Indonesian Journal of Global Health Research
Volume 8 Number 4, August 2026
e-ISSN 2715-1972; p-ISSN 2714-9749
https://jurnal2.globalhealthsciencegroup.com/index.php/IJGHR

THE EFFECT OF STRENGTHENING NURSES' CLINICAL ROLES ON SERVICE QUALITY IN THE EMERGENCY DEPARTMENT

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ABSTRACT
The Emergency Department (ED) is a service unit that requires nurses to possess strong clinical competencies to make rapid, accurate, and safe decisions. Strengthening nurses' clinical roles is an important factor in improving service quality, particularly in work environments characterized by high complexity and intense pressure. This study aimed to determine the effect of strengthening nurses' clinical roles on service quality in the Emergency Department of Awal Bros Panam Hospital (RSAB Panam). This study employed a quasi-experimental design with control and intervention groups. The study was conducted in the Emergency Department of RSAB Panam. The sample consisted of 32 emergency nurses who were divided into control and intervention groups, as well as patients receiving nursing care in the ED as respondents for service quality assessment. Total sampling was used for nurse participants. The intervention involved strengthening nurses' clinical roles based on Patricia Benner's theory through structured training, supervision, and clinical evaluationService quality was measured using the SERVQUAL instrument, which has demonstrated good validity (content and construct) and high reliability with Cronbach's Alpha values >0.80. The data were analyzed using the Generalized Linear Model Repeated Measure. The results showed a significant effect of strengthening nurses' clinical roles on improving service quality in the ED. The Greenhouse–Geisser test indicated a p-value of 0.000, demonstrating a statistically significant change in service quality over time. The tests of between-subjects effects revealed a significant difference in service quality between the control and intervention groups with a p-value of 0.000. Improvements in service quality were more consistent in the intervention group compared to the control group. In conclusion, strengthening nurses' clinical roles has a significant effect on improving service quality in the Emergency Department.

Keywords: emergency department; nurses' clinical roles; service quality

How to cite (in APA style)
Simanjuntak, F. L., Fadhillah, H., Widiastuti, E., & Hadi, M. (2026). The Effect of Strengthening Nurses' Clinical Roles on Service Quality in the Emergency Department. *Indonesian Journal of Global Health Research*, *8*(4), 13–22. https://doi.org/10.37287/ijghr.v8i4.1929.

INTRODUCTION

The Emergency Department (ED) is an essential hospital service that reflects the overall quality of healthcare, as it serves as the first point of care for patients in critical conditions. Services in the ED require promptness, accuracy, and precision in clinical decision-making. Nurses play a strategic role as frontline healthcare providers through triage implementation, patient stabilization, immediate intervention, and coordination with the medical team. The quality of nurses' clinical roles directly influences patient safety and serves as an important indicator of hospital service quality (Shen & Lee, 2020; Notoatmodjo, 2020).

The increasing number of ED visits has become widespread and is aligned with the growing complexity of healthcare services. Overcrowding in emergency departments has become a global issue. The World Health Organization reports that more than half of hospitals experience overcapacity in their EDs (WHO, 2021). This condition is exacerbated by non-ideal nurse-to-patient ratios, ranging from 1:6 to 1:8. Such ratios negatively impact the quality of clinical interventions, increase the risk of errors, and contribute to high levels of nurse fatigue. Gómez-Urquiza et al. (2017) reported that burnout rates among nurses exceed 50% in high workload environments. Problems in ED services are also related to the level of nurses' clinical competence. In Southeast

Asia, approximately 40% of nurses are still at the early stages of clinical competency development (Lee et al., 2022). This condition has implications for suboptimal patient satisfaction levels, ranging from 55% to 75% (Chen et al., 2021).

Indonesia shows a similar trend, marked by a 15% increase in ED visits and a patient satisfaction rate of 74.5%, which remains below the national target (Ministry of Health of Indonesia, 2024). The Province of Riau, including Pekanbaru City, faces a high burden of ED services with non-ideal nurse-to-patient ratios and a dominance of nurses who still require strengthening of clinical capacity (Riau Health Office, 2024). The demands of ED work require nurses who are not only technically competent but also possess clinical experience, communication skills, psychological resilience, and the ability to make fast and accurate decisions in high-risk situations. The From Novice to Expert theory proposed by Patricia Benner provides a relevant conceptual framework for explaining the gradual development of nurses' competencies through continuous clinical experience (Benner, 2001). This theory emphasizes that clinical competence develops through the accumulation of experience, reflection, and contextual learning, rather than solely through theoretical knowledge.

The application of Benner's theory in nursing practice has been reported to improve service quality, patient safety, team effectiveness, and nurse job satisfaction, particularly in dynamic and high-pressure environments such as the ED (Donelan et al., 2020; Yu et al., 2024). Enhancing nurses' clinical competence also contributes to service quality from the patient's perspective. The SERVQUAL model shows that nurses' competence influences the dimensions of reliability, responsiveness, assurance, empathy, and tangibles, which collectively shape patients' perceptions of service quality (Syahrani et al., 2022).

A preliminary survey conducted in the Emergency Department of Awal Bros Panam Hospital revealed that 43.7% of nurses were still at the beginner to advanced beginner levels, while those at the competent to expert levels accounted for only 56.3%, which is below the ideal standard recommended by Benner. The nurse-to-patient ratio during peak hours reached 1:6 to 1:8, increasing nurses' workload, particularly among those with underdeveloped clinical competence. Patient interviews indicated dissatisfaction across nearly all SERVQUAL dimensions, especially in responsiveness and empathy. Patient complaint data exceeding the hospital's quality targets further highlights the gap between patient expectations and the reality of nursing services in the ED.

These conditions indicate the need for structured and strategic interventions to strengthen the clinical role of ED nurses. An approach based on Patricia Benner's From Novice to Expert theory is considered relevant as a foundation for the continuous development of nurses' clinical competence. The implementation of this theory is expected to improve service quality, patient safety, and satisfaction among both patients and nursing staff in the emergency department. Based on the above description, the objective of this study is to analyze the effect of strengthening nurses' clinical roles on the quality of service in the Emergency Department of Awal Bros Panam Hospital.

METHOD

This study employed a quasi-experimental design using a non-equivalent control group pre-test and post-test approach. The research was conducted in the Emergency Department of Awal Bros Panam Hospital from November to December 2025. The sample consisted of 20 ED nurses, divided into an experimental group (n = 10) and a control group (n = 10), as well as 64 ED patients, with 32 patients in the experimental group and 32 patients in the control group. The experimental group received an intervention in the form of training and mentoring aimed at strengthening nurses' clinical roles based on Patricia Benner's From Novice to Expert theory for four weeks. Meanwhile, the control group continued to provide routine nursing care in accordance with the hospital's standard operating procedures.

The research instruments included a clinical competency checklist based on Benner's stages, an observation sheet of nurses' clinical roles, and a modified SERVQUAL questionnaire adapted for the emergency care setting. All instruments underwent validity and reliability testing prior to data collection. Content validity was assessed by a panel of experts in nursing management and emergency care, while construct validity was evaluated through item analysis. Reliability testing demonstrated good internal consistency, with Cronbach's Alpha coefficients exceeding 0.70 for all instruments, indicating that they were reliable for measuring the intended variables. Measurements were conducted before and after the intervention, with weekly observations throughout the study period. Data analysis included univariate analysis, bivariate analysis using paired t-tests and independent t-tests, and multivariate analysis using the General Linear Model–Repeated Measures to assess changes in nurses' competency and service quality over time and between groups, with a significance level set at 0.05.

RESULT

Characteristics of patients in the experimental group and control group who received services

Table 1.
Characteristics of Control Patients Who Received Services in the emergency room

Characteristics of Control Respondents	Meeting											
	1		2		3		4		5		6	
	f	%	f	%	f	%	f	%	f	%	f	%
Age												
Mature	22	68.8	28	87.5	28	87.5	20	62.5	27	84.4	25	78.1
Elderly	10	31.2	4	12.5	4	12.5	12	37.5	5	15.6	7	21.9
Gender												
Man	16	50	16	50	13	40.6	15	46.9	13	40.6	17	53.1
Woman	16	50	16	50	19	59.4	17	53.1	19	59.4	15	46.9
Education												
No school	1	3.1	0	0	2	6.3	0	0	0	0	1	3.1
Elementary School	1	3.1	0	0	2	6.3	1	3.1	0	0	1	3.1
Junior High School	3	9.4	5	15.6	3	9.4	3	9.4	3	9.4	7	21.9
Senior High School	16	50	17	53.1	10	31.3	18	56.3	16	50	14	43.8
College	11	34.4	10	31.3	15	46.9	10	31.3	13	40.6	9	28.1
Work												
Doesn't work	13	40.5	6	18.8	6	18.8	6	18.8	4	12.5	10	31.3
Private	7	21.9	6	18.8	5	15.6	8	25	7	21.9	7	21.9
Self-employed	6	18.8	14	43.8	13	40.6	13	40.6	15	46.9	10	31.3
Government Employees with Employment Agreements	3	9.4	2	6.3	4	12.5	1	3.1	2	6.3	1	3
Civil servant	3	9.4	4	12.5	4	12.5	4	12.5	4	12.5	4	12.5
Degree of Emergency												
ESI 3	28	87.5	28	87.5	28	87.5	29	90.6	27	84.4	28	87.5
ESI 4	4	12.5	4	12.5	4	12.5	3	9.4	5	15.6	4	12.5

The characteristics of the control group respondents were relatively stable throughout the six meetings. Adults dominated, accounting for 62.5–87.5%, while the elderly ranged from 12.5–37.5%. Gender distribution was relatively balanced, with 46.9–59.4% of women and 40.6–53.1% of men. Educational attainment was dominated by high school (31.3–56.3%) and college (28.1–46.9%), while low education (no schooling, elementary school, and junior high school) ranged from ≤21.9%. Occupational characteristics were dominated by self-employed (18.8–46.9%) and unemployed respondents (12.5–40.5%), while civil servants and PPPK each ranged from 3.1–12.5%. The degree of emergency was dominated by ESI 3 respondents, accounting for 84.4–90.6% of all meetings.

The characteristics of the experimental group respondents during the six meetings showed variations in composition. The adult age group dominated at meetings 1–5 with a proportion of 71.9–81.3%, while the elderly were in the range of 18.8–28.1%. However, at the 6th meeting, the

elderly increased to 59.4% and the adults decreased to 40.6%. Gender distribution showed that women were more dominant at meetings 1–5 at 53.1–59.4%, while at the 6th meeting, men were the majority at 75%. The education level was dominated by high school with a proportion of 37.5–75% and college at 25–40.6%, while low education was in the range of 0–15.6%. Occupational characteristics were dominated by self-employed at 21.9–59.4%, followed by unemployed respondents at 12.5–34.4%, while civil servants and PPPK each ranged from 3.1–15.6%. The degree of emergency of respondents was dominated by ESI category 3 at 68.8–100% in all meetings.

Table 2.
Characteristics of Experimental Patients Who Received Services in the Emergency Department

Characteristics of Experimental Respondents	Meeting											
	1		2		3		4		5		6	
	f	%	f	%	f	%	f	%	f	%	f	%
Age												
Mature	23	71.9	24	75	23	71.9	25	28.1	26	81.3	13	40.6
Elderly	9	28.1	8	25	9	28.1	7	21.9	6	18.8	19	59.4
Gender												
Man	13	40.6	14	43.8	15	46.9	17	53.1	15	46.9	24	75
Woman	19	59.4	18	56.2	17	53.1	15	46.9	17	53.1	8	25
Education												
No school	2	6.3	0	0	0	0	0	0	0	0	0	0
Elementary School	0	0	4	12.5	2	6.3	0	0	0	0	2	6.3
Junior High School	5	15.6	4	12.5	3	9.4	0	0	4	12.5	4	12.5
Senior High School	12	37.5	15	46.9	17	53.1	24	75	20	62.5	13	40.6
College	13	40.6	9	28.1	10	31.3	8	25	8	25	13	40.6
Work												
Doesn't work	6	18.8	8	25	8	25	8	25	4	12.5	11	34.4
Private	8	25	6	18.8	4	12.5	3	9.4	6	18.8	7	21.9
Self-employed	11	34.4	12	37.5	14	43.8	16	50	19	59.4	7	21.9
Government Employees with Employment Agreements	2	6.3	4	12.5	3	9.4	2	6.3	2	6.3	2	6.2
Civil servant	5	15.6	2	6.3	3	9.4	3	9.4	1	3.1	5	15.6
Degree of Emergency												
ESI 3	23	71.9	22	68.8	25	28.1	27	84.4	32	100	27	84.4
ESI 4	9	28.1	10	31.3	7	21.9	5	15.6	0	0	5	15.6

Characteristics of nurses in the experimental group and control group who work

The characteristics of nurses in the control and experimental groups showed a relatively comparable composition. All respondents were adults (100%) with a gender distribution dominated by men at 60% and women at 40%. The majority of educational levels were Bachelor of Nursing + Nurse at 95%, while D3 Nursing was only 5%. Respondents' work period was dominated by the range of 1–5 years at 75%, while work period >5 years was at 25%. All respondents (100%) had attended training or had certification, with the type of training intervention dominated by a combination of BHD + BTCLS at 75% and BHD alone at 25%. Based on competency level, the majority of nurses were at PK I (*Novice*) at 70%, followed by PK III (*Competent*) at 15%, PK II (*Advanced Beginner*) at 10%, and PK IV (*Proficient*) at 5%.

Table 3.
Characteristics of Nurses Working

Respondent Characteristics	Control Group		Experimental Group		Total	
	F	%	f	%	f	%
Age						
Mature	10	100	10	100	20	100
Gender						
Man	5	50	7	70	12	60
Woman	5	50	3	30	8	40
Education						
D3 Nursing	1	10	0	0	1	5
Bachelor of Nursing + Nurse	9	90	10	100	19	95
Years of service						
1 year – 5 years	8	80	7	70	15	75
> 5 years	2	20	3	100	5	25
Training/Certification						
There is	10	100	10	100	20	100
Types of Training Interventions						
BHD	2	20	3	30	5	25
BHD + BTCLS	8	80	7	70	15	75
Competency Level						
PK I (*Novice*)	7	70	7	70	14	70
PK II (*Advanced Beginner*)	1	10	1	10	2	10
PK III (*Competent*)	2	20	1	10	3	15
PK IV (*Proficient*)	0	0	1	10	1	5

Table 4.
Analysis of the Quality of Nursing Services in the Emergency Room of Panam Hospital

Group	N	Mean	Median	Standard Deviation	Min	Max
Control						
Meeting 1	32	75.2813	74,0000	8.44807	62.00	93.00
Meeting 2	32	73.3750	73,0000	6.55867	61.00	85.00
Meeting 3	32	73.2500	73,5000	4.98384	60.00	81.00
Meeting 4	32	74.5625	73,5000	4.75149	69.00	86.00
Meeting 5	32	69.7813	69,0000	5.59801	54.00	81.00
Meeting 6	32	74.6875	74,5000	8.24401	60.00	88.00
Experiment						
Meeting 1	32	74.0313	71,0000	7.60087	61.00	88.00
Meeting 2	32	76.6250	76,0000	5.83510	66.00	89.00
Meeting 3	32	81.9375	82,0000	6.26788	67.00	94.00
Meeting 4	32	83.6250	83,5000	6.91772	71.00	94.00
Meeting 5	32	82.4688	82,5000	8.81708	63.00	98.00
Meeting 6	32	84.4375	83,5000	10.19151	66.00	105.00

The quality of nursing care in the control group showed fluctuations in the average score over the six meetings, with a pre-test mean of 75.28 and a post-test mean of 74.69. The lowest score occurred at the 5th meeting with a mean of 69.78, while the maximum score ranged from 81–93. In the experimental group, the quality of care showed a consistent increase from a pre-test mean of 74.03 to 84.44 in the post-test. The increase in the average score began to be seen from the 2nd meeting (76.63) until it reached the highest score at the 6th meeting, with the maximum score range increasing from 88 to 105. These findings indicate a more significant improvement in the quality of care in the experimental group compared to the control group.

Table 5.
T-Test of Service Quality of Control Group and Experimental Group

Meeting	Mean Control	Experimental Mean	t	df	*p-value* (Sig. 2-tailed)
1	75.28	74.03	0.622	62	0.536
2	73.38	76.63	-2,094	62	0.040
3	73.25	81.94	-6,137	62	0,000
4	74.56	83.63	-6,109	62	0,000
5	69.78	82.47	-6,872	62	0,000
6	74.69	84.44	-4,208	62	0,000

The t-test results showed that at the first meeting there was no significant difference in service quality between the control and experimental groups (p=0.536). Significant differences began to appear at the second meeting, with a higher mean for the experimental group (76.63 vs. 73.38; p=0.040). At the third to sixth meetings, the difference in service quality became stronger and more consistent, with the mean value for the experimental group ranging from 81.94–84.44 compared to 69.78–74.69 for the control group (p<0.001). These findings indicate that the intervention had a significant impact on improving the quality of nursing care in the ER.

Table 6.
Differences in Changes in Service Quality Between the Control Groups and Experimental Group

Group	N	Mean *Pre-test*	Mean *post-test*	Mean Difference (Pre–Post)	t	df	*p-value* (Sig. 2-tailed)
Control	32	75.28	74.69	0.59	0.468	31	0.643
Experiment	32	74.03	84.44	10.41	4,430	31	0,000

Changes in service quality in the control group showed a mean difference between pre-test and post-test of 0.59 with a p-value of 0.643, indicating no significant difference. In contrast, the experimental group showed a significant increase in service quality with a mean difference of 10.41, a t-value of 4.430, and p<0.001. These findings indicate that the intervention significantly improved the quality of nursing care in the ER.

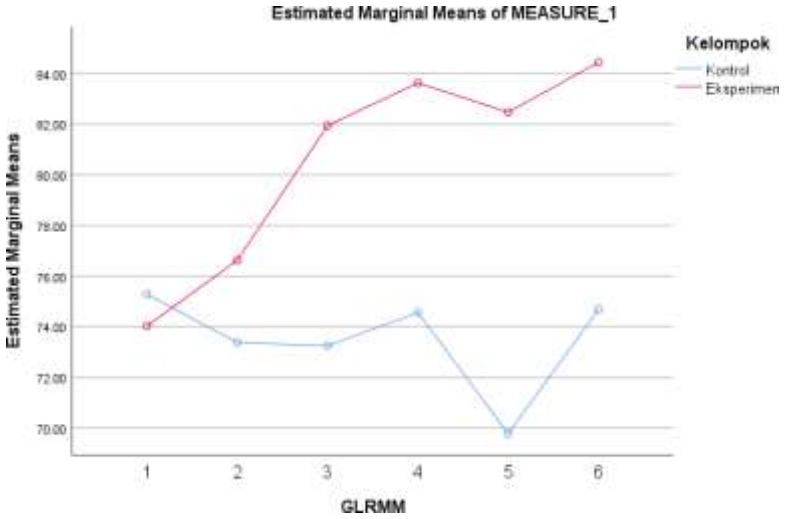

Figure 1 *Profile Plots Estimated Marginal Means*

Figure 1 shows the differences in the pattern of changes in estimated marginal means of service quality between the control and experimental groups over the six measurements. The control group tended to fluctuate with values ranging from around 69.8 to 75.3 and did not show a consistent pattern of improvement. In contrast, the experimental group showed a clear improvement starting from the second measurement, from around 74.0 at the beginning of the measurement to over 84.0 at the sixth measurement. The increasingly distant lines between the groups indicate a stronger effect of the intervention on improving service quality in the experimental group compared to the control group.

DISCUSSION

The characteristics of patients in both the experimental and control groups were predominantly adults, with relatively balanced gender distribution, moderate educational backgrounds, and a majority classified as ESI level 3. These findings indicate that most patients had sufficient cognitive and emotional capacity to evaluate healthcare services. Previous studies have demonstrated that age, education, and severity level significantly influence patients' perceptions of service quality in emergency settings (Putri et al., 2021; Rahmawati et al., 2022; Yuliana & Hartono, 2021; Suryani et al., 2022; Prasetyo et al., 2023).

The characteristics of nurses showed that most were adults, held professional nursing degrees, had moderate work experience (1–5 years), and had received emergency-related training and certification. However, the majority remained at the novice competency level (PK I). This finding reflects a gap between formal education and clinical expertise. According to Benner's From Novice to Expert theory, nurses at early competency stages require structured guidance and experiential learning to improve clinical decision-making and performance (Benner, 2021). This is consistent with previous findings highlighting the importance of competency development and training in improving nursing performance and service quality (Kurniawan et al., 2021; Amelia & Hartati, 2023; Yuliani et al., 2022; Saputra et al., 2024; Lestari & Nugroho, 2023).

The study findings indicate that strengthening nurses' clinical roles significantly improved service quality in the experimental group compared to the control group. The increase in mean service quality scores following the intervention demonstrates that structured training and mentoring effectively enhance nurses' competencies and their ability to deliver patient-centered care. These results are consistent with previous studies reporting significant improvements in service quality after clinical role strengthening interventions (Putri et al., 2022; Kurniawan et al., 2023; Hidayat et al., 2024), although some studies reported non-significant findings due to shorter intervention duration and limited supervision (Rahmawati & Prabowo, 2020; Dewi et al., 2021).

Further analysis revealed a statistically significant difference in service quality changes between the experimental and control groups, with no meaningful improvement observed in the control group. This suggests that routine nursing practice alone is insufficient to improve service quality without targeted interventions. These findings support previous evidence that structured clinical role strengthening improves nurse competence and service quality, particularly in SERVQUAL dimensions such as reliability, responsiveness, assurance, and empathy (Sari et al., 2022; Lee et al., 2023; Yuliana et al., 2023; Alligood, 2022; Wijaya et al., 2024).

The effectiveness of the intervention is further reflected in improvements across SERVQUAL dimensions, particularly responsiveness and empathy, followed by assurance and tangibles, while reliability improved gradually. These dimensions are closely associated with nurses' communication skills, responsiveness, and professional competence in clinical settings. The SERVQUAL model emphasizes that service quality is a multidimensional construct influenced by both technical and interpersonal aspects of care (Parasuraman et al. in Alligood, 2022).

Overall, this study confirms that strengthening nurses' clinical roles based on Benner's theory is an effective and sustainable strategy for improving service quality in the emergency department. The observed improvements highlight the importance of continuous competency development through training, mentoring, and experiential learning in enhancing nursing performance, patient safety, and satisfaction in high-acuity healthcare environments (Benner, 2021; Marquis & Huston, 2021; Rahman et al., 2023; Utami et al., 2024; Firmansyah et al., 2025).

CONCLUSION

The quality of nursing services before the intervention was comparable between the control group (mean 75.28 ± 8.45) and the experimental group (mean 74.03 ± 7.60), indicating homogeneous baseline conditions (p = 0.536). Following the intervention, the experimental group demonstrated a significant improvement in service quality (mean 84.44 ± 10.19), while the control group showed no meaningful change (mean 74.69 ± 8.24; p = 0.643). The mean increase in the experimental group was 10.41, with statistically significant results (p = 0.000). Multivariate analysis further revealed significant effects of time and the interaction between time and group on service quality (p = 0.000). These findings indicate that strengthening nurses' clinical roles based on Patricia Benner's theory is effective in improving the quality of nursing services in the Emergency Department of Awal Bros Panam Hospital.

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