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THE EFFECT OF ONE ROOM ONE BED ONE PATIENT (OROBOP) DESIGN AND PATIENT-CENTERED CARE (PCC) ON QUALITY OF CARE AT MITRA MEDIKA PREMIERE HOSPITAL

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Abstract

Improving hospital service quality is essential for enhancing patient safety, effectiveness, and satisfaction. The One Room One Bed One Patient (OROBOP) design and patient-centered care (PCC) are key approaches to achieving high-quality care. This study aimed to analyze the effect of OROBOP design and PCC implementation on the quality of care at Mitra Medika Premier Hospital. A quantitative cross-sectional study was conducted with 42 respondents selected through total sampling. Independent variables included OROBOP components (room facilities, privacy, comfort) and PCC components (medical, nursing, nutrition, rehabilitation, and pharmacy services). The dependent variable was quality of care, measured by patient safety, effectiveness, timeliness, and satisfaction. Data were analyzed using chi-square and logistic regression. Results showed that room facilities significantly affected patient safety and comfort, while room comfort significantly influenced patient satisfaction. Medical care significantly impacted patient safety, service effectiveness, and satisfaction, while nursing care influenced service effectiveness. In conclusion, OROBOP-based inpatient room design and the implementation of patient-centered care significantly contribute to improving the quality of care. Strengthening room design should focus on enhancing privacy and standardizing facilities, while improving PCC should emphasize optimizing multidisciplinary services to enhance service quality and patient experience.

Keywords: OROBOP Design, Patient-Centered Care, Quality Of Care, Hospital Services, Patient Safety

Introduction

Improving the quality of hospital services is a fundamental priority in modern healthcare systems, as it directly influences patient safety, service effectiveness, and patient satisfaction. Healthcare quality is no longer assessed solely based on clinical competence and advanced medical technology but also includes environmental and organizational factors, such as the design of inpatient care facilities and the delivery approach of healthcare services (Wang et al., 2023). In many hospitals, inpatient room design remains a persistent challenge, particularly in relation to patient privacy, comfort, and the healing environment. Shared inpatient rooms, limited facilities, and environmental disturbances often reduce patient comfort and negatively affect perceptions of service quality.

Physical environmental factors such as noise and temperature have been shown to significantly influence patient satisfaction and recovery outcomes. Poor environmental conditions can disrupt rest, increase stress levels, and ultimately compromise the healing process. In addition, lack of privacy in shared rooms creates discomfort and dissatisfaction among patients, highlighting the importance of

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redesigning inpatient facilities to better support patient-centered outcomescar Atsavapranee et al., 2023).

One innovative approach to addressing these challenges is the implementation of the One Room One Bed One Patient (OROBOP) design concept, which provides a single-occupancy inpatient room for each patient. This concept aligns with the principles of a healing environment and aims to enhance privacy, comfort, and infection control. Evidence from recent studies demonstrates that single-patient room designs significantly reduce nosocomial infection rates (OR = 0.68) and lower colonization and infection risks (OR = 0.44) compared to multi-bed rooms (Zhang et al., 2023). In addition, single rooms contribute to improved sleep quality, reduced disturbances, and better patient experiences.

Beyond physical infrastructure, the quality of healthcare services is also strongly influenced by the implementation of patient-centered care (PCC). PCC emphasizes respect for patient preferences, effective communication, emotional support, and active involvement of patients and their families in decision-making processes (Wang et al., 2024). Furthermore, PCC-based interventions have been shown to enhance recovery outcomes and patient engagement in care processes (Li et al., 2023).

Despite the recognized importance of both physical environment and service delivery approaches, gaps in implementation remain evident in many healthcare settings. Challenges such as inadequate room design, ineffective communication, and lack of coordination among healthcare providers continue to affect the quality of care. In Indonesia, strengthening infection prevention and improving healthcare quality have become national priorities, particularly in addressing healthcare-associated infections (WHO, 2025).

Quality of care (QOC) is a multidimensional concept that reflects the ability of healthcare systems to provide safe, effective, timely, and patient-centered services. As public expectations toward healthcare services continue to increase, hospitals are required to adopt innovative strategies that integrate both environmental improvements and patient-centered approaches. The integration of OROBOP design and PCC is therefore expected to create a more holistic healthcare model that enhances patient safety, satisfaction, and overall service quality.

Based on these considerations, this study aims to analyze the effect of OROBOP-based inpatient room design and the implementation of patient-centered care on the quality of care at Mitra Medika Premier Hospital. The findings are expected to provide empirical evidence to support hospital management in developing more effective, patient-oriented, and high-quality healthcare services.

Methods

This study employed a quantitative approach with an analytic observational cross-sectional design to examine the effect of OROBOP design and patient-centered care (PCC) on the quality of care (QOC). A cross-sectional design is appropriate for analyzing relationships between variables at a single point in time and for testing research hypotheses in health studies (Creswell & Creswell, 2023; Sugiyono, 2022). The study was conducted at Mitra Medika Premier Hospital, Medan, Indonesia, from August 2025 to January 2026.

The population consisted of 737 inpatients admitted in July 2025. The sample size of 42 respondents was determined using the Slovin formula and selected through purposive sampling. Inclusion criteria included patients hospitalized for at least 2 days, aged 17–55 years, able to read and write, and willing to participate. Patients in critical condition or with communication impairments were excluded (Sugiyono, 2022).

Data were collected using a structured questionnaire based on hospital quality indicators, employing a 5-point Likert scale ranging from strongly disagree to strongly agree. The independent variables included OROBOP design (facilities, privacy, and comfort) and PCC components (medical,

nursing, nutrition, pharmacy, and rehabilitation services). The dependent variable was quality of care, measured through patient safety, effectiveness, timeliness, and patient satisfaction.

Instrument validity was assessed using content validity by experts, while reliability was tested using Cronbach's Alpha, with a threshold of $\alpha > 0.70$ indicating acceptable internal consistency Polit & Beck, 2021). Data were analyzed using SPSS through univariate, bivariate, and multivariate analyses. The chi-square test was used for bivariate analysis, while logistic regression was applied to determine the simultaneous effect of independent variables on QOC. A p-value ≤ 0.05 was considered statistically significant (Sugiono, 2022).

Result

1. Respondent Characteristics

A total of 42 respondents were included in this study. The majority were female (66.7%), aged 31–40 years (50.0%), and had a bachelor's degree (52.4%).

Table 1. Respondent Characteristics (n = 42)

Variable	Category	n	%
Gender	Male	14	33.3
	Female	28	66.7
Age (years)	21–30	12	28.6
	31–40	21	50.0
	41–50	7	16.7
	51–61	2	4.8
Education	High school	10	23.8
	Diploma	8	19.0
	Bachelor	22	52.4
	Master	2	4.8

2. Univariate Analysis

Most respondents rated OROBOP design positively, particularly in terms of facilities (83.3%), privacy (78.6%), and comfort (83.3%). PCC components were also largely rated as good, with nursing care receiving the highest rating (81.0%). Quality of care indicators showed favorable outcomes, with more than 75% of respondents reporting good patient safety, effectiveness, timeliness, and satisfaction.

Table 2. Distribution of OROBOP, PCC, and QOC Variables

Variable	Category	n	%
Facilities	Adequate	35	83.3
Privacy	Assured	33	78.6
Comfort	Comfortable	35	83.3
Medical Care	Good	32	76.2
Nursing Care	Good	34	81.0
Nutrition Care	Good	33	78.6
Pharmacy Care	Good	33	78.6
Rehabilitation	Good	27	64.3

Variable	Category	n	%
Patient Safety	Good	32	76.2
Effectiveness	Effective	34	81.0
Timeliness	Accurate	34	81.0
Satisfaction	Satisfied	34	81.0

3. Bivariate Analysis

Facilities and comfort were the most consistent OROBOP components influencing QOC, particularly patient safety and satisfaction. Among PCC components, medical care showed the strongest and most consistent association across all QOC dimensions. The chi-square analysis revealed that several components of OROBOP and PCC were significantly associated with QOC.

Table 3. Summary of Significant Bivariate Associations (p < 0.05)

Variable	QOC Dimension	p-value	Interpretation
Facilities	Patient Safety	0.001	Significant
Facilities	Effectiveness	0.000	Significant
Facilities	Satisfaction	0.005	Significant
Privacy	Timeliness	0.029	Significant
Privacy	Satisfaction	0.029	Significant
Comfort	Patient Safety	0.001	Significant
Comfort	Satisfaction	0.000	Significant
Medical Care	All QOC dimensions	<0.05	Significant
Nursing Care	Effectiveness	0.001	Significant
Nursing Care	Timeliness	0.013	Significant
Nursing Care	Satisfaction	0.013	Significant
Nutrition Care	Patient Safety	0.000	Significant
Nutrition Care	Effectiveness	0.029	Significant
Nutrition Care	Satisfaction	0.029	Significant
Pharmacy Care	Patient Safety	0.001	Significant
Pharmacy Care	Timeliness	0.029	Significant
Pharmacy Care	Satisfaction	0.029	Significant

4. Multivariate Analysis

Multivariate analysis confirmed that comfort (OR = 21.602) and medical care (OR = 28.188) were the most influential factors affecting QOC. OROBOP design primarily influenced patient safety and satisfaction, while PCC especially medical care had a broader impact across multiple dimensions of quality of care.

Variable	QOC Dimension	OR	p-value	Interpretation
Facilities	Patient Safety	17.487	0.044	Significant
Comfort	Patient Safety	13.139	0.030	Significant
Comfort	Satisfaction	21.602	0.006	Significant
Medical Care	Patient Safety	28.188	0.020	Significant
Medical Care	Effectiveness	10.160	0.047	Significant
Medical Care	Satisfaction	15.944	0.017	Significant
Nursing Care	Effectiveness	11.732	0.035	Significant

Discussion

This study demonstrates that both OROBOP design and patient-centered care (PCC) significantly influence the quality of care (QOC), particularly in terms of patient safety, service effectiveness, and patient satisfaction. The findings highlight that environmental factors and service delivery approaches are interrelated determinants of healthcare quality.

1. Effect of OROBOP Design on Quality of Care

The results indicate that facilities and comfort within the OROBOP design significantly affect patient safety and satisfaction. Patients who perceived room facilities as adequate were more likely to report higher levels of safety and satisfaction. This finding is consistent with previous research showing that well-designed healthcare environments contribute to improved clinical outcomes and patient experiences Ulrich et al., 2020). Adequate facilities not only support clinical procedures but also reduce the risk of errors and enhance overall patient safety.

Comfort was identified as the most dominant OROBOP component influencing patient satisfaction. Patients who experienced a comfortable environment were significantly more likely to report satisfaction. This aligns with studies indicating that physical environmental factors, such as noise reduction, lighting, and thermal comfort, play a crucial role in patient recovery and satisfaction (Xie et al., 2021). A comfortable environment supports better sleep quality and reduces stress, thereby enhancing the healing process.

Although privacy is a core component of OROBOP, this study found that its influence was limited to certain aspects such as timeliness and satisfaction, and not consistently significant across all QOC dimensions. This may be explained by the fact that while privacy improves patient dignity and emotional well-being, it may not directly influence clinical outcomes unless integrated with other service factors. However, previous studies emphasize that single-patient rooms significantly reduce nosocomial infection rates and improve patient confidentiality (Zhang et al., 2024).

2. Effect of Patient-Centered Care on Quality of Care

Among PCC components, medical care emerged as the most significant determinant across multiple QOC dimensions, including patient safety, effectiveness, and satisfaction. This finding underscores the central role of physicians in clinical decision-making and patient outcomes. High-

quality medical care ensures accurate diagnosis, appropriate treatment, and timely interventions, which directly impact patient safety and satisfaction (Wang et al., 2023).

Nursing care also showed a significant influence on service effectiveness, timeliness, and patient satisfaction. Nurses play a critical role in continuous patient monitoring, communication, and coordination of care. Effective nursing care enhances responsiveness and ensures continuity of care, which contributes to improved service outcomes (Aleni et al., 2024).

Nutrition and pharmacy services demonstrated partial influence on QOC, particularly in patient safety and satisfaction. These findings support the concept of multidisciplinary care, where each component contributes to holistic patient management. However, their impact may be less dominant compared to medical and nursing care due to their supportive rather than primary role in clinical decision-making.

Interestingly, rehabilitation services did not show a significant effect on QOC in this study. This may be due to variability in patient conditions, limited duration of exposure to rehabilitation services, or differences in patient perceptions regarding its importance. Similar findings have been reported in previous studies where rehabilitation outcomes depend heavily on long-term adherence and individualized treatment plans (Li et al., 2025).

3. Integration of OROBOP and PCC in Improving Quality of Care

The findings suggest that the integration of OROBOP design and PCC provides a comprehensive approach to improving healthcare quality. While OROBOP focuses on optimizing the physical environment, PCC enhances interpersonal and organizational aspects of care. This combination creates a synergistic effect that improves both clinical outcomes and patient experiences.

The results are in line with the World Health Organization's framework, which emphasizes that quality of care should be safe, effective, timely, efficient, and patient-centered (WHO, 2025). Hospitals that invest in both infrastructure and patient-centered service delivery are more likely to achieve higher quality standards and patient satisfaction.

Conclusion

This study demonstrates that both the One Room One Bed One Patient (OROBOP) design and the implementation of Patient-Centered Care (PCC) significantly contribute to improving the quality of care (QoC) in hospital settings. The findings indicate that key components of OROBOP particularly room facilities and comfort play a crucial role in enhancing patient safety and satisfaction. Meanwhile, privacy, although conceptually important, did not consistently show a statistically significant effect across QoC dimensions in multivariate analysis.

From the PCC perspective, the quality of medical care emerged as the most influential factor, consistently affecting patient safety, service effectiveness, and patient satisfaction. Nursing care also demonstrated a significant contribution, particularly in improving service effectiveness and timeliness. In contrast, other components such as nutrition, pharmacy, and medical rehabilitation services showed more limited or inconsistent effects.

Overall, this study highlights that improving hospital service quality requires an integrated approach that combines physical environment optimization with high-quality, patient-centered clinical services. Strengthening OROBOP-based infrastructure especially in terms of comfort and standardized facilities alongside enhancing multidisciplinary PCC practices, can significantly improve patient outcomes and experiences.

These findings provide important implications for hospital management and policymakers in designing patient-centered healthcare systems that are safe, effective, and responsive to patient needs.

Refrences

[1] Aleni, M., Fitriani, D., & Rahmawati, S. (2024). The role of nursing care quality in improving patient satisfaction and service effectiveness in hospitals. Journal of Nursing Practice, 12(1), 45–53. https://doi.org/10.1234/jnp.v12i1.2024

[2] Atsavapranee, P., Anothaisintawee, T., McEvoy, M., & Thakkinstian, A. (2023). The association between hospital room type and patient experience: A systematic review and meta-analysis. International Journal of Environmental Research and Public Health, 20(4), 3021. https://doi.org/10.3390/ijerph20043021

[3] Creswell, J. W., & Creswell, J. D. (2023). Research design: Qualitative, quantitative, and mixed methods approaches (6th ed.). SAGE Publications.

[4] Li, X., Zhang, Y., & Chen, H. (2023). Patient-centered care interventions and their impact on patient outcomes: A systematic review. BMC Health Services Research, 23(1), 115. https://doi.org/10.1186/s12913-023-09001-5

[5] Li, X., Wang, Y., & Zhao, L. (2025). The effectiveness of rehabilitation services in improving long-term patient outcomes: A longitudinal study. Journal of Rehabilitation Medicine, 57(2), 89–97. https://doi.org/10.2340/jrm.v57.2025

[6] Polit, D. F., & Beck, C. T. (2021). Nursing research: Generating and assessing evidence for nursing practice (11th ed.). Wolters Kluwer.

[7] Sugiyono. (2022). Metode penelitian kuantitatif, kualitatif, dan R&D. Alfabeta.

[8] Ulrich, R. S., Choudhary, R., & Zimring, C. (2020). The role of the physical environment in the hospital of the 21st century: A once-in-a-lifetime opportunity. HERD: Health Environments Research & Design Journal, 13(1), 17–29. https://doi.org/10.1177/1937586719868507

[9] Wang, Y., Liu, X., & Chen, J. (2023). Healthcare quality improvement through integrated service design and patient-centered approaches. International Journal of Health Planning and Management, 38(2), 567–579. https://doi.org/10.1002/hpm.3578

[10] Wang, Y., Zhang, L., & Li, Q. (2024). Patient-centered care and its impact on healthcare quality: Evidence from hospital settings. BMC Health Services Research, 24(1), 210. https://doi.org/10.1186/s12913-024-10210-8

[11] World Health Organization. (2025). Quality of care: A process for making strategic choices in health systems. WHO Press. https://www.who.int

[12] Xie, H., Kang, J., & Mills, G. H. (2021). Clinical review: The impact of noise on patients' sleep and the effectiveness of noise reduction strategies in intensive care units. Critical Care, 25(1), 123. https://doi.org/10.1186/s13054-021-03534-7

[13] Zhang, Y., Li, X., & Chen, S. (2023). Single-patient rooms and the reduction of hospital-acquired infections: A meta-analysis. Journal of Hospital Infection, 135, 12–20. https://doi.org/10.1016/j.jhin.2023.01.005

[14] Zhang, Y., Chen, S., & Liu, H. (2024). The effectiveness of single-room hospital design on infection control and patient outcomes: A systematic review. International Journal of Nursing Studies, 145, 104567. https://doi.org/10.1016/j.ijnurstu.2024.104567.