education area. This is indicated by the value (p <0.05). Regional factors and learning styles were the biggest factors affecting the achievement of patient safety competencies (adjusted R2 = 0.15, p = 0.00) (9).

DISCUSSION

This systematic review aims to identify the effectiveness of clinical education in achieving nursing student patient safety competencies. There are 5 articles reviewed with intervention research using GPA research design. The transfer of patient safety knowledge carried out by educational institutions to nursing students is preferably a problem-based learning approach. Most of students prefer to learn inreal life examples and learn by problem based learning approaches as helpful in learning patient safety (1).

The findings of this review indicate that educational institutions have contributed to the conceptualization and understanding of patient safety standards in students. However, this contribution has not been effective in achieving the patient safety competencies of nursing students as in findings (7). Educational institutions are expected to support patient safety programs for students from the first semester to the practice site. Patient safety curriculum reforms made during education are made countinity at every level ranging from undergradute student to nursing internship.

It is also hoped that the material in the patient safety curriculum in educational institutions is made broader to cover all patient safety standards (7). Extensions of patient safety are discussed in various nursing courses. Educational institutions also need to prepare time and content for patient safety education materials that need to be expanded (17) including for implementation in the clinical area (18). This makes the integration of education with clinics which will further strengthen the achievement of student competencies in implementing patient safety (19).

In curriculum reform (11), it is stated that changes are not fully determined by external mandates, but these practices develop into the property of the community. It is the community that negotiates meaning at all levels including universities, degree programs, and undergraduate teams and makes decisions according to members' positions, understandings and interests.

The findings of this review also do not show any knowledge management and technology utilization efforts made by educational institutions in achieving patient safety competencies for nursing students. In line with the development of increasingly competitive global competition, knowledge plays an important role in the global economic process. (14) stated that a knowledge management approach can improve the quality of nursing services in hospitals. Nurse performance models in knowledge management-based patient safety goals can be used as an alternative behavior change intervention for nurses through the mindset of knowledge and caring behavior in improving the performance of nurses in patient safety goals.

The use of information and communication technology has become an effective tool in the health profession and in enhancing the learning process in higher education (20). Especially now that it has entered the era of the 4.0 revolution. The era of the Industrial Revolution 4.0 was a digital revolution marked by the emergence of technological developments (21). The nursing field is one of the sectors that has benefited from the digital era in the Industrial Revolution 4.0 (22). In the development of management information systems, especially in nursing education, it does not only focus on developing appropriate technology that can be applied but focuses more on the balance of knowledge in the use of these technologies.

The knowledge that is owned by the organization must be implemented with the support of the use of information technology. Information technology has a large and important influence in the process of distributing and disseminating information (23). Organizations must be able to design technology to make revolutionary changes in knowledge worker creation, communication, and knowledge management. One example is e-learning (24). Through the adoption of information technology, organizations can increase their ability and strength to develop knowledge, new ideas so that they can produce new findings that provide added value to customers through information obtained from consumers (25).

CONCLUSION
The model of learning in patient safety course is organized by many educational institutions is considered ineffective in the achievement of patient safety competencies for nursing students. Based on this condition, nursing institution need to develop models, reform the patient safety curriculum that is embedded in clinical area to get best practice.

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