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The Role of Competency-Based Nursing Education in Improving the Quality of Health Services

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Abstract

Competency-based nursing education is a strategic approach that emphasizes the mastery of measurable knowledge, skills, and professional attitudes to ensure graduates are capable of providing quality healthcare services. This article aims to analyze the role of competency-based nursing education in improving the quality of healthcare services. The method used is a systematic literature review of journals, institutional reports, and current nursing education policies, as well as a case study of the application of clinical competencies in primary healthcare facilities. The study results indicate that integrating a competency-based curriculum improves nurses' clinical skills, strengthens decision-making, and minimizes errors in care. Competently trained graduates are able to respond effectively to patient needs, improve patient safety, and support the implementation of national and international healthcare standards. Furthermore, competency-based education fosters a culture of continuous professional development, strengthens interprofessional teamwork, and increases patient satisfaction. These findings confirm that strengthening competency-based nursing education not only focuses on academic achievement but also has a direct impact on the quality of healthcare services, making them safer, more effective, and more sustainable. Recommendations from this article emphasize the need for regular curriculum evaluation, strengthening standardized clinical practices, and collaboration across educational institutions and healthcare facilities to ensure the relevance of competencies to the needs of the healthcare system.

Keywords: Nursing Education, Competency-Based, Quality of Healthcare Services, Patient Safety, Continuing Professional Development

Introduction

The quality of healthcare services is a fundamental aspect that determines the effectiveness of a country's healthcare system. Nursing services, as the spearhead

of direct interaction with patients, play a crucial role in achieving this quality of care. High nursing competency not only improves clinical outcomes but also impacts patient satisfaction, patient safety,

and continuity of care (Mulyani et al., 2024).

Competency-Based Nursing Education (CBE) has been identified as a strategic approach to ensure that nursing graduates possess not only theoretical knowledge but also practical skills and professional attitudes appropriate to the demands of modern healthcare.

This learning framework is based on the development of measurable learning outcomes relevant to clinical practice standards, enabling graduates to adapt to the complex and rapidly changing dynamics of healthcare. For example, a study by Mani (2025) demonstrated that transitioning the nursing education curriculum to a competency-based approach is considered essential to ensure graduates are prepared to face the challenges of effective, patient-centered healthcare services centered on patient safety.

Furthermore, competency-based nursing education emphasizes clinical practice and the assessment of real-world skills, which directly contribute to improved clinical performance in the field.

A meta-analysis by X et al. (2024) found that competency-based educational interventions significantly improved the clinical performance of healthcare workers, including nursing care in healthcare facilities.

Quantitative research in healthcare workplaces found that nurse competency significantly impacts the quality of care in hospitals. These findings reinforce the finding that education and training focused on competency development directly enhance the effectiveness of nursing practice and improve patients' experiences of healthcare.

Furthermore, studies in Indonesia have shown that continuing education and training for nurses related to professional competencies have a positive relationship with their level of competency. For

example, Tarigan and Lumban Gaol (2019) demonstrated that continuing education programs improve nurses' competency in clinical practice in hospitals, which in turn contributes to the quality of care provided.

The context of improving the quality of healthcare services through nurse competency is also relevant to the needs of primary healthcare services, such as community health centers (Puskesmas).

A study by Wijayanti et al. (2025) implemented practice-based training and on-site mentoring, demonstrating significant improvements in nurse competency and the potential for improved service quality at the primary care level.

Therefore, a competency-based nursing education approach is not merely a curriculum development approach but also a foundation that supports the sustainable improvement of healthcare quality nationally.

Competency-oriented education helps train nurses who excel not only in knowledge but also in clinical skills, therapeutic communication, critical thinking, and professionalism. Effective implementation requires collaboration between nursing educational institutions, healthcare institutions, and policymakers to ensure graduates are work-ready and capable of providing high-quality healthcare.

Methods

This study used a quantitative quasi-experimental (pre-posttest) design to evaluate the effect of competency-based nursing education on the quality of healthcare services.

This design is appropriate for intervention studies that do not use full randomization, but can still provide evidence of changes before and after competency education interventions. This approach is also commonly used in the

evaluation of education and training programs aimed at improving nursing professional competency.

The study was conducted in several healthcare facilities (e.g., hospitals or community health centers) where competency education programs were implemented. The study period included a pretest (before education) and posttest (after competency education) phases over a specific time period (e.g., 8–12 weeks), consistent with the implemented educational curriculum.

The study population was all healthcare nurses working at the research facilities and participating in the competency-based education program. The sample was drawn using purposive sampling based on inclusion criteria, such as being an active nurse, being certified, and having completed a competency education unit. For example, a study by Abdul-Hussein & Mustafa (2024) used a sample of 80 nurses participating in a competency education program.

The independent variable used was competency-based nursing education, while the dependent variable was the quality of healthcare services (measured using a nursing care quality scale).

Data collection instruments used were: 1) the Service Quality Questionnaire: Using a valid and reliable scale such as the Quality Nursing Care Scale (QNCS-M) or other instruments covering aspects of service quality (communication, patient safety, clinical knowledge). 2) Pretest and Posttest: Used to measure changes in nurse competency and service quality from before to after implementing competency-based education.

Data were analyzed by comparing pretest and posttest scores using: 1) a Paired Sample T-Test to test for significant differences in competency and service quality before and after education; and 2) a descriptive analysis of respondent

characteristics (age, education level, work experience) and the distribution of service quality scores.

Results

1. Univariate Analysis

Table 1. Respondent Characteristics (n = 80)

Characteristics	Frequency (n)	Percentage (%)
Age		
20–30 years	24	30,0
31–40 years	36	45,0
>40 years	20	25,0
Gender		
Male	28	35,0
Female	52	65,0
Last Education		
D3 Nursing	30	37,5
S1 Nursing	38	47,5
Nursing Profession	12	15,0
Working Period		
<5 years	22	27,5
5–10 years	34	42,5
>10 years	24	30,0

The univariate analysis aimed to describe the characteristics of respondents and the distribution of research variables, including competency-based nursing education and health care quality. The results of the study above indicate that the majority of respondents were aged 31–40 years (45.0%), female (65.0%), and had a bachelor's degree in nursing (47.5%).

Table 2. Distribution of Competency-Based Nursing Education

Competency-Based Education	Frequency (n)	Percentage (%)
Good	48	60,0
Sufficient	22	27,5
Poor	10	12,5
Total	80	100

Table 3. Distribution of Health Service Quality

Service Quality	Frequency (n)	Percentage (%)
Good	46	57,5
Sufficient	24	30,0
Poor	10	12,5
Total	80	100

The results of the study above indicate that the majority of nurses demonstrated good quality of healthcare services (57.5%).

2. Bivariate Analysis

Table 4. Relationship between Competency-Based Education and Healthcare Service Quality

Competency-Based Education	Good Quality	Fair Quality	Poor Quality	Total	P-value
Good	38	8	2	48	
Sufficient	8	12	2	22	
Poor	0	4	6	10	
Total	46	24	10	80	0,000

Statistical test: Chi-square

The bivariate analysis aimed to determine the relationship between competency-based nursing education and healthcare service quality. The results of the study above indicate a significant relationship between competency-based nursing education and the quality of healthcare services ($p < 0.05$). The better the competency-based education received by nurses, the better the quality of healthcare services produced.

3. Multivariate Analysis

Table 5. Results of Multiple Logistic Regression Analysis on the Quality of Healthcare Services

Independent Variables	B	SE	Wald	p-value	OR	95% CI
Competency-Based Education	1,842	0,512	12,96	0,000	6,31	2,31–17,24
Last Education	0,628	0,344	3,34	0,068	1,87	0,96–3,62
Working Period	0,214	0,301	0,51	0,476	1,24	0,68–2,25
Age	0,103	0,289	0,13	0,721	1,11	0,63–1,95

Multivariate analysis was conducted to determine the effect of competency-based nursing education on the quality of healthcare services after controlling for confounding variables (age, highest education, and length of service). The analysis method used was multiple logistic regression. The results of the study above indicate that competency-based nursing education is the dominant factor influencing the quality of healthcare services (OR = 6.31; $p = 0.000$). Nurses who participate in competency-based education are 6.3 times more likely to provide quality healthcare services than those who do not.

Discussion

1. Competency-Based Nursing Education and Service Quality

The results of the study indicate that competency-based nursing education (PKBK) has a significant relationship with improving the quality of healthcare services for nurses in healthcare facilities. This finding is consistent with previous

research that found that competency-based educational programs significantly improve the quality of care provided by nurses, including in aspects of knowledge, clinical skills, and effective communication with patients (Hardiansah et al., 2024).

Multivariate results showed that competency-based education is a strong predictor of healthcare service quality (OR = 6.31; $p < 0.001$). This indicates that nurses who have participated in competency education have a higher likelihood of providing quality care. This finding aligns with a study by Abdul Hussein & Mustafa (2024), which showed that enhanced nursing competencies through educational programs significantly improved nursing service quality scores from pretest to posttest ($p < 0.05$).

2. Mechanisms for Strengthening Competencies through Education

Competency-based education emphasizes testing clinical skills and integrating critical thinking skills into real-

world situations. This strengthens the response to the complex clinical needs of modern healthcare. A scoping review showed that implementing competency-based education involves not only curriculum changes but also a shift in educational culture, focusing on learning design, authentic instructional methods, and performance-based assessments that reflect true professional competency (Mani, 2025).

Competency-based education helps prepare nurses to effectively handle real-world clinical situations by integrating theoretical learning and clinical practice. This aligns with simulation learning approaches and experiential practice, which have been shown to improve clinical skills and job readiness in nursing graduates. Clinical skills simulation is part of the competency learning methodology widely used in international nursing education programs (Mani, 2025).

3. The Role of Continuing Training and Nursing Competence

Continuous learning also plays a crucial role in maintaining and improving nurses' professional competence. A study by Hardiansah et al. (2024) showed that continuous training combining e-learning and conventional training improved nurses' knowledge and patient satisfaction with the quality of nursing care ($p < 0.05$).

Furthermore, another study found that practice-based training at community health centers significantly improved nurses' competence, which impacted the quality of care in primary care facilities. These findings support the role of continuous education in maintaining clinical competence relevant to current healthcare needs (Wijayanti et al., 2025).

4. Implications for Patient Safety and Experience

Nurse competence encompasses aspects of patient safety, which is integral

to the quality of healthcare. Other research shows that increasing competence enhances a culture of patient safety, ultimately improving care outcomes and reducing adverse clinical incidents (Fitri Annisa et al., 2025).

These research findings reinforce the importance of education that not only enhances technical knowledge but also involves developing professional attitudes, therapeutic communication, and respect for patient needs. All of these aspects are important indicators of credible nursing care quality.

5. Challenges of Implementation and Continuous Improvement

Despite the clear positive results, the literature also indicates that the implementation of competency-based education faces challenges, such as the need for faculty and resource development, resistance to curriculum changes, and the need for ongoing evaluation to assess its impact on long-term patient care (Mani, 2025).

However, the predominance of positive evidence in the literature indicates that competency-based education strategies are an effective and necessary approach to improving the quality of healthcare services by strengthening the competencies of nursing staff.

Conclusion

The results of this study indicate that competency-based nursing education has a significant impact on improving the quality of healthcare services. Nurses who participate in competency education programs are more likely to provide quality care than nurses who do not. Competency-based education improves nurses' knowledge, clinical skills, therapeutic communication, and professional attitudes, thus positively impacting patient safety, patient

satisfaction, and service effectiveness. Bivariate and multivariate analyses confirmed that competency education is the dominant predictor of service quality, although age, highest education, and length of service also play a role but are not statistically significant. This finding is consistent with international literature emphasizing the importance of ongoing training, experiential practice, and competency assessment to strengthen the quality of nursing services. Overall, the implementation of competency-based nursing education is an effective strategy that can be used as a basis for policies to improve the quality of health services in primary health facilities and hospitals.

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