



Implementation of Nursing Center in Improving the Quality of Nursing Higher Education in the Era of Society 5.0: Systematic Review

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ABSTRACT

Nursing higher education is an institution that plays an important role in producing quality nurses, able to compete in the era of Society 5.0. Students need to be given training in educational laboratories. Nursing centers are integrated management in research, education, and nursing practice which are a place to produce competent nurses, although their existence can still be counted on. This study aims to determine the implementation of orphanages in improving the quality of higher education in nursing in the Society 5.0 era. This study used a Systematic Literature Review of undergraduate data sources Pubmed, ScienceDirect, and Google, PICO search strategies, and full articles in pdf. The search results obtained 14586 articles from 2012 -2022, after reviewing the titles and abstracts, 60 articles were selected. Selected articles are assessed for feasibility, categorized, and adapted to the research theme. 24 articles were used for research and included in the PRISMA flowchart. Nursing Higher Education must carry out a transformation to improve the quality of service. The nursing center is a facility for learning, research, and student practice on evidence-based practices. Students have the necessary competencies to work effectively and efficiently, confidently, and use technology. Improving the quality of education is highly dependent on the learning process, operational management, and information systems. Virtual reality is a technological innovation used for student practice. Accreditation is carried out to improve the quality of education. Government and organizational support are needed to monitor and assess the application of professional standards and ethics.

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INTRODUCTION

Nursing services are services provided by nurses to clients who experience health problems to meet basic human needs according to the response they show. It aims to improve, maintain or restore health or maximize the level of independence and minimize the consequences of the disease (Permenkes RI No. 9, 2014). Nursing services are a form of professional practice provided by nurses, with competencies based on nursing standards, ethical principles, moral values, and information technology.

The professional practice of nursing is the application of theories obtained from academia in higher education (UU RI no. 38, 2014), both hard skills and soft skills. Nursing education is an institution that has a major role in

developing and creating a professionalization process for nursing staff (Lestari, 2014), plays an important role in producing graduates who can provide quality nursing services and is in line with the development of the Society 5.0 era. But currently, nursing practice in Indonesia is still focused on disease treatment rather than disease prevention and health rehabilitation, as well as low evidence-based services by nursing theory (Kurnia et al., 2021).

Nursing theories discuss phenomena that focus on humans, health, the environment, and nursing. Nursing theory is the result of research that provides an understanding of the development of practice (Smith & Parker, 2015). But at this time there was still a gap between theory in education and the real situation in practice in education (Akram et al., 2018). So before students apply

theory to nursing practice they must be given training. The nursing center (NC) is one of the training places because it carries out integrated management for education, research, and obtaining clinical learning (Juniarti et al., 2019). NC in higher education nursing is still rarely used by nurses.

According to the results of research on user perceptions of the performance of nursing graduates as one of the benchmarks for improving the quality of education, it states that hard skill competency skills related to emergency, medical-surgical, and critical nursing services need to be improved. Likewise, attitudes are related to honesty, discipline, and communication (Astini & Kodri, 2016). The results of research on 50 state/government-owned hospitals and private hospitals from various provinces in Indonesia, identified that some of the soft skills of nurses must be properly prepared and taught. Especially the soft skills that need to be possessed in the context of attitudes, namely the ability to empathize, the value of compassion, creativity, and knowledge in the field of nursing. Meanwhile, soft skills in the context of skills can guarantee patient safety, and the ability to identify problems and plan work properly (Wijayanti et al., 2017).

Based on the explanation above, we conducted research in a systematic study to find out how the implementation of nursing centers in improving the quality of higher education in nursing.

METHODS

This research is a Systematic Literature Reviews research from Pubmed, ScienceDirect, and Google Scholar data sources. The search uses advanced search with the addition of the notation "AND/OR". The keywords used in the search for research articles are "nursing center" AND "nursing education" OR "nursing student" OR "nursing education in Society 5.0 era. The search was carried out using database searches and full articles in pdf format. Articles for 2012 – 2022, using qualitative and quantitative approaches, literature review, and mixed-method study.

The inclusion and exclusion criteria were determined according to the PICO search strategy, namely, the population was the nursing center, the intervention was the nursing school, there was no comparison, and the outcome was the implementation of the nursing center in improving the quality of higher education in nursing. The search results obtained 14586 articles, after the titles and abstracts were reviewed, 60 articles were selected. Selected articles are assessed for eligibility, categorized, and adapted to the research theme. 24 articles were used for research and included in the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flow chart.

RESULTS

A total of 24 articles were reviewed and categorized according to the research objectives described below.

Nursing Center in Nursing Higher Education

Nursing education needs to carry out a transformation to improve the quality of health services, especially nursing services, and prepare themselves to face the Society 5.0 era. The key to this transformation is the development of a student-centered, competency-based education system. Education must be able to collaborate on curriculum planning and application in nursing services (Awadhalla et al., 2018). Nursing students are required to have 3 aspects of ability, namely cognitive, affective, and psychomotor so that they can act as professional nurses (Mahayanti & Ismoyo, 2021). They must be equipped with knowledge and practice in educational laboratories before carrying out clinical learning in health facilities.

Nursing centers in nursing higher education are facilities or laboratories used to train nursing students in providing quality nursing care to patients. Provides a simulated environment that resembles a real hospital or other medical environments, using mannequins and medical equipment similar to those used to treat patients. Nursing centers are facilities for student nursing learning, research, and practice (Juniarti et al., 2018). Table 1.

Table 1. Overview of nursing centers in nursing education

| Nursing Center Component | Main Focus | Conclusion | Reference |
|--------------------------|--|---|----------------------------|
| Learning | Evidence-based practical learning | Participants are given material related to clinical learning, | (Hsieh & Chen, 2020) |
| | Learning about the elderly with dementia | Students must complete the care module for elderly patients with dementia. | (Horner et al., 2014) |
| Study | Modality simulation research | Experimental research on the modality of assessing breath sounds. | (Üzen Cura et al., 2020) |
| Practice | Nursing practice is based on curriculum and standards. | Clinical practice students in the treatment room using the perceivers' method | (Habte et al., 2020) |
| | The practice of providing education | Students act as instructors to provide health education. | (Díaz-Alonso et al., 2022) |

Students at NC carry out practical, evidence-based learning. Participants are given material related to clinical learning and educators' guides according to the nursing education curriculum which has previously been tested. To

determine student understanding, educators will provide pretest and posttest evaluations, both knowledge, efficacy, and clinical skills with patient preferences (Hsieh & Chen, 2020). Students must also be able to provide care to patients

of various age levels, starting from the womb to closing age. One of the lessons given is learning about the elderly with dementia which is equipped with a patient care module. Students must complete the module, make reports, discuss learning outcomes and conduct interviews with patients as a form of evaluation (Horner et al., 2014).

Students must be able to do research. One of the studies conducted was modality simulation research. Students from three nursing schools were involved in conducting the experimental research. This study was to find out how the effect of modality simulation therapy with a scenario of assessing breath sounds before and after practice (Üzen Cura et al., 2020). After conducting learning and research, students carry out nursing practice based on the curriculum and standards that have been set. Clinical learning is carried out in the treatment room using the perceivers' method (Habte et al., 2020). Then they practice providing education about health education and act as teachers (Diaz-Alonso et al., 2022)

Improving the Quality of Nursing Higher Education in the Society 5.0 era

Education and research as evidence-based practice and service as the quality of practice and patient safety. Nursing higher education has the task of creating professional nurse graduates so that the quality of nursing services is guaranteed. Improving the quality of nursing higher education is influenced by the learning process, operational management, and information systems. The learning process in nursing tertiary education consists of developing knowledge, skills, and attitudes (Sukadiono et al., 2019) so that when they graduate they can provide quality nursing services. Table 2.

Table 2. Overview of Quality Improvement in Nursing Higher Education

| Aspect higher education | Main Focus | Conclusion | Reference |
|-------------------------|---|---|---------------------------|
| Learning process | Evidence-based practice | Holistic nursing theory of reference in learning. | (Garmy & Clausson, 2021) |
| | Horizontal and transverse skills | The abilities that nurse graduates need to have to make it easier to work, namely nursing content, communication skills, transversal skills, and instrumental skills. | (Peiró et al., 2020) |
| | SBAR Communications | SBAR communication is important for students to learn to improve patient safety. | (Jeong & Kim, 2020) |
| | Self-efficacy | Nursing students must have good self-efficacy to be able to commit to becoming professional nurses. | (Cheng et al., 2021) |
| | Confidence | Nursing students must have the confidence to be able to provide nursing care independently. | (Lim et al., 2012) |
| operational management | Career planning curriculum | The career planning curriculum is an important guide for enhancing learning content and relevant skills. | (Wei et al., 2021) |
| | Educator competence | Good recognition, support, and empowerment of educators will increase motivation to provide transformative learning. | (Nyoni & Botma, 2017) |
| | Student assessment guidelines | Student abilities must be identified and evaluated to determine competency achievement. | (Finstad et al., 2022) |
| | Educational facilities | In the practice of hand hygiene students need adequate facilities to obtain knowledge, attitudes, and practices satisfactorily. | (Ariyaratne et al., 2013) |
| Information Systems | Information competency technology | Educators must prepare and provide knowledge to students so that in the future they can work using information technology. | (Gonen et al., 2016) |
| | Innovation in educational simulation technology | The learning process using virtual simulations increases knowledge, skills, quality, and safety as well as student satisfaction in nursing practice. | (Padilha et al., 2019) |

The learning process uses evidence-based practice. Holistic nursing theory is used as a reference by students in learning related to evidence-based practice, quality of practice, and patient safety. Students must study the nursing

paradigm, and have the knowledge, skills, and attitudes to help the patient's healing process (Garmy & Clausson, 2021). Horizontal and transverse skills are abilities that nurse graduates need to have to make it easier to work consisting

of: nursing content, communication skills, transversal skills, and instrumental skills (Peiró et al., 2020). SBAR communication is also important for students to learn, they must understand and be skilled at doing it to improve patient safety (Jeong & Kim, 2020). Nursing students must have good self-efficacy, so they can be committed to becoming professional nurses (Cheng et al., 2021). Confidence is the first thing that educators need to encourage their students. Confidence is the initial foundation to be able to carry out the role of professional nurses in providing nursing care independently (Lim et al., 2012).

The quality of education will increase if it has good operational management. Higher education requires a career planning curriculum. It is an essential guide for enhancing learning content and relevant skills (Wei et al., 2021). The competence of educators as the most important human resource in higher education operations must be considered because their abilities will affect the quality of students. Good recognition, support, and empowerment will increase motivation to provide transformative learning (Nyoni & Botma, 2017). Educators must also identify and evaluate student competence achievements following established guidelines (Finstad et al., 2022). Educational facilities as a means of supporting learning and practice must be available, complete, and as needed. As in the practice of hand hygiene,

students need adequate facilities and equipment to obtain knowledge, attitudes, and practices satisfactorily (Ariyaratne et al., 2013).

In today's digital era, information systems are a necessity that cannot be tolerated anymore. Students must be prepared and given knowledge about technology according to the needs of health facilities. So when they work in a place that is rich in information technology, they are not surprised (Gonen et al., 2016). Education must also innovate in simulation technology. Innovations in nursing simulation technology in particular and health in general have led to virtual clinical simulations. The learning process uses virtual simulations, both knowledge, and skills. The use of this simulation in the intervention group experienced a significant increase in knowledge ($p=0.001$) and showed higher learning satisfaction ($p<0.001$) (Padilha et al., 2019).

Implementation of the Nursing Center in Improving the Quality of Nursing Higher Education in the Society 5.0 era

Nursing centers can be implemented for learning processes, research, and practice in higher education to achieve good quality. But the implementation is heavily influenced by internal and external factors of education (Lach et al., 2021). Table 3.

Table 3. Overview of factors supporting the implementation of higher education in nursing

| Reference | Main Focus | Conclusion |
|---------------------------|-----------------------------------|---|
| (Pittman et al., 2022) | Educational accreditation | Quality improvement is carried out by carrying out educational accreditation to assess the implementation of predetermined educational standards. |
| (Delva et al., 2019) | Nursing education policy | Higher education must comply with the policies of professional organizations, accreditation bodies, and operational permits. |
| (El-Jardali et al., 2014) | Nursing practice policy | Policies in health care institutions greatly influence the progress of nursing practice in Lebanon. |
| (Horner et al., 2014) | Professional organization support | Support from professional organizations is needed to improve the quality of nursing education and services. |

Educational accreditation is carried out for quality improvement. This was carried out to assess the implementation of education with predetermined standards. Graduates from accredited education are 24% better than graduates from non-accredited schools (Pittman et al., 2022). Operations of nursing higher education must be following nursing education policies. Higher education must comply with the policies of professional organizations, accreditation bodies, and operational permits. Every educational institution is responsible for the quality of education provided to students (Delva et al., 2019).

In addition to accreditation and educational policies, educational institutions must also pay attention to policies from healthcare institutions. These policies greatly influence decision-making and the progress of nursing practice. The scope of nursing practice, and graduate admission requirements, should be a concern of educational institutions in the development of their curriculum and standards (El-Jardali et al., 2014). Support from professional organizations is needed to support continuous improvement and recognition of nurses as professional nurses. Professional organizations must support the improvement of the quality

of education, which will have an impact on nursing services (Horner et al., 2014).

DISCUSSION

Nursing Center in Nursing Higher Education

Nurses are a health profession that dominates health services. The picture of health services is strongly colored by the services provided by nurses. Nurse competence is the basis for determining the quality of service, and that is the result obtained from higher education in nursing. Nursing higher education must continue to adapt and evolve to meet the demands of the development of the Society 5.0 era and ensure that students have the quality of learning and skills needed to work as successful professional nurses in this digital era.

Nursing centers (NC) can be used as an option for improving the quality of nursing education. NC facilitates practical learning for nursing students, enabling them to apply theory according to evidence-based practice, and the

skills they learn in more realistic situations. Evidence-based practice in nursing refers to a decision-making process based on evidence or data obtained from research results related to a health condition or nursing intervention. This approach allows students to select nursing interventions that are proven to be effective in improving patient health outcomes. Students learn not only according to their wishes or following traditional experiences, but also seek and analyze scientific evidence regarding patient conditions and the necessary nursing interventions. Engage in data collection, assessment, and integration of evidence from scientific research, clinical experience, patient preferences, and relevant social and cultural contexts. By using an evidence-based practice approach, students can improve the quality of nursing care provided, reduce the risk of complications, increase patient satisfaction, and optimize health outcomes. This evidence-based decision-making process can also help students continue to learn and develop more effective and innovative nursing practices.

NC provides opportunities for students to learn to evaluate patients, carry out medical procedures, monitor patient conditions, administer medicines, and handle emergencies. In addition, students will also learn about nursing ethics, team coordination, and communication with patients and families. Students also learn to collaborate and learn from each other, helping them build relationships and broaden their knowledge. By using facilities and technology, NC helps improve the quality of learning for students needed to work effectively and holistically. NC can use the education management system to monitor and manage student's progress and ensure that they are eligible to graduate.

The educational aspect in NC is reviewing and analyzing findings from research, then implementing them in clinical nursing practice. Research that is implemented into nursing practice must have a design, be applicable, and be relevant and rational. The research to be implemented will go through a long process starting from synthesizing research findings carefully on a particular theme. The results of this synthesis will be published as practice guidelines or worksheets. Research also explains that analysis of good research findings can result in more transparent and sustainable health services. The implementation of evidence-based analysis can produce changes in culture, behavior, and practices to reduce the gap between education and practice. In addition to these benefits, another benefit is that the provision of nursing services and patient safety can be reassessed so that patient and staff satisfaction increase. The successful implementation of research results in health services is assessed from changes in service strategy, and behavior of clinicians and the community. All of these educational needs can be simulated in NC.

NC in nursing higher education to face the Society 5.0 era by utilizing technology and innovation, is expected to be able to provide quality and integrated educational laboratories. Meet the needs of students to practice nursing services holistically and optimally. NC can be equipped with advanced technology to help diagnose and treat patients accurately and efficiently. For example, NC can be equipped with electronic health information systems (e-health records) that can access real-time patient data and facilitate clinical decision-making. Telemedicine simulation can be used to connect patients with doctors and nurses who are not in the same place. This can help speed up patient care and expand patient access to health services.

NC can use data handling technology to collect, analyze, and utilize patient health data more accurately and efficiently. This can assist in better monitoring of patient

health and treatment planning. NC is equipped with modern facilities and equipment to ensure optimal service quality. For example, NC can be equipped with a simulation of the operating room and its equipment. By utilizing technology and innovation in health services, NC can become a modern and integrated student practice center in the "Society 5.0" era, creating trained and qualified health workers to provide the best health services to patients.

NC can be led by an experienced and skilled nursing educator, who ensures that students receive adequate training and experience in providing safe, effective, and quality nursing care. And can also cooperate with hospitals or other health centers, so that students can observe and participate in actual nursing practice in a real health environment.

Improving the Quality of Nursing Higher Education in the Society 5.0 era

Nursing higher education in the Society 5.0 era must introduce and apply the latest technologies, such as Artificial Intelligence (AI), the Internet of Things (IoT), and virtual reality to expand and enhance student learning. Students must have the necessary technology-based skills. Information technology competence is one of the competencies that students must have. Innovative and effective new learning methods need to be continuously explored. Education must also cooperate with the health service industry and practitioners so that students have the insights and skills needed in the future.

Nursing higher education has duties and roles in creating professional nurse graduates. Professional nurses can be realized if they fulfill three foundations, namely, first, evidence-based, namely nursing must have strong knowledge and research results because this is what distinguishes it from other professions. Second, the quality of the practice is a strong foundation of knowledge and research that will improve competence, critical thinking skills, the ability to make the right decisions, and good confidence in practice and interactions with other professions. The quality of practice must also be supported by various policymakers, regulations, and regulations that synergize between the government, educational institutions, service institutions, and professional organizations. Third, patient safety can improve the quality of practice and ensure patient safety, so an effective education system, practice standards, certification, and clarity of nursing regulations are needed.

In nursing education, there is a lot of evidence-based that will be studied as a foundation in service. Holistic nursing theory from Barbara Dossey has the first five components, namely healing, the second, the metaparadigm of a nursing theory which consists of aspects of nurses, people, health, and the environment, the third, namely patterns of knowledge consisting of personal, empirical, socio-political, ethical, aesthetic, and not know. fourth, namely internal individual factors-feelings and experiences, external individual factors-behavior and physical symptoms, internal collective-group factors and group values, external-organizational and system-collective factors. The fifth is the conclusion of all components. Nursing students relate to other students, parents, and other healthcare teams. This theory can be used as a foundation in dealing with phenomena such as experiences, feelings, and individual needs.

Nursing higher education must motivate students to have a strong commitment. Professional commitment is

considered an important predictor of nursing staff stability. Having self-efficacy and meaning in life are meaningful predictors, but they work through different mechanisms. Meaning in life has a direct effect, while self-efficacy has an indirect effect and depends on one's beliefs. Meaning in life and self-efficacy can influence nursing professional commitment and have important implications for future nursing professional stability. Nursing educators and administrators may wish to formulate related intervention strategies, such as developing a perceived meaning in life and increasing self-efficacy, to enhance the professional commitment of nursing students.

The evidence practice approach can also use virtual reality technology, which is different from traditional educational methods which only prioritize learning. This program implements a student-focused design in keeping with the Society 5.0 era. Before this, students acquired self-taught knowledge through basic memory techniques and understanding. Lecturers will only focus on guidance through innovative applications, analysis, and evaluation. Technological support in learning led to marked increases in knowledge, skills, and self-efficacy.

Implementation of the Nursing Center in Improving the Quality of Nursing Higher Education in the Society 5.0 era

Nursing higher education must produce graduates with quality practice and patient safety. In achieving optimal quality, it is necessary to have a nursing center to create a scientific foundation following applicable regulatory standards. Good service quality is influenced by internal and external factors. Internal factors come from the students themselves, namely good self-efficacy will increase commitment. A good commitment will improve the quality of service. The application of evidence-based programs also greatly influences the services to be provided. Students who get into the program in higher education in nursing will become professional nurses who are ready to work.

Nursing higher education must follow the regulations set by the government. The government provides strict support and supervision of the implementation of nursing education standards. It is very important to ensure that the nurses produced have the necessary knowledge and skills to serve the community well and of high-quality health care. The government must also ensure that education is accredited. Professional organizations must also provide support and supervise that students are provided with appropriate professional standards and ethics to face the Society 5.0 era and gain recognition from the government and society.

CONCLUSION

Nursing centers can be an option for nursing higher education to improve quality in facing the Society 5.0 era. With the Nursing center, nursing graduates are expected to have the knowledge, skills, and attitudes that can ensure the quality of good practice and optimal patient safety. This includes an understanding of evidence-based nursing practice, an understanding of the risks and prevention of medical errors, the ability to communicate effectively with patients and other members of the healthcare team, and the ability to make sound and evidence-based decisions. NC facilitates learning, research, and practice for students to acquire the competencies needed to work effectively and efficiently. Students are also given the understanding to

integrate the latest technology into clinical practice. They must be able to work in an interprofessional team. Nursing higher education must follow the regulations set by the government to ensure quality. Support from professional organizations is needed to oversee the implementation of professional standards and ethics.

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