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The Influence of Training and Mentoring on Enhancing Nurses' Caring Competence

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ABSTRACT

Background: Caring behaviour is a fundamental component of patient-centred nursing care, directly influencing patient outcomes and satisfaction. Despite its importance, many nurses face significant barriers such as insufficient training and lack of structured mentoring, which hinder their ability to deliver optimal care. Addressing these barriers through structured interventions is essential to improving nurses' caring competencies. **Methods:** This quasi-experimental study employed a pre-post test design with a control group. A total of 120 inpatient nurses were recruited using purposive sampling, with 60 nurses in the intervention group and 60 in the control group. Data were collected using validated and reliable questionnaires to assess knowledge, attitudes, and actions related to caring behaviour. The intervention, which consisted of training and mentoring, was implemented over three months. Data were analysed using the *T*-test and General Linear Model Repeated Measures (GLM RM) test. **Results:** The study found a statistically significant improvement in caring competence in the intervention group compared to the control group ($p < 0.001$). The GLM-RM analysis revealed large effect sizes, with partial eta squared values of 0.882 for knowledge, 0.711 for attitudes, and 0.737 for actions, indicating that training and mentoring effectively enhanced nurses' caring behaviours. **Conclusion:** Structured training and mentoring programs are effective strategies for enhancing nurses' caring competence. Healthcare institutions should consider integrating these interventions into professional development programs to improve patient-centred care. Future studies should explore long-term impacts of such interventions on patient outcomes and satisfaction.

Keywords: Caring; Competence; Mentoring; Nurses; Training

INTRODUCTION

Nurses' caring behaviour is a key element in delivering high-quality healthcare services and ensuring patient satisfaction (Batbaatar *et al*., 2017). Caring encompasses multiple dimensions, including empathy, attentiveness, and responsiveness to patients' physical, emotional, and spiritual needs (Aagard, Papadopoulos & Biles, 2018). Despite the essential role that caring plays in patient outcomes, studies indicate that nurses' caring competence in several countries, including Indonesia, remains below optimal levels (Aty *et al*., 2020). In developed countries such as the United States, systematic training and mentoring programs have been successfully implemented, significantly enhancing nurses' caring abilities and positively impacting patient outcomes and satisfaction. Similarly, several Southeast Asian countries, such as Thailand and the Philippines, have adopted structured training and mentoring programs to strengthen nurses' caring competencies. These countries have integrated continuous professional development programs and mentoring systems, leading to improved patient-centred care and higher patient satisfaction levels (Romero *et al*., 2019).

This study differs from the research conducted by Hendy *et al*. (2024) on the impact of training on nurses' performance in creating a healing environment and providing clustered nursing care for premature infants in the NICU of a government hospital. Hendy's study in 2024, showed significant results, where before the

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intervention, 83.8% of nurses were not competent; however, after the training, competence increased to 81.3% in performing practices in the Neonatal Intensive Care Unit (NICU).

In contrast, Indonesia faces several challenges in maintaining nurses' caring competence, including high workloads, limited resources, and workplace pressures that hinder the ability to provide optimal care. A study by Afriliana, Chriswardani and Dwiantoro (2022) found that many nurses in Indonesian hospitals exhibit inadequate caring behaviours due to the lack of structured and continuous training programs. This problem is further exacerbated by the scarcity of mentoring programs designed to strengthen interpersonal skills and empathy. Research by Sultan *et al.* (2023), highlights that caring-focused training initiatives are infrequent in healthcare institutions, leading to a significant gap in nurses' ability to provide compassionate care and excellent service at the hospital.

The situation is particularly challenging in East Nusa Tenggara (NTT), where healthcare services are still developing. The region faces critical issues, such as a shortage of trained nurses and limited access to professional development programs. Moreover, inadequate facilities and limited training opportunities further exacerbate these challenges (Mau *et al*., 2021). Several hospitals in NTT have reported low patient satisfaction levels, often attributed to deficiencies in nurses' caring competence (Suweko & Warsito, 2019; Afriliana, Chriswardani & Dwiantoro, 2022). Compared to other developing Southeast Asian nations, Indonesia lags in establishing systematic mentoring programs. In contrast, countries like Malaysia and Vietnam, with government-backed nursing education and mentorship programs, have shown positive outcomes in improving caring behaviours among nurses (Novieastari, Gunawijaya & Indracahyani, 2018).

Training and mentoring have been identified as effective strategies for improving nurses' caring competence. According to Dewey's learning theory (2016), continuous training combined with mentorship from experienced professionals can enhance caring behaviours through hands-on learning and constructive feedback. Studies conducted in different regions of Indonesia indicate that structured training and mentorship programs significantly improve nurses' caring attitudes and behaviours (Mau, Limbong & Yetti, 2020; Meyer, 2023; Nastiti, Kusnanto & Ahsan, 2017). Furthermore, international research over the past decade emphasises that coaching-based training methods are particularly effective in enhancing caring competence among nurses working in inpatient and critical care settings (Sinaga & Bunga, 2024).

Based on these considerations, this study aims to examine the influence of training and mentoring on nurses' caring competence, focusing on knowledge, attitudes, and actions. The findings are expected to contribute to the development of effective training programs that enhance nursing service quality, particularly in resource-limited settings such as NTT.

Research Objectives (Secondary Outcome):

1. To identify the caring competence of nurses, including knowledge, attitudes, and caring actions before training and mentoring.

2. To identify the caring competence of nurses, including knowledge, attitudes, and caring actions after training and mentoring for one month, two months, and three months.

3. To analyse the influence of training and mentoring on enhancing nurses' caring competence in terms of knowledge, attitudes, and actions.

METHODOLOGY

Study Design

This research utilised a quasi-experimental pre-post-test design with a control group to evaluate the effects of training and mentoring interventions on nurses' caring competence in inpatient wards (Polit & Back, 2017). The study involved two groups:

Intervention group: Nurses who received a structured training and mentoring program.

Control group: Nurses who did not receive the intervention but were provided with module materials.

Measurements of nurses' caring competence, including knowledge, attitudes and caring actions, were

assessed at four time points: before the intervention (pre-test), after one month, after two months and after three months (post-test). This approach allowed the researchers to examine both short-term and long-term effects of training and mentoring interventions on nurses' caring competence.

Sample and Sampling

The study involved 120 nurses working in inpatient wards across two hospitals in East Nusa Tenggara (NTT) Province. Participants were selected using purposive sampling based on the inclusion criteria as minimum of one year of experience in inpatient care, willingness to participate in the study until completion and not currently enrolled in any other structured training program. The sample size was determined using the formula for the difference of two proportions, resulting in 60 nurses in the intervention group and 60 in the control group.

Research Setting and Duration

The study was conducted between January and March 2023 at two Regional General Hospitals in East Nusa Tenggara Province, Indonesia.

Intervention

The intervention group underwent a structured three-month training and mentoring program designed to enhance nurses' caring behaviours. The intervention included (Bjursell, 2016; Olaolorunpo, 2019; Mikhaiel *et al*, 2020; Toh *et al*, 2022)

Formal training sessions: Delivered through workshops and interactive discussions.

Learning modules: Nurses were required to study materials and complete assignments for at least one hour daily.

Hands-on mentoring: Senior nurses acted as mentors, providing guidance and real-time feedback.

Case reflection discussions: Conducted biweekly to reinforce learning through real patient scenarios.

Meanwhile, the control group received only the module materials but did not participate in any training or mentoring sessions.

Instrumentation

Data collection utilised validated instruments to measure:

Knowledge: 35-item multiple-choice test

Attitudes: 25-item Likert-scale questionnaire

Caring actions: 45-item observational checklist

Reliability testing revealed strong internal consistency, with Cronbach's Alpha values of: 0.89 for knowledge, 0.92 for attitudes and 0.97 for actions. Corrected item-total correlations ranged from 0.38 to 0.85 across all domains, indicating strong reliability of the instruments used.

Data Collection Procedure

Data were collected at four time points:

Pre-test: Before the intervention.

Post-test 1: After one month.

Post-test 2: After two months.

Post-test 3: After three months.

Structured questionnaires and direct observations were used to assess nurses' caring competence in both groups (Kemmis *et al*., 2014; Henthorn *et al*., 2022).

Data Analysis

Statistical analysis was performed using the *T*-Test: To compare mean differences in caring competence between the intervention and control groups. Generalis ed Linear Model Repeated Measures (GLM-RM): To assess the overall impact of training and mentoring on changes in caring competence over time. The analysis focused on changes in knowledge, attitudes, and caring actions across all time points in both groups (Nieswiadomy and Bailey, 2018).

Ethical Consideration

The researchers obtained ethical approval from the Ethics Committee of Faculty of Nursing Sciences, Universitas Indonesia, Indonesia with reference number SK 244/UN2.F12. D1.2.1/ETIK 2023, on 2nd January 2023.

RESULTS

Table 1: Sociodemographic Characteristics of Participants (n=120)

Sociodemographic Characteristics	**Intervention Group** n=60 f (%)	**Control Group** n=60 f (%)
Gender		
Male	14 (23.3)	10 (16.7)
Female	46 (76.7)	50 (83.3)
Religion		
Catholic	29 (48.3)	24 (40)
Protestant	25 (41.7)	26 (43.3)
Islam	6 (10)	10 (16.7)
Education		
Diploma in Nursing	14 (23.3)	29 (48.3)
Bachelor of Nursing	0	6 (10)
Nursing or Registered Nurse	46 (76.7)	24 (40)
Master's in Health	0	1 (17)
Length of Service		
< 6 years	29 (48.3)	20 (23.3)
6-10 years	13 (21.7)	12 (20)
>10 years	18 (30)	28 (46.7)
Age	32.17	33.78
Employment Status		
Civil servant	38 (63.3)	46 (74.7)
Private	32 (36.7)	14 (23.3)
Ethnic Group		
Timor	15 (25)	26 (43.3)
Sabu	12 (20)	1 (1.7)
Rote	6(10)	7 (11.7)
Sumba	2 (3.3)	4 (6.7)
Flores	23 (38.3)	16 (26.7)
Alor	2 (3.3)	6(10)

A total of 120 nurses participated in the study, with an equal split between the intervention (n=60) and control (n=60) groups. The sociodemographic characteristics of the participants, including gender, religion, education, work experience, and ethnic background, were compared across both groups. The majority of participants were female, and the education levels differed between groups, with the intervention group having a higher proportion of nurses with a Bachelor's degree. Work experience also varied, with the intervention group having more nurses with less than six years of experience. The ethnic distribution showed a higher

representation of Flores in both groups, and the majority of participants were civil servants.

Table 2: Changes in Caring Competence (n=120)

Caring Competence	Intervention Group		Control Group	
	Mean	SD	Mean	SD
Knowledge				
Before model implementation	49.43	13.84	44.81	12.87
After two months of model implementation	69.61	9.66	46.62	13.16
After three months of model implementation	85.38	9.69	53.05	11.25
Attitude				
Before model implementation	72.90	7.62	79.06	5.93
After two months of model implementation	81.96	5.02	80.65	6.05
After three months of model implementation	89.69	5.36	85.64	6.57
Action				
Before model implementation	80.27	5.71	78.85	6.02
After two months of model implementation	87.23	5.22	80.17	6.13
After three months of model implementation	93.12	4.14	82.39	6.05

Table 2 highlights significant changes in caring competence across three dimensions (knowledge, attitude and action) for both groups before and after the intervention. The intervention group demonstrated substantial improvements, especially in knowledge (49.43 to 85.38), attitude (72.90 to 89.69), and action (80.27 to 93.12), compared to the control group, which showed only modest increases.

Table 3: Differences in Average Caring Competence Scores Between Intervention and Control Groups (n=120)

Caring Competence	Intervention Group		Control Group		95% CI	*p* value*
	Mean	SD	Mean	SD		
Knowledge						
Before model implementation	49.43	13.84	44.81	12.87	-0,21-9.45	0.061
After two months of model implementation	69.61	9.66	46.62	13.16	18,82-27.17	0.0001
After three months of model implementation	85.38	9.69	53.05	11.25	28,53-36.12	0.0001
Attitude						
Before model implementation	72.90	7.62	79.06	5.93	-8,62- -3.69	0.0001
After two months of model implementation	81.96	5.02	80.65	6.05	-0.69-3.31	0.199
After three months of model implementation	89.69	5.36	85.64	6.57	1.87-6.21	0.0001
Action						
Before model implementation	80.27	5.71	78.85	6.02	-0.70-3.53	0.189
After two months of model implementation	87.23	5.22	80.17	6.13	5.00-9.12	0.0001
After three months of model implementation	93.12	4.14	82.39	6.05	8.85-12.60	0.0001

Table 3 shows that significant differences in knowledge, attitude, and action scores between the intervention and control groups emerged after two and three months of the intervention. The intervention group demonstrated substantial improvements in all areas, with knowledge and attitude showing particularly strong growth.

Table 4: The Impact of Training and Mentoring on Improving Nurses' Caring Competence in Intervention and Control Groups (n=120)

Caring Competence	Mean	Mean Difference	Standard Deviation	95% CI	*p* value*	*Partial Eta Squared*
Nurses' Knowledge						
Intervention Group						
Before intervention	49.43		13.84	45.85-53	0.0001	0.882
After two months intervention	69.61	20.190*	9.65	67.12-72,11		
After three months intervention	85.38	35.952*	9.68	82.87-87.88		
Control Group						
Before intervention	44.81		12.86	41.48-48.13	0.0001	0.445
After two months intervention	46.62	1.810*	13.16	43.21-50.02		
After three months intervention	53.05	8.238*	11.25	50.14-55.95		

Nurses' Attitude						
Intervention Group						
Before intervention	72.90		7.61	70.93-74.87	0.0001	0.711
After two months intervention	81.96	9.062*	5.01	80.66-83.26		
After three months intervention	89.69	16.786*	5.36	88.30-91.07		
Control Group						
Before intervention	79.06		5.92	77.53-80.59	0.0001	0.323
After two months intervention	80.65	1.592*	6.04	79.09-82.21		
After three months intervention	85.64	6.577*	6.56	83.94-87.33		
Nurses' Action						
Intervention Group						
Before intervention	80.27		5.71	78.79-81.74	0.0001	0.737
After two months intervention	87.23	6.963*	5.22	85.88-88.58		
After three months intervention	93.12	12.852*	4.14	92.05-94.19		
Control Group						
Before intervention	78.85		6.02	77.29-80.40	0.0001	0.165
After two months intervention	80.17	1.315*	6.13	78.58-81.75		
After three months intervention	82.39	3.537*	6.04	80.82-83.95		

Table 4 indicates that the intervention group experienced statistically significant improvements in all aspects of caring competence. The mean difference for the intervention group in knowledge, attitude, and action was much higher than in the control group. The training and mentoring program had a strong impact on improving knowledge (88.20%), attitudes (71.10%), and caring actions (73.70%).

DISCUSSION

Effectiveness of Training and Mentoring on Nurses' Caring Competence

The results of this study demonstrate that structured training and mentoring significantly enhance nurses' caring competence, particularly in knowledge, attitudes, and caring actions. The intervention group showed substantial improvements compared to the control group, confirming that a combined approach blending formal training, mentoring, and reflective practice is more effective than passive learning methods like self-study with modules alone. This aligns with Dewey's experiential learning theory (2016), which posits that learning is most effective when knowledge is reinforced through active participation and reflection. The biweekly case reflection discussions provided a safe space for nurses to process their experiences, enhance empathy and internalise caring behaviours factors less emphasised in traditional, lecture-based training models (Kalkbrenner & Horton-Parker, 2016; Elliana, Nursalam & Yunitasari, 2021). Furthermore, the significant increase in caring actions supports Benner's "Novice to Expert" theory, where mentoring accelerates a nurse's transition from competent to proficient by integrating knowledge with real-world practice. The hands-on guidance from senior nurses helped translate theoretical concepts into actionable behaviours, enabling nurses to respond empathetically and proactively to patient needs (Potter *et al*., 2020; Bui *et al*., 2025).

Knowledge Improvement

The knowledge dimension saw the most significant improvement (88.2% increase) in the intervention group. This supports findings from Sinaga and Bunga (2024), who noted that coaching-based training focusing on interactive discussions and scenario-based learning fosters higher knowledge retention than traditional methods. Additionally, the knowledge gap observed in the control group reflects the limitations of module-based self-learning. Without reinforcement through discussion and mentoring, knowledge acquisition remained superficial, aligning with Hovland's Stimulus-Organism-Response (S-O-R), which highlights that knowledge alone may not trigger behaviour change unless environmental support facilitates learning transformation (Giddens, 2021; Bergmark *et al*., 2024).

Attitude Enhancement

The improvement in caring attitudes (71.1% increase) highlights the role of emotional and moral engagement, a key tenet in Watson's Caring Theory, which emphasises human connection as the foundation of caring. This study supports Watson's assertion that mentoring relationships foster emotional support and caring awareness, enabling nurses to authentically engage with patients (Yoost & Crawfordn, 2020). Interestingly, the control group displayed higher baseline attitudes, possibly influenced by social desirability bias (Krishna *et al*., 2020). However, the intervention group surpassed this baseline by the third month, suggesting that mentoring not

only reinforces emotional engagement but also cultivates genuine, sustained caring attitudes (Al Hilali *et al*., 2020).

Caring Actions Improvement

The 73.7% increase in caring actions reflects the success of skill reinforcement through mentoring. This finding supports Swanson's Middle-Range Caring Theory, particularly the "Doing For" and "Enabling" processes, where mentors model caring behaviours, empowering nurses to internalise and replicate those actions (Johnson & Weber, 2015). The consistent biweekly reflective discussions also align with Leininger's Culture Care Diversity and Universality Theory, promoting culturally sensitive practices. Nurses in this study, especially from NTT's multicultural context, reported that mentoring discussions helped them adapt caring behaviours to local cultural norms, reflecting Leininger's emphasis on culturally congruent care (Hutapea, 2024; Mcfarland & Wehbe, 2019).

Comparative Insights with Southeast Asian Studies

This study strengthens existing literature by comparing findings with other Southeast Asian countries. In Thailand and the Philippines, structured mentoring programs similarly boosted nurses' caring competence (Kutsyuruba & Godden, 2019). However, this study's novel combination of mentoring, practical reflection, and case-based learning yielded higher improvements, particularly in caring actions a gap noted in previous research. Moreover, Vietnam and Malaysia's integration of government-supported mentorship programs (Edwards-Groves, Grootenboer & Ronnerman, 2016; Nguyen *et al.*, 2023) underscores the importance of institutional support a factor that could be strengthened in Indonesia to ensure sustainability of caring competence improvements.

Nursing Implications

The findings of this study highlighted several implications for nursing practice. First, hospitals should institutionalise structured mentorship and training programmes, a regular part of their operations, with nurse managers facilitating and monitoring their implementation. Second, Integrating reflective discussions and local cultural values into these programmes can improve nurses' ability to deliver patient-centered, culturally sensitive care, particularly in diverse and resource-limited settings like East Nusa Tenggara. Third, Nursing education should also integrate caring-focused content and mentorship frameworks to prepare better graduates for clinical challenges. Finally, policymakers and healthcare administrators must support infrastructure that empowers continuous professional development. In practice, this means providing time, mentors and resources to improve and sustain nurses' caring skills and the overall quality of patient care.

Limitations

Despite its strengths, this study acknowledges certain limitations. First, the short duration of three months may not adequately capture the long-term retention of caring behaviours; therefore, future studies should consider extending follow-ups to six or twelve months to assess the sustainability of these behaviours. Second, the limited involvement of head nurses in the mentoring process, largely due to workload constraints, may have affected the depth and quality of guidance provided. It is recommended that future implementations enhance leadership involvement to strengthen mentorship. Lastly, the potential for cultural bias in self-reported attitude measures could have influenced the findings. Incorporating qualitative interviews in future research could provide a deeper understanding of nurses' emotional and ethical reflections on caring.

CONCLUSION

This study confirms that structured training and mentoring programs significantly enhance nurses' caring competence across knowledge, attitudes, and actions. The intervention group demonstrated substantial improvements, with an 88.2% increase in knowledge, highlighting the effectiveness of active, scenario-based learning reinforced by mentoring; a 71.1% improvement in attitudes, emphasizing that emotional and moral engagement grows through sustained mentor support; and a 73.7% enhancement in caring actions, reflecting the success of practical, hands-on guidance and biweekly reflection sessions. The combination of formal training, mentoring, and reflective case discussions was shown to accelerate nurses' transition from knowledge acquisition to practical application, thereby fostering sustainable, patient-centred caring behaviours. Additionally, the study

underscores the importance of cultural adaptation, supporting Leininger's and Swanson's theories by demonstrating that caring behaviours are enhanced when nurses integrate empathy with culturally sensitive practices—an approach especially relevant in the diverse healthcare setting of East Nusa Tenggara (NTT). Furthermore, the findings align with Benner's theory by illustrating that mentorship expedites skill progression, transforming nurses from competent to proficient caregivers through the integration of clinical knowledge into compassionate practice. The future research should consider several directions. Longitudinal studies spanning six to twelve months are recommended to assess the sustainability of behaviour change and its impact on patient outcomes. Additionally, cross-cultural comparisons with other Southeast Asian nations could help refine culturally adapted care models, ensuring their broader applicability. Qualitative exploration of nurses' emotional experiences during mentoring would provide deeper insights into the affective transformations underlying caring behaviours. Lastly, investigating digital mentoring innovations, such as virtual mentoring platforms, could enhance support for nurses in remote and underserved areas, broadening the reach and impact of structured training programs.

Recommendation

Building on the improvements achieved in this study, several key recommendations are proposed. First, continuous mentoring programs should be institutionalised by developing hospital-wide systems led by experienced nurses and nurse managers, supported by standardised guidelines for feedback, observation, and reflection to ensure that mentors consistently model best practices. Second, the training duration and frequency should be extended from three months to six to twelve months, with the incorporation of blended learning models, such as online modules combined with in-person mentoring, to accommodate nurses' busy schedules without disrupting clinical duties. Third, leadership involvement must be strengthened by engaging head nurses and nurse managers as active mentors, providing dedicated time or workload adjustments, and introducing mentorship leadership training to equip them with effective coaching skills. Fourth, caring training should be culturally tailored by integrating local values such as Timorese respect norms and spiritual healing approaches into the curriculum and involving community representatives in reflective discussions to bridge patient perspectives with nurses' caring actions, in line with Leininger's cultural care theory. Finally, the implementation of digital mentoring platforms is recommended to facilitate remote guidance, case discussions, and performance tracking, ensuring the continuity of mentorship even in resource-limited regions like NTT, and utilising e-learning modules with interactive simulations and AI-driven feedback to enhance knowledge retention.

Conflict of Interest

The authors declare that they have no competing interests.

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