Original Research

OPEN ACCESS

IJNHS

Enhancing Nursing Careers: The Role of Training and Work Environment Through Clinical Competence in X Sukabumi Hospital

Tioma Lusi Septiana Simarmata[1], Ratna Indrawati[2], Johanes[3]

Magister Administrasi Rumah Sakit, Universitas Esa Unggul, Jakarta

Article info	Abstract
	Background: Career development for healthcare professionals, particularly nurses, is a crucial aspect of Human Resource Management (HRM) in hospitals. At X Sukabumi Hospital, only 1.8% of the 159 nurses successfully advanced in their careers, despite the majority having more than 10 years of experience. **Objective**: This study examines the impact of training and work environment on nurses' career development, with clinical competence as a mediating variable. **Method**: A quantitative associative design with a cross-sectional approach was employed, using a questionnaire for data collection. The sample consisted of 159 nurses, and data were analyzed using the Three-Box Method and Structural Equation Modeling (SEM) with PLS v.03, incorporating T-tests and F-tests. **Result**: findings reveal that training, work environment, and clinical competence significantly influence nurses' career development (F-statistic = 86.55 > F-table = 2.81). However, training alone does not directly impact career development (p-value = 0.309), while the work environment has a significant effect (p-value = 0.000). Both training and work environment significantly influence clinical competence (p-value = 0.000), which in turn positively affects career development (p-value = 0.009). Furthermore, clinical competence plays a key mediating role (p-value= 0.018). **Conclusion**: In conclusion, training and work environment influence nurses' career development through clinical competence at X Sukabumi Hospital
	Keywords: training, work environment, clinical competence, career development, nursing career

INTRODUCTION

Career development of health workers, especially nurses, is one of the key components in Human Resource Management (HRM) in hospitals. The career development can be defined as a structured and planned effort to achieve a balance between individual career needs and organizational demands on human resources (1).

In the context of hospitals, nurse career development serves not only to improve individual competencies and skills, but also to ensure that health workers can provide high- quality services that support the achievement of hospital goals and improve the quality of health services. The nurse career development is the planning and implementation of a career plan that allows nurses to be placed at the appropriate level (2).

A nurse's career develops over time, based on the knowledge, skills, and experiences gained, both from formal education and interactions in the work environment. This process continues throughout life and consists of various stages, which include growth, exploration, establishment, maintenance and withdrawal, all of which are interrelated to the nurse's experience and development in the course of her career.

However, despite training and career development of nurses being a priority in hospital HRM, many challenges are faced in its implementation. In RS X Sukabumi, for example, internal data showed a significant gap between the existing career development policy and the actual achievement by the nursing staff. Out of a total of 159 nurses, only 1.8% had achieved the appropriate career path, despite the majority of nurses having worked for more than 10 years.

This reflects a bottleneck in the career development system that needs to be analyzed further. Factors such as training effectiveness, work environment conditions, and the lack of an integrated competency evaluation mechanism.

Several previous studies have shown the importance of career development for health workers, including nurses. A study (3) found that education and training have a significant positive influence on career development, especially in improving nurses' clinical skills and work motivation.

Marquis and Huston emphasize the importance of continuous career development over time, as well as the interaction between internal and external factors of individuals in their career journey (2). A study also found that clinical competence significantly affects nurses' performance, which in turn affects their career progression (4).

On the other hand, another study revealed that training, education, and competency improvement have a positive influence on nurses' performance and career development (5). This study also confirms the importance of integration between clinical experience, nursing science, and professional development (2). This finding is in line with the concept of career development which includes the dimensions of career adaptation, career decision- making, and maintenance of competence throughout a career.

Although previous studies have identified the influence of training, clinical competence, and work environment on career development for nurses, most research has not examined the interaction of these three factors simultaneously, especially in the context of class C hospitals. Additionally, there is a lack of research evaluating the effectiveness of career development policies in practice, particularly in hospitals with limited resources. Therefore, this study aims to fill this gap by examining the combined impact of these factors on the career development of nurses at X Sukabumi Hospital.

These studies underline that factors such as training, clinical competence, and work environment play an important role in the career development of nurses. While training and competency development are the main focus, a supportive work environment and clear organizational policies also contribute to the successful career development of healthcare workers.

Based on the overall explanation above, this study was conducted to analyze

the effect of training and work environment on nurses' career development and to prove that clinical competence can act as an intervening variable in this influence. The results of the analysis in this study are expected to be used as a consideration in the formulation of strategic steps by the management of X Sukabumi Hospital to overcome various problems related to nurse career development and the factors that influence it.

METHOD
Design

This study uses an associative, cross-sectional quantitative design that aims to determine the relationship between two or more variables. The associative research seeks to find a cause-and-effect relationship between the variables studied.

Sample, sample size, & sampling technique

The nurses were involved in this study who selected using total sampling technique. Total sampling is a sampling method in which all members of the population are used as research samples. This technique was used because the study population was 159 people, consisting of functional nurses at X Sukabumi Hospital. By using total sampling, this study can cover the entire population so that the results can represent the overall condition

Data collection process

The data collection technique was carried out by distributing questionnaires, namely a data collection technique by asking a list of questions to parties related to the problem to be studied and filled in by the respondents themselves in order to obtain data in the form of respondents' answers where the questions given were in accordance with the subject matter of the study, namely training, work environment, clinical competence and career development of nurses at X Sukabumi Hospital manually

Instrument for data collection

The results of the reliability test using Cronbach's Alpha and Composite Reliability. All constructs have Cronbach's Alpha values greater than 0.70, indicating excellent internal consistency. The Composite Reliability (rho_c) value is also more than 0.70 for each construct, indicating that the constructs are reliable. In addition, the Average Variance Extracted (AVE) value for each construct is above 0.50, indicating that the construct can explain more than 50% of the variance of its indicators. Overall, these results support the high reliability of the measurement model.

	Cronbach alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Competence Clinical	0.989	0.990	0.990	0.856
Environment Work	0.989	0.990	0.990	0.793
Training	0.975	0.976	0.978	0.800
Development Career	0.983	0.984	0.984	0.817

Data Analysis

Descriptive analysis is used to describe the characteristics of respondents and research variables. Structural Equation Model (SEM) with Partial Least Square (PLS) software version 3.0 was used to test the direct and indirect effects between independent variables and dependent variables.

Ethical consideration

This study has been approved by Esa Unggul University Research Ethics Commission No. 0925-01. 064/DPKE-KEP/FINAL-EA/UEU/II/2025. All respondents who are wiliness to participate in this study should sign the letter.

RESULT

The results of the Three Box Method analysis in the table can be explained as that Career Development is in the Needs Improvement category with a score of 100.125. This indicates that although nurses at X Sukabumi Hospital have opportunities to develop, there is still room for improvement in terms of providing greater opportunities for nurses' career growth. Support for career development needs to be improved so that nurses can further develop professionally. Training is in the Less Optimal category with a score of 95.29. This indicates that although

the training provided is sufficient, it is not fully optimal in meeting the needs of nurses. There is a need to improve the scope, relevance, and quality of training materials to better suit the needs in the field and be able to support the development of nurses' competencies more effectively.

The work environment is in the Moderately Supportive category with a score of 96.46. This indicates that the working environment conditions at X Sukabumi Hospital are quite good and support nurses in carrying out their duties. However, there are still elements in the work environment that can be improved to create a more comfortable and productive atmosphere for nurses. nurses, which in turn can improve their performance. This illustrates that nurses' clinical competence is already quite good, but still needs further strengthening and development in some areas. Thus, nurses need to get more training and experience to improve their clinical abilities in order to provide more optimal health services to patients.

Variables	Category		
	Low	Medium	High
Career Development		100.125	
Training		95.29	
Work Environment		96.46	
Clinical Competence		97.25	

Coefficient of determination (R^2)

The R-Square value which illustrates how much variance in the dependent variable can be explained by the independent variables in the model. In the model, the R-Square value for Clinical Competence is 0.624, and for Career Development it is 0.626, which indicates that these two variables are well explained by the model. The Adjusted R-Square values on the model were slightly lower, at 0.619 for Clinical Competence and 0.619 for Career Development, indicating an adjustment to the number of indicators in the model. Overall, the model showed a good fit in explaining the variance of the observed

Variables	R-square	R-square adjusted
Clinical Competence	0.624	0.619
Career Development	0.626	0.619

Model Fit Assessment

The SRMR (Standardized Root Mean Square Residual) value for the model used to measure model fit in PLS SEM analysis. In the model, the SRMR value for the Saturated Model and Estimated Model is 0.086, which indicates that the model has a fairly good fit, with an SRMR value close to 0.08 considered an indication of a good model. Overall, the SRMR values in this model indicate that the te_____ e fi

Variables	Saturated model	Estimated model
SRMR	0.086	0.086

Direct effect of independent variable to dependent variable

Table 5 showed the direct effect of independent variables with the dependent's variables. The result found that 1) clinical competence was associated with career development (p-value <.05); 2) work environment was associated with clinical competence (p-value <.05); 3) environment was associated with competence (p-value <.05); 4) the training was associated with clinical competence (p-value <.05); and 5)

Path	Path Coefficient	t	p value
Clinical Competence -> Career Development	0.311	2.628	0.009
Work Environment -> Competence Clinical	0.378	6.567	0.000
Work Environment -> Competence	0.452	5.484	0.000
Training -> Clinical Competence	0.485	8.751	0.000
Training -> Career Development	0.109	1.019	0.309

The Effect of Training, Work Environment and Clinical Competence simultaneously on Nurse Career Development.

The results showed a significant simultaneous effect between training, work environment, and clinical competence on career development, meaning that clinical competence becomes a link that strengthens the relationship between training and work environment with career development.

According to the theory proposed by Marquis and Huston (2), career development in the nursing context is influenced by various interrelated factors, including training and work environment. Training is considered the main factor that improves skills and knowledge, while a good work environment provides the necessary support for nurses to further develop their careers. Nurses' career development relies heavily on these two key aspects: opportunities to develop skills through relevant training and a work environment that supports professional growth. An environment that is safe, conducive, and provides space for nurses to grow will accelerate their career development process.

Based on the Three Box Method analysis conducted previously, the indicator with the score is Basic Training, which indicates that the basic training provided at X Sukabumi Hospital is considered quite effective by nurses in providing the basic knowledge and skills needed to perform their duties. Although in the medium category, this score indicates that the training provided is quite relevant and helpful in improving nurses' basic skills. The Work Environment also showed the highest scoring indicator in Safety and Security, indicating that nurses felt that the safety facilities were adequate. that exist in the hospital support them in carrying out their nursing duties. A good working environment, with adequate facilities, contributes to the comfort and improves the effectiveness of nurses' work.

Previous research provides evidence consistent with these findings revealed that work environment and training have a positive effect on job satisfaction and career development of nurses (6). Another study also found that training has a significant influence on nurses' competence and job satisfaction (7)

The Effect of Training on Nurse Career Development

The results of this study indicate that training does not significantly have a positive effect on nurses' career development. This indicates that although training can improve clinical competence, its direct influence on nurses' career development is not so strong.

Based on the Three-Box Method analysis, training has a value that falls into the medium category. This shows that although the training provided is adequate, its effect on nurses' career development is still somewhat less than optimal. The lowest indicator of continuous professional development programs has not had a significant impact on the quality of care provided to patients. This indicates that although training is available, its impact on nurses' work outcomes or quality of care is limited.

A study found that although training can improve nurses' technical skills, its effect on career development is not very significant (8). It was consistent with a previous study showed that although training has an influence on competence, its influence on career is more dependent on other factors such as experience and social support in the workplace (9). Thus, although training plays an important role in improving nurses' competence, this hypothesis is rejected because there is no significant influence between direct training and nurses' career development at X Sukabumi Hospital. The effect of training on career development may be more effective if mediated by other variables, such as clinical competence achieved through training and a supportive work environment.

Another result show that training has a significant influence on improving nurses' clinical competence. A study found that continuing professional development to maintain the competence (10). Another study showed the structured and continuous on-the-job training has a significant effect on improving clinical competence nurses. This training program, when implemented

appropriately, can strengthen clinical skills and prepare nurses to handle a variety of medical challenges (11).

The Effect of Work Environment on Nurse Career Development

The results of the analysis show that the work environment has a significant influence on the career development of nurses at X Sukabumi Hospital. This shows that good work environment conditions play a very important role in increasing opportunities career development of nurses

Based on the Three-Box Method analysis, the work environment, which shows a moderate category. However, although the average score was in the moderate category, the statement relating to safety facilities in the work unit scored the highest. This indicates that nurses feel quite satisfied with safety facilities and a sense of security in the workplace. In contrast, the Technology Integration dimension relating to the efficiency of the health information system in the workplace scored low, indicating that technological factors in the work environment still need to be improved.

Previous research provides a picture that is in line with these results. Gibson et al. (2012) asserted that a supportive work environment, including adequate facilities and efficient systems, contributes greatly to improved performance and career development (12)

A study suggests that participating in professional training/development is related to a lower risk of leaving current employment (13). Overall, this study shows that work environment does have a significant influence on nurses' career development at X Sukabumi Hospital. A conducive, safe, and supportive work environment can accelerate career development, especially if coupled with a positive work environment. with improvements in technology facilities and other support systems that are more efficient.

The Effect of Clinical Competence on Nurse Career Development

The results showed that clinical competence has a significant effect on nurses'

career development. This suggests that the higher a nurse's clinical competence, the greater their chances of experiencing positive career development.

Based on the results of the Three-Box Method, the Knowledge-Based Practice dimension received the lowest score, categorized as moderate. This indicates that while most nurses feel they have adequate knowledge, some lack confidence or face challenges in explaining procedures and interventions to patients and their families. This suggests that there is still room to enhance communication skills related to medical knowledge to be more effective in providing accurate information to patients and their families.

Previous research suggested that high clinical competence contributes significantly to improving nurses' performance, which in turn accelerates their career development (14). In addition, a study showed that nurses with better clinical competence have a greater chance of taking a higher position in the organization, as they are considered more capable of handling greater tasks and responsibilities (15). This is in line with the findings found that clinical nursing competence and the work environment differed according to years of experience. Therefore, interventions to improve clinical nursing competence should be developed for each experience' group considering the associations (16-17).

Thus, this study confirms that clinical competence has a significant influence on nurses' career development. Hence, hospitals need to continue to focus improving nurses' clinical skills as an important step in accelerating their career development.

Conclusion

The research findings are that good work environment training and clinical competence simultaneously affect nurses' career development. Partially, training has no effect on career development, but the work environment has an influence on career development, training was found to have an effect on clinical competence, also the work environment has an effect on clinical

competence, clinical competence has an important mediating role in increasing the effect of training and work environment on nurse career development in X Sukabumi Hospital

Limitation

Limited sample where the study only involved nurses from a particular hospital or health institution, so the results may not be representative for the entire health sector. The study was cross-sectional in nature, so it could not identify a definitive cause- and-effect relationship. Other Factors Not Considered: The study may not have considered other factors that influence nurses' career development, such as individual, organizational or other external factors.

Subjectivity of Judgement Where assessment of clinical competence and career development based on individual perceptions risks being subjective, which may affect the validity of the findings.

The results of the study may not be fully generalizable to other institutions or regions with different policy conditions or work cultures. The study did not consider the long-term impact of training and work environment on nurses' careers.

References
(1)   Marquis BL, Huston CJ. Leadership roles and management functions in nursing: Theory and application (8th ed.). Wolters Kluwer Health/Lippincott Williams & Wilkins. 2012.
(2)   Dessler G. Human resource management (14th ed.). Pearson. 2015
(3)   Marlina FN, Hermanto, Wahyulina S. The effect of work experience, competence, education & training (training) on employee career development at PT Air Minum Giri Menang (Perseroda) Mataram. International Journal of Multicultural and Multireligious Understanding. 2022; 9(11): 149-156. https://doi.org/10.18415/ijmmu.v9i11.4203
(4)   Onang, Y., Djawoto, & Prijati. (2023). The influence of competence, motivation and career development on nurse performance mediated by organizational commitment at Dr. TC. Hillers Maumere Regional General Hospital. Journal of Humanities and Social Studies, 7(2), 414-419. https://doi.org/10.33751/jhss.v7i2.7534
(5)   Rianti, S. A., Wahidi, K. R., & Banun, A. (2021). The Analysis of Education and Training Implementation Effects on Nurse Competence Improvement and Rewards over Nurse Performance at Bunda Margonda Hospital, Depok. *Journal of Multidisciplinary Academic*, 5(2), 148-154
(6)   Sunarno, N., Susita, D., & Wolor, C. W. (2022). Effect of work environment and training on job satisfaction through career development mediation. The International Journal of Social Sciences World, 4(1), 193-203. https://doi.org/10.5281/zenodo.6469149
(7)   Seno, Magito, Didin Hikmah Perkasa. (2023). The role of work satisfaction mediation in determining competency effects, career development and work stress on nursing performance in applying professional nursing models in the Soul Hospital Bali Province. Talent: Journal of Economics and Business, 1(1). https://lenteranusa.id
(8)   Rianti, S. A., Wahidi, K. R., & Banun, A. (2021). The Analysis of Education and Training Implementation Effects on Nurse Competence Improvement and Rewards over Nurse Performance at Bunda Margonda Hospital, Depok. *Journal of Multidisciplinary Academic*, 5(2), 148-154
(9)   Saputra, R. A., Setiadi, M. C. S., & Supriadi, B. (2024). Influence of competence, training, and career development on the performance of members of Hanudnas Pusdiklat Surabaya. Innovation Business Management and Accounting Journal, 3(1), 1-15. https://doi.org/10.1234/ibmaj.v3i1.20

24

(10) Rahmah NM, Hariyati TS, Sahar J. Nurses' efforts to maintain competence: a qualitative study. J Public Health Res. 2021 Dec 1;11(2):2736. doi: 10.4081/jphr.2021.2736

(11) Rahmah NM, Hariyati TS, Sahar J. Nurses' efforts to maintain competence: a qualitative study. J Public Health Res. 2021 Dec 1;11(2):2736. doi: 10.4081/jphr.2021.2736

(12) Gibson, J. L., Ivancevich, J. M., Donnelly, J. H., & Konopaske, R. (2014). *Organizations: Behavior, Structure, Processes*. McGraw-Hill Education

(13) Shiri R, El-Metwally A, Sallinen M, Pöyry M, Härmä M, Toppinen-Tanner S. The Role of Continuing Professional Training or Development in Maintaining Current Employment: A Systematic Review. Healthcare (Basel). 2023 Nov 3;11(21):2900. doi: 10.3390/healthcare11212900

(14) Marnisah, L., Kore, J. R. R., & Ora, F. H. (2022). Employee performance based on competency, career development, and organizational culture. Jurnal Aplikasi Manajemen, 20(3), 632–650. http://dx.doi.org/10.21776/ub.jam.2022.020.03. 13

(15) Sari, I. Y., Krisnandi, H., & Digdowiseiso, K. (2024). The influence of physical work environment, communication, motivation, and career development on employee performance at PT. Erlangga Karya Gemilang Jakarta. Journal of Social Science, 5(3), 845-855

(16) Saiga M, Yamamoto Y, Okuda R, Fukada M. Relationship Between Clinical Nursing Competence and Work Environment by Career Stage for Nurses with 1-10 Years of Clinical Experience. Yonago Acta Med. 2024 Jan 20;67(1):9-21. doi: 10.33160/yam.2024.02.002

(17) Shibiru S, Aschalew Z, Kassa M, Bante A, Mersha A. Clinical Competence of Nurses and the Associated Factors in Public Hospitals of Gamo Zone, Southern Ethiopia: A Cross-Sectional Study. Nurs Res Pract. 2023 Sep 26;2023:9656636. doi: 10.1155/2023/9656636