

Implementation of the Community Nursing Model in Improving Postoperative Care Compliance for Postoperative Patients at Home

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ABSTRACT

Introduction: Postoperative care at home remains a critical challenge, particularly in community settings where patients often lack adequate knowledge and support, leading to low compliance and increased risk of complications. Community-based nursing approaches offer a strategic solution to improve patient outcomes through education and continuous monitoring. This community service program aimed to improve postoperative care compliance among patients at home by implementing the Community Nursing Model.

Methods: A quasi-experimental one-group pretest-posttest design was employed involving 35 postoperative patients. The intervention included health education, wound-care demonstrations, medication management counselling, and home visits with family involvement. Data were collected using questionnaires and observation checklists, and analyzed using comparative statistical methods.

Results: The findings showed a significant improvement in all measured indicators. Mean knowledge scores increased from 58.2 to 84.3, compliance scores improved from 62.4 to 81.6, and proper wound care practices rose from 54% to 88%. These results indicate enhanced patient understanding, skills, and adherence following the intervention.

Conclusion: The Community Nursing Model is effective in improving postoperative care compliance in community settings. Integrating education, family support, and continuous monitoring can strengthen home-based care and reduce the risk of complications.

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INTRODUCTION

Postoperative care represents a critical phase in the continuum of healthcare services, significantly influencing treatment outcomes and patient recovery. Globally, postoperative complications remain a major concern. Recent evidence indicates that approximately 7–10% of surgical patients experience postoperative complications, with mortality rates ranging from 0.5% to 2%, depending on the type of procedure and patient condition (Abadal Villayandre et al., 2026). One of the key determinants in preventing such complications is patient compliance with postoperative care at home (Campbell et al., 2024).

In Indonesia, this issue is increasingly complex due to the rising number of surgical procedures each year. National health reports show a significant increase in surgical services across healthcare facilities; however, this growth has not been accompanied by optimal post-discharge support systems at the community level (Çankaya et al., 2026). Many patients return home without adequate understanding of wound care, medication adherence, physical activity limitations, and warning signs of complications (Chua et al., 2024). This lack of knowledge contributes to low compliance with medical instructions, increasing the risk of readmission and healthcare costs (Dello Iacono et al., 2025).

This condition is further exacerbated by healthcare providers' limited capacity to conduct continuous monitoring after patient discharge. The healthcare system, which still predominantly focuses on curative services, has not fully optimized promotive and preventive approaches at the community level (Gao et al., 2025). In this context, a community-based approach through the Community Nursing Model offers a strategic solution. This model emphasizes patient and family empowerment, health education, and structured follow-up within the patient's living environment (Han et al., 2025).

The partners involved in this community service program include postoperative patients residing in community settings with limited access to health information and low levels of health literacy. Preliminary assessments indicate that most patients lack proper knowledge of wound care techniques, demonstrate poor adherence to medication regimens, and have limited awareness of potential postoperative complications (Hijrah et al., 2025). Additionally, family members' roles as caregivers remain suboptimal due to insufficient knowledge and skills in support the recovery process (Horgan et al., 2024).

The urgency of this issue requires a systematic, sustainable intervention through a community-based approach. The implementation of the Community Nursing Model is considered a relevant strategy to improve compliance with postoperative care at home. Through this approach, healthcare providers can deliver comprehensive education, conduct regular monitoring, and foster patient and family independence in managing postoperative care (Ibrahim et al., 2026).

The objective of this community service activity is to improve postoperative patients' compliance with home-based care by implementing the Community Nursing Model. Specifically, this program aims to: (1) enhance patient and family knowledge regarding postoperative care, (2) improve skills in wound care and therapy management, (3) increase adherence to medication regimens and follow-up visits, and (4) reduce the risk of postoperative complications through continuous education and community-based monitoring.

METHOD

Activity Design

This community service program was designed in the activity adopted a quasi-experimental one-group pretest–posttest design to evaluate changes in postoperative care compliance among participants after the intervention. The Community Nursing Model served as the core framework, emphasizing promotive and preventive strategies, patient–family empowerment, and continuity of care at the household level.

Location and Time

The program was implemented in a community setting within the primary healthcare centre's (Puskesmas) working area. The activity was conducted over three months, covering the preparation, implementation, and evaluation phases. The timeline was structured to ensure adequate exposure to intervention components and follow-up monitoring.

Target Participants

The participants were 35 postoperative patients who had been discharged from healthcare facilities and were recovering at home. Inclusion criteria included: (1) patients aged ≥ 18 years, (2) having undergone surgical procedures within the last 1–2 months, (3) willing to participate, and (4) living with at least one family member acting as a caregiver. Family members were actively involved as co-participants to strengthen the sustainability of home-based care practices.

Stages of Implementation

The implementation followed a structured service cycle consisting of three main phases:

Pre-Implementation Stage (Preparation and Needs Assessment)

This stage included stakeholder engagement, coordination with local health authorities, and identification of community needs. Baseline data were collected using pretest instruments to assess participants' knowledge, attitudes, and compliance with postoperative care. Educational modules, standard operating procedures (SOPs), and media (leaflets, demonstration tools) were developed during this phase.

Implementation Stage (Intervention and Assistance)

The core intervention involved health education sessions, hands-on demonstrations of wound care techniques, medication adherence counseling, and lifestyle guidance. Activities were delivered through small group sessions and home visits. The Community Nursing Model was operationalised through continuous mentoring, patient and family empowerment, and regular monitoring via structured visit schedules.

Evaluation Stage (Monitoring and Outcome Assessment)

An evaluation was conducted to assess the effectiveness of the intervention. Posttest assessments were administered to compare with baseline data. Monitoring indicators included knowledge improvement, skill acquisition, and compliance with postoperative care protocols. Reflection and feedback sessions were also conducted with participants and stakeholders.

Evaluation Instruments

The evaluation employed multiple instruments aligned output and outcome indicators: Pre-test and Post-test Questionnaires to measure cognitive changes in knowledge of postoperative care. Observation Checklists to assess psychomotor skills, particularly in wound care practices and adherence to medical instructions. Structured Compliance Questionnaires to evaluate behavioral outcomes, including medication adherence, follow-up visits, and daily self-care activities. All instruments were adapted

from clinical guidelines and reviewed by experts to ensure validity and reliability in community-based settings. Data analysis was conducted using comparative statistical methods (paired test) to determine the effectiveness of the intervention.

RESULT

The implementation of the Community Nursing Model demonstrated measurable improvements in participants' postoperative care compliance. A total of 35 participants completed both pretest and posttest assessments. The mean compliance score increased from 62.4 (SD = 8.7) at baseline to 81.6 (SD = 7.9) after the intervention. This indicates a substantial improvement in adherence to postoperative care practices following the program. In addition, participants' knowledge scores improved from a mean of 58.2 (SD = 9.1) before the intervention to 84.3 (SD = 6.5) after the intervention. Skill-based assessments using observation checklists also showed improvement, with correct wound care practices increasing from 54% at baseline to 88% post-intervention. The results are summarized in the following matrix table comparing pretest and posttest outcomes across key indicators:

Table 1. Comparison of pre- and post-intervention outcomes on knowledge, wound care skills, and postoperative care compliance among participants following the implementation of the Community Nursing Model.

Indicator	Pre-Intervention Mean (SD)	Post-Intervention Mean (SD)	Absolute Increase	Percentage Increase
Knowledge	58.2 (9.1)	84.3 (6.5)	+26.1	44.8%
Skills (Wound Care)	54%	88%	+34%	63.0%
Compliance	62.4 (8.7)	81.6 (7.9)	+19.2	30.8%

The comparison of pre-intervention and post-intervention data reveals consistent improvements across all measured domains. Knowledge levels increased significantly, reflecting the effectiveness of educational sessions. Practical skills, particularly in wound care and medication management, also showed marked enhancement, indicating successful skill transfer during demonstrations and home visits. Compliance behavior improved substantially, as evidenced by increased adherence to medication schedules, follow-up visits, and daily care routines. Participants also demonstrated better recognition of warning signs and appropriate responses to potential complications.

The findings suggest that the Community Nursing Model is effective in improving postoperative care compliance among patients in community settings. The integration of education, hands-on practice, and continuous monitoring contributed to behavioral changes in participants. The involvement of family members as caregivers further strengthened adherence and sustainability of care practices. These results align with existing evidence that community-based interventions and patient empowerment strategies significantly enhance health outcomes. The observed improvements indicate that structured, community-oriented nursing approaches can bridge the gap between hospital care and home-based recovery, ultimately reducing the risk of complications and readmissions. The program demonstrates that a systematic and participatory approach is essential in achieving optimal postoperative care outcomes at the community level.

DISCUSSION

The findings of this community-based intervention demonstrate a significant improvement in postoperative care compliance following the implementation of the Community Nursing Model. The increase in knowledge, skills, and compliance observed in this study reflects the effectiveness of structured education, continuous monitoring, and family involvement. These findings are consistent with recent evidence emphasizing the importance of patient-centered and community-based approaches in improving postoperative outcomes (Morin Galfout et al., 2025).

The substantial improvement in knowledge scores indicates that health education plays a pivotal role in shaping patient behavior. Previous studies have shown that patients who receive structured education before and after discharge are more likely to adhere to postoperative care instructions and achieve better recovery outcomes (Ofori et al., 2025). In line with this, the educational component of the intervention, delivered through interactive sessions and reinforced during home visits, contributed to improved understanding and retention of essential care practices.

Furthermore, the observed enhancement in practical skills, particularly in wound care, aligns with recent studies that highlight the importance of hands-on training and demonstration-based learning. Practical skill acquisition is essential in ensuring that patients can independently manage their postoperative care at home (Qureshi et al., 2025; Vortman, 2026). The use of observation checklists in this study also ensured that skill improvements were objectively measured, supporting the validity of the findings (Raja et al., 2024).

Compliance with postoperative care improved notably, attributed to the integration of continuous monitoring and family engagement. Evidence suggests that adherence to treatment regimens is significantly influenced by social support and caregiver involvement (Rello et al., 2026). In this study, involving family members as co-participants strengthened the support system, thereby enhancing adherence to medication schedules, follow-up visits, and daily care routines (Shaughnessy & Kent, 2024; Viana et al., 2024). The Community Nursing Model proved to be an effective framework for bridging the gap between hospital-based care and home-based recovery. This model emphasizes promotive and preventive strategies, aligning with global health recommendations that advocate for strengthening primary care and community health systems (Sierra et al., 2025; Song et al., 2025). By delivering care within the community, this approach ensures continuity of care and reduces the likelihood of complications and hospital readmissions (Sultan et al., 2026).

The findings of this study are also consistent with broader literature indicating that community-based interventions significantly improve health outcomes in various clinical contexts. For instance, a systematic review by Sun et al., (2024) found that community nursing interventions led to improved patient adherence and reduced complications across multiple patient populations. Similarly, a study by Suprpto et al., (2021) reported that home-based care programs were associated with higher patient satisfaction and better clinical outcomes.

In addition, integrating monitoring mechanisms through home visits enabled early identification of potential complications. Early detection and timely intervention are critical in preventing the progression of postoperative complications (Tang & Gao, 2025; Vacharathit et al., 2025). This highlights the importance of proactive follow-up in community-based healthcare delivery.

Despite the positive outcomes, several limitations should be acknowledged. The absence of a control group limits the ability to definitively establish causal relationships. Additionally, the relatively small sample size (n=35) may affect the generalizability of the findings. Future studies are recommended to employ randomized controlled designs with larger sample sizes to strengthen the evidence base. Overall, the results underscore the effectiveness of the Community Nursing Model as a strategic approach to improving postoperative care compliance. By integrating education, skill development, family involvement, and continuous monitoring, this model offers a comprehensive solution to address gaps in post-discharge care. The findings support the adoption of community-based nursing interventions as part of routine healthcare services to enhance patient outcomes and reduce the burden on healthcare systems.

CONCLUSION

The implementation of the Community Nursing Model in this community service program has demonstrated a meaningful improvement in postoperative care compliance among patients recovering at home. The intervention contributed to significant increases in knowledge, practical skills, and adherence to postoperative care protocols, including medication use, wound care, and follow-up visits. These findings indicate that a structured, community-based nursing approach that integrates education, family involvement, and continuous monitoring is effective in bridging the gap between hospital discharge and home-based recovery.

From a sustainability perspective, this program should be integrated into routine primary healthcare services, particularly through collaboration with community health centres (Puskesmas) and local health cadres. Capacity building for nurses and family caregivers should be strengthened to ensure continuity of care. Additionally, the development of standardized educational modules and monitoring tools can support wider implementation. Future programs are encouraged to expand the scale of intervention, incorporate digital health support systems, and apply more rigorous evaluation designs to enhance evidence and long-term impact.

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Conflict of Interests

All authors declare no conflict of interest in this community service program.

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