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DETERMINANTS OF IMPROVING SERVICE QUALITY BASED ON THE KOLCABA COMFORT MODEL IN THE EMERGENCY DEPARTMENT OF PMC HOSPITAL

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ABSTRACT
Kolcaba's Comfort Theory emphasizes holistic nursing care by fulfilling patients' comfort needs in four contexts: physical, psychospiritual, sociocultural, and environmental. The Emergency Department (ED) is a high-pressure healthcare setting that requires not only rapid and accurate clinical interventions but also comfort-based nursing services. This study aimed to analyze the determinants of Kolcaba Comfort Theory–based nursing care in the Emergency Department of PMC Hospital, Pekanbaru. This study employed a quantitative method with a cross-sectional design. A total of 96 respondents were selected using purposive sampling. Data were collected using a questionnaire. The questionnaire was tested for validity and reliability before data collection. All items were declared valid based on the Pearson correlation test, and the instrument was reliable with a Cronbach's alpha value > 0.70. Analyzed using chi-square test for bivariate analysis and multiple logistic regression for multivariate analysis. The bivariate analysis showed significant associations between age (p=0.027), educational level (p=0.001), effective nurse communication (p=0.001), and service environment (p=0.001) with Kolcaba Comfort Theory–based nursing care. However, multivariate analysis revealed that only educational level (p=0.000; OR=31.889; 95% CI=6.395–159.014) and service environment (p=0.024; OR=0.155; 95% CI=0.031–0.785) remained statistically significant. Educational level was identified as the most dominant determinant. The final model showed a Nagelkerke R Square value of 0.707 and an overall classification accuracy of 90.6%. Conclusion: Kolcaba Comfort Theory–based nursing care in the Emergency Department of PMC Hospital, Pekanbaru is significantly influenced by patients' educational level and the service environment, which contribute to achieving holistic patient comfort.

Keywords: education level; emergency department; kolcaba comfort theory; logistic regression; nursing care; service environment

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INTRODUCTION

Nursing services in the Emergency Department (ED) have unique characteristics that require nurses to deliver care that is rapid, accurate, and empathetic in complex and dynamic situations. The high workload in the ED has the potential to affect the quality of nursing care and the level of patient comfort during treatment (Hughes, 2021). Therefore, a nursing approach that is oriented toward patient comfort is essential to improve the quality of care in the ED. Kolcaba's Comfort Theory is a relevant theoretical approach as it emphasizes the fulfillment of patients' needs holistically, including physical, psychospiritual, social, and environmental aspects (Kolcaba, 2018). This model explains that patient comfort consists of three main dimensions: relief, ease, and transcendence, which can be achieved through integrated and patient-centered nursing interventions. Several studies have shown that the application of Kolcaba's Comfort Theory significantly improves patient comfort, satisfaction, and clinical outcomes compared to conventional care (Lin et al., 2024; RCT, 2023).

The concept of person-centered care, which has developed globally, also places patient comfort at the core of modern nursing services. The Person-Centred Nursing Framework emphasizes the importance of patient experience, a supportive work environment, and patient involvement in clinical decision-making, which aligns with the principles of Kolcaba's Comfort Theory (McCance & McCormack, 2025).

In addition to theoretical approaches, various factors are known to influence patients' perceptions of nursing care and their level of comfort during treatment in the ED. Patient characteristics such as age, gender, education level, and occupation contribute to differences in expectations and evaluations of healthcare services (Notoatmodjo, 2020). Furthermore, therapeutic communication by nurses, based on patient perceptions, is a key determinant in creating a sense of security, enhancing trust, and improving patient satisfaction (Nursalam, 2021; Watson, 2022). The ED environment, including noise, lighting, privacy, room temperature, and cleanliness, also plays a significant role in shaping patient experience and comfort (Potter & Perry, 2021).

In Indonesia, the implementation of Kolcaba's Comfort Theory in nursing services remains limited, particularly in emergency settings. Most previous studies have focused on patient satisfaction or general service quality without integrating patient characteristics, therapeutic communication, and the care environment into a single analytical model. This indicates a research gap that needs further exploration, especially in the ED context (Kolcaba, 2018; Ministry of Health of the Republic of Indonesia, 2021).

PMC Hospital, as one of the referral hospitals in Riau Province, is facing an increasing number of patient visits along with demands for digital-based service transformation, requiring nurses to maintain high-quality, comfort-oriented care (PMC Hospital, 2024). Therefore, this study is important to identify factors associated with nursing care based on Kolcaba's Comfort Theory, including patient characteristics, therapeutic communication based on patient perceptions, and the ED environment. The findings of this study are expected to serve as a basis for developing theory-based nursing practices and improving the quality of nursing care in the ED. The purpose of this study was to analyze the determinants of patient characteristics, therapeutic communication based on patient perceptions, and the care environment associated with nursing services based on Kolcaba’s Comfort Model in the Emergency Department of PMC Hospital.

METHOD

This study employed a quantitative research design with an observational analytic approach using a cross-sectional method. The study was conducted in the Emergency Department of PMC Hospital, Pekanbaru City, from November to December 2025. The study population consisted of all patients receiving nursing care in the ED, with a total sample of 96 respondents selected using purposive sampling based on inclusion and exclusion criteria.

The independent variables in this study included patient characteristics (age, gender, education level, and occupation), therapeutic communication by nurses based on patient perceptions, and the ED care environment. The dependent variable was nursing care based on Kolcaba's Comfort Model, which includes the dimensions of relief, ease, and transcendence. The research instrument used a structured questionnaire that has been tested for validity and reliability. The questionnaire was tested for validity and reliability before data collection. All items were declared valid based on the Pearson correlation test, and the instrument was reliable with a Cronbach’s alpha value > 0.70.

Data were collected through questionnaire completion by respondents after receiving nursing care in the ED. Data analysis included univariate, bivariate, and multivariate analyses. Multivariate analysis was performed using binary logistic regression to determine the most dominant factors associated with nursing care based on Kolcaba's Comfort Model, with a significance level of 0.05.

This study obtained ethical approval, and all respondents provided informed consent prior to participation.

RESULT

Table 1.
Distribution of Respondent Characteristics Based on Age, Gender, Education, Occupation, Communication, Environment, and Service-Based Kolcaba Model (n=96)

Characteristics	Category	f	%
Age	1. 19-59 years	83	86.5
	2. >60 years	13	13.5
Gender	1. Man	41	42.7
	2. Woman	55	57.3
Education	1. Middle school and below	66	69.0
	2. Higher education	30	31.0
Work	1. Doesn't work	24	25.0
	2. Work	72	75.0
Nursing Communication	1. Not good	43	44.8
	2. Good	53	55.2
Environment	1. Not good	44	45.8
	2. Good	52	54.2
Nursing Services Based on Kolcaba's Comfort Theory	1. Not good	33	34.4
	2. Good	63	65.6

The majority of respondents were aged 19–59 years (86.5%) and female (57.3%). Most respondents had a secondary or lower education level (69.0%) and were employed (75.0%). In terms of service, the majority of respondents rated nurse communication (55.2%) and the service environment (54.2%) as good. Furthermore, 65.6% of respondents rated Kolcaba-based nursing services as good.

Table 2.
Relationship between environmental characteristics (age, gender, education, occupation), communication with Kolcaba model-based services (n=96)

Variables	Category	Nursing Services Based on Kolcaba's Comfort Theory		OR 95% CI	*p* -value
		Not enough (%)	Good (%)		
Age	19–59 years	25 (30.1)	58 (69.9)	0.269 (0.080 – 0.905)	0.027*
	>60 years	8 (61.5)	5 (38.5)		
Gender	Man	12 (29.3)	29 (70.7)	0.670 (0.282 – 1.591)	0.363
	Woman	21 (38.2)	34 (61.8)		
Education	Lower middle class	6 (9.1)	60 (90.9)	0.011 (0.003 – 0.048)	0.001*
	Higher education	27 (90.0)	3 (10.0)		
Work	Doesn't work	6 (25.0)	18 (75.0)	0.556 (0.196 – 1.572)	0.264
	Work	27 (37.5)	45 (62.5)		
Communication categories	Not good	29 (67.4)	14 (32.6)	25,375 (7,625 – 84,445)	0.001*
	Good	4 (7.5)	49 (92.5)		
Environmental categories	Not good	30 (68.2)	14 (31.8)	35,000 (9,283 – 131,960)	0.001*
	Good	3 (5.8)	49 (94.2)		

Description:
OR = Odds Ratio (Mantel-Haenszel Common OR)
CI = Confidence Interval 95%
*p-value is significant if $p < 0.05$

There is a significant relationship between age (p=0.027), education (p=0.001), nurse communication (p=0.001), and service environment (p=0.001) with Kolcaba model-based services. Meanwhile, gender (p=0.363) and occupation (p=0.264) did not show a significant relationship. The nurse communication and service environment variables showed a high strength of relationship, with ORs of 25.375 and 35.000, respectively.

Table 3.
Final Logistic Regression Model

Variables	p-value	OR (Exp(B))	95% CI OR
Education	0.001	31,889	6,395-159,014
Environment	0.024	0.155	0.031-0.785

Nagelkerke $R^2 = 0.707$

The variables that have a dominant influence on Kolcaba model-based services are education level (p=0.000; OR=31.889) and service environment (p=0.024; OR=0.155). The Nagelkerke R Square value of 0.707 indicates that the model is able to explain 70.7% of the variation in services based on the Kolcaba model.

DISCUSSION

The results of the univariate analysis showed that the majority of respondents were in the productive age group (19–59 years), female, had a lower to middle level of education, and were employed. This condition indicates that patients visiting the Emergency Department (ED) have complex care needs, both physically and psychosocially, particularly in high-demand environments such as emergency settings (Hughes, 2021; Indonesian Ministry of Health, 2022). The relatively low level of education among most respondents may influence their understanding of health information, making therapeutic communication a crucial factor in improving patient comfort (Notoatmodjo, 2020). In addition, the presence of negative evaluations regarding nurse communication and the care environment suggests that non-technical aspects of nursing services remain a challenge in implementing comfort-based care (Nursalam, 2021).

From the perspective of Kolcaba's Comfort Theory, these findings indicate that patient comfort is not solely dependent on clinical interventions but also on interpersonal interactions and a supportive care environment (Kolcaba, 2018; Wilson & Kolcaba, 2020). Overall, most respondents rated nurse communication (55.2%) and the care environment (54.2%) as good, although a notable proportion rated them as poor. This suggests that non-technical aspects of nursing care namely communication and environment still need improvement to achieve optimal patient comfort. Environmental factors such as noise, lighting, and privacy have been shown to significantly influence patient comfort in clinical settings (Potter & Perry, 2022; Haryanto, 2021). Furthermore, 65.6% of respondents rated nursing care based on Kolcaba's Comfort Model as good, while 34.4% rated it as poor, highlighting the need for improvements in communication and environmental aspects (Nuraini & Prasetyo, 2022).

The bivariate analysis revealed that education level, nurse communication, and the care environment were significantly associated with nursing care based on Kolcaba's Comfort Model, whereas age, gender, and occupation showed no significant relationship. Education level plays an important role in shaping patients' perceptions of care, as individuals with higher education tend to have greater expectations and are more critical in evaluating service quality (Notoatmodjo, 2020). This finding suggests that comfort is subjective and influenced by patients' cognitive factors.

Nurse communication was found to have a strong relationship with patient comfort. Effective therapeutic communication enhances patients' sense of security, trust, and satisfaction, which are integral components of caring-based nursing practice (Watson, 2022; Nursalam, 2021). This aligns with the psychospiritual and sociocultural dimensions in Kolcaba's Comfort Theory. The care environment also showed a significant association, where a comfortable, safe, and conducive ED environment contributed to reducing patient anxiety. A supportive work and care environment has been shown to improve both patient outcomes and nursing performance (Setiawan & Hidayah, 2022; Potter & Perry, 2022). This emphasizes that the environmental dimension is a key component in creating patient comfort in emergency settings.

The multivariate analysis indicated that education level was the most dominant factor influencing nursing care based on Kolcaba's Comfort Model (p = 0.000; OR = 31.889). This suggests that patients with higher education were approximately 31.9 times more likely to perceive the care as poor compared to those with lower to middle education levels. Theoretically, education affects individuals' ability to understand health information, form expectations, and evaluate the quality of care received (Notoatmodjo, 2025). Patients with higher education tend to have higher standards, making them more critical in assessing comfort-related aspects of care.

This finding is consistent with Kolcaba's Comfort Theory, which states that comfort is a subjective experience influenced by individual perceptions and cognitive abilities (Kolcaba, 2015; Kolcaba, 2018). Additionally, higher health literacy among well-educated patients contributes to their evaluation of nursing care experiences. Although nurse communication and the care environment showed significant associations in the bivariate analysis, they were not dominant factors in the multivariate model. This indicates that, after controlling for other variables, the influence of education was stronger. However, the care environment remains an important factor in promoting patient comfort, particularly within the environmental dimension, which is an integral part of Kolcaba's theory (March & McCormack, 2020; Haryanto, 2021).

CONCLUSION

Nursing care based on Kolcaba's Comfort Model in the Emergency Department is influenced by several factors, with education level and the care environment identified as key determinants. The analysis revealed that education level was the most dominant factor, with higher-educated patients being more likely to perceive care as inadequate compared to those with lower to middle education levels. In addition, nurse communication and the care environment were significantly associated with comfort-based care in the bivariate analysis, although they were not dominant factors in the multivariate analysis. This indicates that patient comfort is influenced not only by service-related factors but also by individual cognitive characteristics and perceptions.

REFERENCES

Benner, P. (2021). From novice to expert: Excellence and power in clinical nursing practice . Addison-Wesley.

Ministry of Health of the Republic of Indonesia. (2021). Guidelines for emergency services in hospitals . Ministry of Health of the Republic of Indonesia.

Ministry of Health of the Republic of Indonesia. (2023). Guidelines for integrated emergency services . Ministry of Health of the Republic of Indonesia.

Hariyati, RTS, & Safitri, E. (2020). Nurse workload management. Indonesian Nursing Journal, 23 (3), 174–182. https://doi.org/10.7454/jki.v23i3.1203

Haryanto, J. (2021). Work environment management in hospitals . Jakarta: EGC.

Hughes, R.G. (2021). Patient safety and quality: An evidence-based handbook for nurses . Agency for Healthcare Research and Quality.

Ministry of Health of the Republic of Indonesia. (2022). Emergency Installation Service Standards . Ministry of Health of the Republic of Indonesia.

Kolcaba, K. (2015). Comfort theory and practice: A vision for holistic health care and research . Springer Publishing Company.

Kolcaba, K. (2018). Comfort theory and practice: A vision for holistic health care and research . Springer.

Kurniawan, A., & Siregar, LD (2023). Evaluation of caring-based handover instruments and their application in nursing practice. Jakarta: Salemba Medika.

March, A., & McCormack, B. (2020). Nursing theories in practice: Application in modern healthcare. Journal of Holistic Nursing, 38 (4), 391–400. https://doi.org/10.1177/0898010119889701

Notoatmodjo, S. (2020). Introduction to Public Health Science . Jakarta: Rineka Cipta.

Notoatmodjo, S. (2020). Health promotion and health behavior . Jakarta: Rineka Cipta.
Notoatmodjo, S. (2025). Health research methodology . Jakarta: Rineka Cipta.
Nursalam. (2021). Nursing management: Application in professional practice . Jakarta: Salemba Medika.
Nuraini, S., & Prasetyo, E. (2022). Implementation of the Kolcaba comfort model in the ER and its impact on patient satisfaction. Journal of Holistic Nursing, 14 (3), 210–218. https://doi.org/10.31289/jhk.v14i3.8765
Potter, P. A., & Perry, A. G. (2022). Fundamentals of nursing (11th ed.). Elsevier.
PMC Hospital. (2024). PMC Annual Report 2024. Pekanbaru: PMC Hospital.
Sari, R., & Putri, A. (2023). The effect of workload on patient satisfaction in the ER. Journal of Clinical Nursing, 11 (2), 89–97. https://doi.org/10.31000/jkk.v11i2.10430
Setiawan, A., & Rachmawati, PD (2021). The relationship between nurses' work experience and service quality in the Emergency Department. Journal of Nursing Science, 9 (1), 45–52.
Setiawan, S., & Hidayah, N. (2022). Work environment and nurse performance. Journal of Professional Nursing, 10 (2), 98–105. https://doi.org/10.24198/jkp.v10i2.37800
Sugiyono. (2022). Quantitative, qualitative, and R&D research methods . Bandung: Alfabeta
Watson, J. (2022). Nursing: The philosophy and science of caring (Rev. ed.). Boulder, CO: University Press of Colorado.
Wijayanti, D., & Lestari, R. (2023). Nurse characteristics and patient comfort in the ER: A correlation study. Indonesian Nursing Journal, 26 (1), 10–20. https://doi.org/10.7454/jki.v26i1.7894
Wilson, L., & Kolcaba, K. (2020). Comfort care: A concept analysis. Nursing Forum, 55 (2), 208–215. https://doi.org/10.1111/nuf.12440
World Health Organization (WHO), & Council for International Organizations of Medical Sciences (CIOMS). (2021). International ethical guidelines for health-related research involving humans . Geneva: WHO.
Yuliana, D., & Susilo, AP (2021). The effect of workload on nurse performance in the emergency room. Journal of Health Sciences, 12 (1), 65–73. https://doi.org/10.36763/jik.v12i1.303
Yulianti, R., et al. (2022). Workload and its implications for the quality of care in the Emergency Department. Journal of Public Health, 18 (2), 134–142. https://doi.org/10.20473/jkm.v18i2.2022.134-142