

Nursing Care Performance, Social Support, and Postoperative Patient Satisfaction

Fatoni¹, Milawati Lusiani², Agus Sustiyono¹

¹Diploma III Nursing Study Program, Faculty of Health Sciences, Universitas Faletehan, Indonesia

²Bachelor of Nursing and Professional Nursing Program, Faculty of Health Sciences, Universitas Faletehan, Indonesia

Email: fatoni.phd@gmail.com

Abstract. *This study aimed to examine the association between nursing care performance and postoperative patient satisfaction and to explore the potential mediating role of social support in this relationship. A quantitative cross-sectional study was conducted among 192 postoperative patients from public and private hospitals in Serang Regency and Serang City, Indonesia. Data were collected using structured questionnaires and analyzed using descriptive statistics, linear regression, path analysis, and independent sample t-tests. The findings indicated that nursing care performance was positively and significantly associated with postoperative patient satisfaction. Social support was also positively associated with patient satisfaction and demonstrated a potential mediating role in the relationship between nursing care performance and patient satisfaction. Nursing care performance was categorized as very high, social support as moderate, and patient satisfaction as high. No statistically significant differences in patient satisfaction were observed according to hospital type or geographical location. The findings suggest that both nursing care performance and social support are important factors associated with postoperative patient satisfaction. The discrepancy between very high nursing care performance and moderate social support highlights opportunities to strengthen psychosocial support during recovery. Healthcare institutions are encouraged to maintain high standards of nursing care while enhancing family involvement, therapeutic communication, patient education, and other psychosocial support strategies to improve postoperative care experiences.*

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INTRODUCTION

Postoperative care represents a critical phase in healthcare services due to the inherent risks associated with surgical procedures and the complexity of patient recovery during this period (Febriani et al., 2025). Patients undergoing surgery often experience not only physical discomfort but also psychological stress, uncertainty, and a heightened sense of vulnerability as they transition from operative intervention to recovery (Sibbern et al., 2017; Samuelsson et al., 2018; Weinrib et al., 2017; Sutton et al., 2022; Van et al., 2019).

These conditions make postoperative care a crucial determinant of overall treatment success. Therefore, the quality of care provided during this stage plays a vital role in accelerating recovery, preventing complications, minimizing risks, and ensuring patient safety. In this context, patient satisfaction is widely recognized as a key indicator of healthcare quality, as it reflects how effectively healthcare services meet or exceed patient expectations (Mohammed et al., 2024).

Patient satisfaction is influenced by multiple interrelated factors, including service quality, communication effectiveness, responsiveness of healthcare providers, and the

availability of emotional support throughout the treatment process. It is commonly understood as the result of a comparison between expected and perceived service performance, particularly in service-based industries such as healthcare, where patient perceptions play a central role (Ferreira et al., 2023). In postoperative settings, satisfaction is not solely determined by clinical outcomes or the success of medical procedures, but also by patients' overall experiences during care.

This includes the quality of interactions with healthcare professionals, the clarity of information provided, and the extent to which patients feel supported during their recovery process. Nursing care performance is widely acknowledged as one of the most important determinants of patient satisfaction (Al-Hammouri et al., 2024; Batbaatar et al., 2017; Kasa & Gedamu, 2019; Wudu, 2021). Nurses serve as primary caregivers who maintain continuous and direct interaction with patients, positioning them as central figures in shaping patient experiences throughout the recovery process.

High-quality nursing performance encompasses not only technical competence in delivering medical care but also strong communication skills, empathy, attentiveness, and responsiveness to patient needs. Conversely, inadequate nursing performance may increase the risk of postoperative complications, delay recovery, and negatively affect patient perceptions of care quality, ultimately leading to lower satisfaction levels (Hong et al., 2023; Bruckenthal & Simpson, 2016; Alotaibi et al., 2024).

In addition to clinical competence, effective communication plays a fundamental role in postoperative care. Patients frequently experience anxiety, confusion, and uncertainty following surgical procedures, which can be alleviated through clear, empathetic, and therapeutic communication from healthcare providers. Communication that is patient-centered and responsive helps build trust, reduces fear, and enhances patient understanding of their condition and treatment plan (Kwame & Petrucka, 2021; Elkefi & Asan, 2023; Hong & Oh, 2020). Therefore, a holistic approach that integrates physical, emotional, and psychological aspects of care is essential to address the complex and multifaceted needs of postoperative patients (Smith et al., 2021).

Beyond nursing care performance, social support has been identified as a critical factor influencing both patient recovery and satisfaction (King et al., 2019; Schultz et al., 2022; Schultz et al., 2022; Daramilas & Jaspal, 2017; Jakimowicz et al., 2017). Patients in postoperative conditions often experience emotional distress, anxiety, and a sense of isolation, which require support from various sources to ensure optimal recovery. Social support from family members, healthcare providers, and the broader community can significantly improve psychological well-being, enhance coping mechanisms, and contribute to a more positive and adaptive recovery experience (Southwick et al., 2016; Sippel et al., 2015; Feeney, B. C., & Collins, 2015; Zamaniashiani et al., 2025; Pinheiro et al., 2024).

Empirical studies have consistently demonstrated that social support plays a significant role in improving patient outcomes across various healthcare settings. It contributes to better quality of life, reduces stress levels, and enhances emotional stability among patients undergoing medical treatment (Ruiz-Rodríguez et al., 2021; Costa et al., 2017). In addition, support from family members has been shown to reduce anxiety and improve patients' psychological conditions, which indirectly influences their overall satisfaction with healthcare services (Naef et al., 2021).

Despite the recognized importance of these factors, healthcare systems continue to face challenges in delivering optimal postoperative care. Patients frequently report dissatisfaction due to inadequate communication, insufficient information, and limited emotional support during treatment. These challenges highlight gaps in service delivery and indicate that improvements in both clinical performance and support systems are still needed to enhance patient experiences and healthcare outcomes (Crocker et al., 2020).

In the Indonesian context, previous studies have demonstrated that nursing performance is closely associated with patient satisfaction. Positive nurse attitudes, professional competence, and effective communication have been shown to significantly influence patient perceptions of care quality. These findings reinforce the importance of strengthening nursing performance as a strategy to improve healthcare outcomes (Ariga et al., 2024; Delima et al., Rostami et al., 2026; Astutik, 2024). Similar findings have also been reported in recent Indonesian healthcare studies, which emphasize that the quality of nursing services plays a crucial role in shaping patient satisfaction and trust in healthcare providers (Kim & Eun, 2021). However, most previous studies have primarily focused on direct relationships between variables, with limited attention given to the underlying mechanisms that explain how these relationships occur.

One important aspect that remains underexplored is the mediating role of social support in the relationship between nursing care performance and patient satisfaction (Dousin et al., 2021; Ruisoto et al., 2021; Orgambidez et al., 2022). Social support may function as an intermediary factor that enhances and strengthens the effect of nursing performance on patient outcomes. Understanding this mechanism is essential for developing more comprehensive, patient-centered, and effective healthcare strategies that integrate both clinical and psychosocial components of care (Grosso, 2025; Sandoval et al., 2018; Asarnow et al., 2017; Ramond-Roquin et al., 2015; Farber et al., 2017).

Recent studies have highlighted that psychosocial support significantly influences patient engagement and recovery outcomes, particularly in clinical settings that require long-term care and adaptation (Mao et al., 2021). In regional healthcare settings such as Serang Regency and Serang City, variations in hospital management systems, availability of resources, and differences in service delivery practices may significantly influence patient satisfaction levels. These variations reflect differences in organizational capacity, workforce competence, and the implementation of healthcare standards across institutions.

Furthermore, distinctions between public and private hospitals, as well as geographical factors such as accessibility and infrastructure, may contribute to disparities in care quality and overall patient experiences. Evidence from recent health system studies suggests that disparities in resource allocation and service delivery remain key challenges in achieving equitable healthcare quality across regions (Kruk et al., 2018). However, empirical evidence examining these differences, particularly within the context of postoperative care, remains limited, highlighting the need for further systematic investigation.

Therefore, this study aims to examine the effect of nursing care performance on postoperative patient satisfaction while also analyzing the mediating role of social support in this relationship. In addition, this study explores potential differences in patient satisfaction across hospital types and geographical locations within the Serang region. The findings are expected to provide robust empirical evidence that can inform strategies to improve healthcare quality, particularly through the integration of clinical performance with structured social support systems, thereby promoting more comprehensive and patient-centered care.

METHODS

This study employed a quantitative approach using a cross-sectional design to examine the relationships among nursing care performance, social support, and postoperative patient satisfaction. The study was conducted in four hospitals located in Serang Regency and Serang City, Indonesia, consisting of both public and private healthcare institutions. These settings were selected to represent differences in hospital management systems and healthcare service delivery within the region. The population consisted of postoperative patients receiving treatment in the selected hospitals. A total of 200 questionnaires were distributed proportionally across the hospitals, and 192 respondents completed the questionnaire and met the inclusion criteria for analysis. Eight questionnaires were excluded due to incomplete responses. The respondents represented postoperative patients from different hospital backgrounds, allowing comparative analysis based on hospital type and geographical location. This study involved three

variables: nursing care performance as the independent variable (X), social support as the mediating variable (M), and patient satisfaction as the dependent variable (Y). Nursing care performance was measured through indicators of service quality, nurse competence, and communication effectiveness. Social support was measured based on emotional, informational, and material support received by patients during postoperative recovery.

Patient satisfaction was assessed through satisfaction with healthcare services, treatment outcomes, and willingness to share positive healthcare experiences. Data were collected using a structured questionnaire distributed through Google Forms. The questionnaire was administered to patients who had experienced postoperative care in the selected hospitals. Additional information was obtained through limited interviews with hospital management and representatives of the Indonesian National Nurses Association (PPNI) to support the interpretation of the findings. Instrument validity was tested using Pearson Product Moment correlation analysis, and all questionnaire items showed significant correlation values ($p < 0.05$), indicating that the instrument was valid. Reliability testing was conducted using Cronbach's Alpha, and all variables demonstrated reliability coefficients above 0.60, indicating acceptable internal consistency. Data analysis was performed using descriptive and inferential statistical techniques. Descriptive statistics were used to identify mean values and category levels of each variable. Inferential analysis included simple linear regression, multiple linear regression, path analysis, and independent sample t-tests. Path analysis was conducted to examine the mediating role of social support in the relationship between nursing care performance and patient satisfaction. Independent sample t-tests were used to analyze differences in patient satisfaction based on hospital type and geographical location. All statistical analyses were performed using a significance level of 0.05. This study received ethical approval from the Health Research Ethics Committee of Universitas Faletehan. All respondents provided informed consent prior to participation.

RESULT AND DISCUSSION

Respondent Characteristics

A total of 192 postoperative patients participated in this study. Respondents were recruited from public and private hospitals located in Serang Regency and Serang City. The distribution of participants was balanced across hospital type and geographical location. Of the total respondents, 96 patients (50.0%) received treatment in public hospitals and 96 patients (50.0%) in private hospitals. Based on geographical location, 97 respondents (50.5%) were recruited from Serang Regency and 95 respondents (49.5%) from Serang City.

Table 1. Distribution of Respondents

| Location | Public Hospital | Private Hospital | Total |
|----------------|-----------------|------------------|------------|
| Serang Regency | 50 | 47 | 97 |
| Serang City | 46 | 49 | 95 |
| Total | 96 | 96 | 192 |

The balanced distribution of respondents across hospital types and locations provided a reasonable basis for comparative analysis. However, detailed demographic and clinical information, including age, sex, educational level, type of surgery, insurance status, ward class, and length of hospitalization, were not comprehensively available in the dataset. Therefore, the potential influence of these variables on patient satisfaction and social support could not be evaluated in the present study.

Descriptive Analysis of Study Variables

Descriptive analysis revealed variation across the three principal variables examined in this study. Nursing care performance achieved the highest mean score, followed by patient satisfaction and social support.

Table 2. Descriptive Statistics of Study Variables

| Variable | Mean | Category |
|--------------------------|--------|-----------|
| Nursing Care Performance | 4.4167 | Very High |
| Social Support | 3.2667 | Moderate |
| Patient Satisfaction | 4.0500 | High |

The findings indicate that respondents generally perceived nursing care performance very positively. Patient satisfaction was categorized as high, suggesting favorable evaluations of postoperative healthcare services. In contrast, social support was categorized as moderate.

This pattern is particularly important because it highlights a discrepancy between the quality of direct clinical care and the broader psychosocial support available during recovery. Although patients reported positive experiences with nursing services, emotional support, family involvement, informational assistance, and practical support during recovery may not have been perceived as equally strong. Therefore, the moderate social support score represents an important finding that warrants further attention in postoperative care programs.

Differences in Patient Satisfaction by Hospital Type

An independent sample t-test was conducted to compare patient satisfaction between public and private hospitals.

Table 3. Comparison of Patient Satisfaction by Hospital Type

| Hospital Type | n | Mean | SD |
|------------------|----|------|------|
| Public Hospital | 96 | 4.01 | 0.42 |
| Private Hospital | 96 | 4.09 | 0.39 |

Mean Difference = -0.08; $p = 0.121$

The analysis showed no statistically significant difference in patient satisfaction between public and private hospitals ($p > 0.05$). Although respondents treated in private hospitals reported slightly higher satisfaction scores, the difference was relatively small and did not reach statistical significance.

Differences in Patient Satisfaction by Geographical Location

Patient satisfaction was also compared according to geographical location.

Table 4. Comparison of Patient Satisfaction by Geographical Location

| Location | n | Mean | SD |
|----------------|----|------|------|
| Serang Regency | 97 | 4.01 | 0.41 |
| Serang City | 95 | 4.10 | 0.40 |

Mean Difference = -0.09; $p = 0.114$

Similarly, no statistically significant difference was found between respondents from Serang Regency and Serang City ($p > 0.05$). Although respondents from Serang City reported marginally higher satisfaction scores, the observed difference was not statistically meaningful. These findings suggest that patient satisfaction was relatively similar across the healthcare settings included in this study. However, the results should not be interpreted as evidence that healthcare institutions were identical in terms of organizational structure, staffing patterns, resource availability, or quality management systems. Such factors were not directly measured and therefore cannot be used to explain the findings conclusively.

Association Between Nursing Care Performance and Patient Satisfaction

Simple linear regression analysis was conducted to examine the association between nursing care performance and patient satisfaction.

Table 5. Regression Analysis of Nursing Care Performance and Patient Satisfaction

| Variable | β | R ² | p-value |
|--------------------------|---------|----------------|---------|
| Nursing Care Performance | 0.756 | 0.572 | <0.001 |

The analysis demonstrated a statistically significant positive association between nursing care performance and patient satisfaction. Respondents who perceived higher levels of nursing care performance tended to report higher levels of satisfaction with postoperative services. The coefficient of determination ($R^2 = 0.572$) indicates that 57.2% of the variance in patient satisfaction was accounted for by nursing care performance in the regression model. This finding reflects a strong statistical relationship between the variables. However, the result should not be interpreted as evidence of causality because the study employed a cross-sectional design. Other factors that were not measured in the present study may also contribute to patient satisfaction.

Association Between Social Support and Patient Satisfaction

Regression analysis was also conducted to examine the association between social support and patient satisfaction.

Table 6. Regression Analysis of Social Support and Patient Satisfaction

| Variable | β | R ² | p-value |
|----------------|---------|----------------|---------|
| Social Support | 0.781 | 0.610 | <0.001 |

The findings revealed a statistically significant positive association between social support and patient satisfaction. Respondents who perceived stronger emotional, informational, and practical support generally reported more favorable healthcare experiences. The coefficient of determination ($R^2 = 0.610$) indicates that 61.0% of the variance in patient satisfaction was accounted for by social support in the regression model. Nevertheless, because all variables were measured using self-report questionnaires at a single point in time, the possibility of shared response tendencies and common method bias should be considered when interpreting the strength of the association.

Mediating Role of Social Support

Path analysis was conducted to explore whether social support functioned as a mediating variable in the relationship between nursing care performance and patient satisfaction.

Table 7. Path Analysis Results

| Relationship | β | p-value |
|---|---------|---------|
| Nursing Care Performance → Social Support | 0.705 | <0.001 |
| Nursing Care Performance → Patient Satisfaction | 0.306 | <0.001 |
| Social Support → Patient Satisfaction | 0.511 | <0.001 |

The path analysis demonstrated significant positive associations among all pathways examined. Nursing care performance was positively associated with social support, while both nursing care performance and social support were positively associated with patient satisfaction. The indirect effect of nursing care performance on patient satisfaction through social support was estimated at 0.360 (0.705×0.511), whereas the direct effect was 0.306. The total effect was therefore estimated at 0.666.

The reduction of the coefficient from $\beta = 0.756$ in the simple regression model to $\beta = 0.306$ in the mediation model suggests that part of the association between nursing care performance and patient satisfaction may operate through social support. This reduction is expected because the mediation model estimates the unique contribution of each predictor after accounting for the influence of the other variables included in the model.

From a practical perspective, the findings suggest that respondents who perceived nursing care more positively also tended to perceive stronger emotional, informational, and practical support during recovery. These supportive experiences may subsequently correspond with higher levels of patient satisfaction.

However, the mediation findings should be interpreted cautiously. The analysis did not include bootstrap confidence intervals, Sobel test statistics, or model fit indices. Consequently, the findings provide preliminary evidence of a potential mediation mechanism rather than definitive proof of mediation.

The present study examined the associations among nursing care performance, social support, and postoperative patient satisfaction. The findings indicate that both nursing care performance and social support were positively associated with patient satisfaction, emphasizing the importance of integrating clinical and psychosocial dimensions of healthcare delivery.

One of the most notable findings is the discrepancy between very high nursing care performance and moderate social support. Although respondents generally reported positive perceptions of nursing care, social support did not reach the same level. This pattern suggests that healthcare services may have been more successful in delivering clinical care than in addressing broader psychosocial needs during recovery. The finding is consistent with previous studies demonstrating that patient satisfaction is strongly influenced by the quality of nursing care, particularly nurses' competence, responsiveness, communication skills, and patient-centered interactions. Patients who perceive nursing services positively tend to report higher levels of satisfaction because nurses represent the healthcare professionals with whom patients interact most frequently during hospitalization.

Postoperative recovery extends beyond physical healing. Patients frequently experience discomfort, anxiety, uncertainty, and temporary limitations in daily functioning. During this period, emotional reassurance, practical assistance, family involvement, and supportive communication become particularly important. Therefore, the moderate level of social support observed in this study may indicate opportunities to strengthen psychosocial interventions alongside clinical care. Previous studies have shown that social support contributes to emotional stability, improved coping mechanisms, and better quality of life among patients undergoing medical treatment (Ruiz-Rodríguez et al., 2021). Similarly, social support has been associated with improved psychological well-being and long-term health outcomes, highlighting its importance as a component of holistic healthcare services (Vila, 2021). Consequently, the moderate level of social support identified in the present study suggests that psychosocial needs may not have been fully addressed despite positive evaluations of clinical care.

The findings further suggest that social support may represent an important pathway linking nursing care performance and patient satisfaction. Effective nursing care often includes therapeutic communication, patient education, responsiveness, empathy, and emotional reassurance. These experiences may strengthen patients' perceptions of support and contribute to more positive healthcare experiences during recovery. This interpretation is supported by previous studies indicating that psychosocial support enhances patient adaptation, resilience, and engagement during illness and recovery processes (Mao et al., 2021). Furthermore, psychosocial support interventions have been associated with improved patient outcomes across various healthcare settings, suggesting that support mechanisms may influence how patients perceive and evaluate healthcare services (Smith et al., 2021). Therefore, social support may function as an important mechanism through which nursing care performance is associated with patient satisfaction.

Nevertheless, causal interpretations should be avoided. Because the study employed a cross-sectional design, temporal relationships among variables cannot be established (Wang & Cheng, 2020). It remains possible that respondents who were generally satisfied with healthcare services evaluated both nursing care performance and social support more positively. Therefore, the findings should be interpreted as statistical associations rather than causal effects. The absence of statistically significant differences according to hospital type and geographical location suggests that patient satisfaction was relatively similar across the healthcare settings included in the study. However, this finding should not be interpreted as evidence that healthcare institutions were identical in staffing patterns, resource allocation, organizational culture, or

quality management practices. Such factors were not directly measured and therefore remain outside the scope of the present study. Contemporary healthcare literature emphasizes that organizational capacity, access to resources, and quality management systems may substantially influence healthcare outcomes and patient experiences (Fullman et al., 2018). Consequently, further investigation is needed to determine whether institutional factors contribute to variations in patient satisfaction within different healthcare settings.

From a practical perspective, the findings indicate that improving patient satisfaction requires attention not only to technical nursing competence but also to the social and emotional needs experienced during recovery. These findings are consistent with person-centered care frameworks, which emphasize the integration of clinical competence, effective communication, emotional support, and patient involvement in healthcare decision-making (McCance & McCormack, 2025). Healthcare institutions may therefore strengthen patient-centered care by improving therapeutic communication, encouraging family involvement, expanding patient education programs, and implementing comprehensive discharge planning strategies.

Several limitations should be acknowledged. First, the cross-sectional design limits causal interpretation. Second, all variables were measured using self-report questionnaires, which may increase the possibility of common method bias. Third, detailed demographic and clinical characteristics were not comprehensively available, limiting the assessment of potential confounding factors and preventing subgroup analysis across specific patient categories. Finally, the mediation analysis did not incorporate bootstrap procedures or model fit indices. Future studies employing longitudinal designs and more robust mediation approaches are recommended to provide stronger evidence regarding the relationships among nursing care performance, social support, and patient satisfaction. The findings suggest that nursing care performance and social support are both strongly associated with patient satisfaction among postoperative patients. Strengthening psychosocial support alongside high-quality nursing care may contribute to more comprehensive, patient-centered, and responsive postoperative healthcare services.

CONCLUSION

This study found that nursing care performance was positively and significantly associated with postoperative patient satisfaction. Respondents who perceived higher levels of nursing care performance generally reported more favorable evaluations of healthcare services. Social support was also positively associated with patient satisfaction and demonstrated a potential mediating role in the relationship between nursing care performance and patient satisfaction. An important finding of this study was the discrepancy between very high nursing care performance and moderate levels of social support. Although respondents generally reported positive perceptions of nursing care, psychosocial support during recovery was perceived less favorably. This finding suggests that strengthening emotional support, family involvement, patient education, and recovery-related guidance may further enhance patient experiences during the postoperative period. No statistically significant differences in patient satisfaction were identified according to hospital type or geographical location. These findings indicate that no measurable differences in patient satisfaction were detected across the healthcare settings included in this study. However, organizational and institutional characteristics were not directly assessed and therefore should not be inferred from the results. Based on these findings, healthcare institutions are encouraged to maintain high standards of nursing care while strengthening psychosocial support strategies. Greater emphasis on therapeutic communication, family engagement, patient education, and comprehensive discharge planning may contribute to more positive postoperative experiences and improved patient satisfaction.

SUGGESTION

Future studies should employ longitudinal research designs, include more comprehensive demographic and clinical characteristics, and utilize more robust mediation procedures such as

bootstrap analysis to provide stronger evidence regarding the relationships among nursing care performance, social support, and patient satisfaction.

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