



**OPTIMIZATION OF TIERED NURSING COMPETENCY SUPERVISION
IN THE CENTRAL SURGICAL INSTALLATION OF THE HOSPITAL**

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ABSTRACT

Supervision of nurse competency in the operating room is an important component in ensuring compliance with standard operating procedures and patient safety. However, in some hospitals, supervision is still not optimal, often unscheduled, using manual forms, and lacking proper documentation. This residency project aims to improve the effectiveness of tiered nurse competency supervision to enhance patient safety in the hospital's central surgical installation. This case study uses Kurt Lewin's planned change approach consisting of three stages unfreezing, moving, and refreezing combined with management functions: planning, organizing, staffing, actuating, and controlling. Data collection was conducted through interviews, observations, and questionnaires. Planned change began with problem identification, followed by Fishbone analysis to determine root causes. Several improvement strategies were developed, including forming a supervision team, creating a routine supervision schedule through Google Sheets, and developing five digital supervision instruments using Google Forms. A trial implementation was carried out. Data were analyzed using descriptive statistics to summarize respondent characteristics and key variables, while inferential analysis was used to examine variable relationships and support achievement of the research objectives. The implementation of digital-based tiered nurse competency supervision increased the effectiveness of supervision and supported more structured competency development. The formation of a supervision team, scheduled supervision activities, and digitized instruments improved supervision quality. Trial results indicated competent performance aligned with SOPs based on observation checklists. Digital supervision forms proved efficient and practical, facilitating implementation, simplifying documentation, and accelerating evaluation of supervision outcomes.

Keywords: central surgical installation; digitization of supervision; nurse competence; patient safety; tiered supervision

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INTRODUCTION

Nurses' noncompliance with perioperative Standard Operating Procedures (SOPs), particularly in hand hygiene, aseptic techniques, and wound care, is associated with increased rates of surgical site infections, phlebitis, prolonged length of hospital stay, higher healthcare costs, and a decline in quality of care and patient safety. Workload has been identified as the most dominant factor associated with nurses' compliance in implementing perioperative SOPs (Sukma Panca Indrawati et al., 2023). Study findings also indicate a significant relationship between nurses' compliance with SOP implementation and the level of wound healing following cesarean section; the better nurses adhere to SOPs, the faster the postoperative wound healing process (Munandar & Koto, 2018).

The operating room is one of the hospital units where noncompliance among nurses with standard operating procedures is still frequently identified. One of the main factors contributing to this issue is the suboptimal implementation of nursing supervision. Supervision of nurses in the operating room is an essential component in ensuring competency, adherence to procedures, and patient

safety. However, in several hospitals, supervision practices remain ineffective often unscheduled, poorly documented, and not integrated into the service quality system (National Health Strategic Plan 2020–2024, 2021). Supervision is frequently carried out in an unstructured manner and lacks focus on essential safety areas (Sulistyowati & Hendrawati, 2022). Effective nursing supervision functions not only as oversight but also as professional development, reinforcement of safety values, and competency enhancement (Effendy, 2021). Optimizing supervision is needed to improve compliance with Standard Operating Procedures (SOPs), accelerate the adaptation of new nurses, and promote a culture of patient safety. Structured and continuous supervision has also been shown to improve team performance and nurse job satisfaction (Kurniawati et al., 2020).

One of the key strategies to strengthen the quality of nursing practice is the implementation of effective supervision. Proper supervision encourages nurses to better understand their professional responsibilities, enhances technical skills, and ensures alignment of nursing care implementation with established SOPs. Supervision activities in the operating room also serve as a critical instrument to ensure the application of patient safety principles, including the implementation of the WHO Surgical Safety Checklist and infection prevention protocols (World Health Organization, 2009).

Operating room nurses play a central role in ensuring the safety of surgical procedures from preparing equipment and patients to ensuring effective coordination with the medical team. Weak supervision of nurse competency contributes to low compliance with SOPs. In fact, nursing supervision conducted systematically and structurally serves not only as a monitoring mechanism but also as professional development and competency improvement. Through this mechanism, nurses receive feedback and are guided to apply evidence-based practices to minimize medical errors (Marquis, 2021). Strengthening the nursing supervision system is a crucial strategy that must be applied systematically and continuously. Structured clinical supervision is associated with improvements in nursing quality indicators (nurse performance, procedural compliance) and contributes to a strong culture of patient safety (Sérgio et al., 2023).

Optimizing tiered nursing competency supervision requires strong policy support and commitment from hospital management and nursing leaders so that suboptimal supervision outcomes can be followed up through Continuing Professional Development programs (Habibi et al., 2022). Therefore, optimizing nursing competency supervision is a strategic step crucial for enhancing patient safety in the operating room. This strategy is expected to improve compliance with safety procedures, foster a safety-oriented work culture, and strengthen team effectiveness.

The planned change employs Kurt Lewin's Change Theory and a managerial function approach. Lewin's change process consists of three main stages: unfreezing, movement, and refreezing (Sirait et al., 2023). Meanwhile, the five POSAC management functions include planning, organizing, staffing, actuating, and controlling (Marquis, 2021). This paper describes the process of improving the implementation of tiered nursing competency supervision in the Central Surgical Installation (Instalasi Bedah Sentral/IBS) through the optimization of supervision activities by establishing a supervision team, preparing a supervision schedule, digitizing supervision forms, conducting socialization, and piloting the digital supervision form. This residency project aims to improve the effectiveness of tiered nurse competency supervision to improve patient safety in the hospital's central surgical installation.

METHOD

The method used in this paper is a case report conducted in one of the hospitals in Jakarta. The unfreezing stage was carried out from May 27 to June 30, 2025. The activities included problem identification, analysis, action plan development, implementation, and evaluation. Problem identification was conducted using initial interview results, observation, and questionnaire

distribution. The interview with the head nurse of the Central Surgical Installation (IBS) revealed that supervision was conducted but not scheduled, supervision was carried out simultaneously during observation, the supervision form was still in hardcopy format, most of the head nurse's time was consumed by operational tasks related to surgery, and there had been no formal training on nursing supervision. The observation results in the IBS unit showed several nursing procedures that were not in accordance with the SOP. The questionnaire was distributed to all nurses in the IBS unit. A total of 32 nurses completed the questionnaire, but only 28 met the inclusion criteria. The questionnaire results showed that 85.7% agreed that nursing competency supervision should be carried out regularly, 67.8% agreed that supervision should involve competent staff, 85.7% agreed on the need for supervision training, 85.7% agreed that the supervision form should be systematically structured and easy to use, 56% reported that monthly nurse performance evaluations were not being conducted, and 78.5% agreed that follow-up actions in the form of training were needed for nurses who had not yet met competency standards. After the data were collected, a fishbone analysis was used to determine the main problems in nursing competency supervision.

The analysis revealed that the directing function of the head nurse in conducting nursing competency supervision was not optimal. There were three root causes contributing to the suboptimal directing (supervision) function. A scoring process was carried out together with the operating room head nurse to determine the priority problems to be addressed. Based on the prioritized issues, the next step was to develop a Plan of Action (PoA). The PoA was the result of an agreement between the nursing residency student and the IBS unit of the hospital. The implementation of the planned change program included creating a supervision schedule for tiered nursing competency using a Google Sheets format, converting the supervision form into a Google Forms format, conducting socialization of the Google Forms supervision tools, and piloting the implementation of tiered nursing competency supervision using the digital supervision form.

A tiered supervision schedule and a supervision team were formally established. The head nurse conducted supervision for PK III nurses, while PK III nurses subsequently supervised PK II and PK I nurses. Five supervision forms were converted into digital formats using Google Forms. Socialization and assessment were conducted with two nurses (PK III and PK II), and the evaluation results indicated that both participants were competent. Informed consent was obtained from all nurses who participated in completing the questionnaire. The implementation of digital supervision forms was designed to ensure that it did not impose excessive workload or interfere with patient safety during operative procedures. Evaluation results were reported back to the supervision team and the head nurse to support continuous quality improvement.

RESULT

The implementation of tiered nursing competency supervision involved the head nurse, team leaders, senior nurses, and junior nurses. The head nurse supervised PK III nurses, while team leaders supervised PK II and PK I nurses. Optimization of supervision was demonstrated by the implementation of tiered supervision with a regular schedule and the use of digital forms. The results of interviews, observations, and questionnaires related to the roles and functions of the head nurse showed that, in general, the head nurse had not fully carried out her roles and functions, particularly in the actuating function, namely supervision. Actuating is related to directing and motivating nursing staff to perform their duties to the best of their ability. The issue of suboptimal implementation of nursing competency supervision in the IBS unit was then analyzed using an Ishikawa diagram or fishbone analysis as follows:

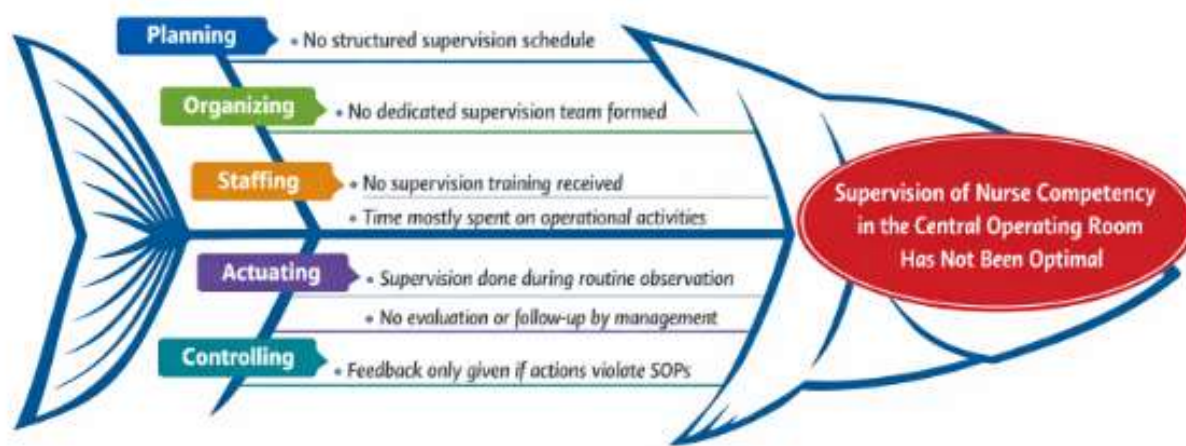


Figure 1. Ishikawa Diagram Analysis

The results of the fishbone analysis served as the foundation for developing the action plan (Plan of Action/PoA) and its implementation. The next step was to develop the Plan of Action (PoA). The PoA agreed upon by the student and the IBS head nurse included forming a tiered nursing supervision team, preparing a supervision schedule using Google Sheets, developing supervision forms using Google Forms, socializing the use of the Google Forms supervision tool, and conducting a trial of the supervision process using Google Forms. The trial of supervision on two nurses showed competent results, demonstrated by performing procedures according to SOP as evidenced by the observation checklist.

Planning

The planned actions under the planning function were to develop a schedule for tiered nursing competency supervision and to create supervision forms using Google Forms. The competency supervision form was created based on the existing IBS form with minor revisions according to agreements reached with the supervision team. The preparation of the supervision schedule and forms involved the supervision team to review the content.

Organizing

The planned action under the organizing function was to establish a supervision team for the implementation of tiered supervision. The head nurse appointed team leaders to serve as the tiered nursing supervision team in the IBS unit. The head nurse plays a key role in ensuring the success of nursing care management.

Staffing

The planned action under the staffing function was to conduct a trial implementation of tiered nursing competency supervision using Google Forms, involving the head nurse, team leaders, senior nurses, and junior nurses. The head nurse conducted supervision for PK III nurses, while team leaders supervised PK I and PK II nurses. The scheduling of supervision activities was coordinated with the supervision team.

Actuating

The planned action under the actuating function was to conduct socialization of the supervision forms using the Google Forms format. This activity was carried out individually and through direct discussions with the designated supervision team.

Controlling

The planned action under the controlling function was to ensure that the trial implementation of tiered nursing supervision was conducted according to the plan, schedule, and the Google Forms

supervision format. The controlling function involved the supervision team in monitoring and evaluating the implementation of the trial of tiered nursing competency supervision.

DISCUSSION

The implementation of tiered nursing supervision in this project demonstrates that the application of the POSAC management approach can enhance the quality of nursing competency supervision as well as patient safety. POSAC establishes a management framework that enables nursing supervision to be more structured, goal-oriented, and sustainable, thereby enhancing the quality of nursing care, patient safety, and nurses' performance. The implementation of tiered supervision and periodic evaluation is expected to improve the quality of nursing services and support the sustainable achievement of the organization's vision and mission (Wildan M. et al., 2025).

The planning function was operationalized by developing a supervision schedule for tiered nursing competency and creating supervision forms using Google Forms. The purpose of creating a supervision schedule was to enable the supervision team to carry out routine and tiered supervision activities more efficiently. The use of digital tools such as Google Forms can improve documentation efficiency and the transparency of supervision processes (Nugrahini & Pohan, 2020). Similar findings were reported by Setiawan et al. (2022), who emphasized that digital supervision platforms increase workflow efficiency and reduce missed documentation. Therefore, the development of a digital supervision schedule in this project is a key step toward increasing supervision consistency.

The formation of a tiered supervision team Head Nurse–PK III and Team Leaders–PK II and PK I served as a mechanism to structure supervision, delineate responsibilities, and establish reporting pathways. The Ministry of Health of Indonesia emphasizes that supervision must be conducted by nurses who possess the appropriate competency level and authority (Kemenkes RI, 2019). Evidence shows that the involvement of head nurses can improve staff motivation, reduce clinical errors, and strengthen professional accountability (Korprina et al., 2024; Simamora, 2021). Additionally, structured tiered supervision is associated with better communication patterns and improved compliance with clinical standards (Rahmawati et al., 2023).

Thus, establishing a tiered team in this project represents a strategic step that supports supervision effectiveness. The placement of supervisors based on their levels Head Nurse supervising PK III and Team Leaders supervising PK II and PK I aligns with staffing principles emphasizing competence, authority, and professionalism (Marquis, 2021). Research indicates that aligning supervision levels with competency strengths enhances coaching effectiveness, increases self-efficacy, and reduces the risk of malpractice (Akbari et al., 2020; Firmansyah et al., 2023). This was reflected in the trial conducted in the present project, where two nurses were deemed competent based on digital checklist assessment.

The digitalization of supervision facilitated observation, documentation, and reporting, while reducing administrative burden. Socialization and training on the use of digital supervision forms are essential to improve staff engagement (Korprina et al., 2024). Similar findings by Wijaya et al. (2022) highlighted that digital competency assessment systems increase accuracy, minimize bias, and strengthen accountability. This aligns with the project's observations, which showed that supervision became more practical, objective, and measurable. Digital checklist-based evaluation enabled rapid and structured quality control. In this project, structure (team, schedule), process (digital supervision), and outcomes (improved competency) were aligned. The results indicated that two nurses were deemed competent, demonstrating that tiered and digitalized supervision supports accurate evaluation and enhances patient safety. This is consistent with nursing quality improvement principles emphasizing transparency, continuous monitoring, and ongoing improvement cycles (Handoko et al., 2021; WHO, 2021).

In Lewin's Change Theory, the unfreezing stage involved identifying problems, analyzing gaps, and preparing for change through a structured Plan of Action (PoA). The moving stage consisted of implementing the supervision design in collaboration with the head nurse and designated supervision team. After activities were executed, follow-up plans were discussed to ensure sustainability. This project successfully reached the moving phase, where behavioral and operational changes began to take place. Research supports that digital and tiered supervision initiatives often reach optimal effectiveness when supported by change management frameworks like Lewin's (Arifin & Sari, 2023; Tiwari et al., 2022).

Evidence that the project has reached the "moving" stage is demonstrated by several indicators: the Plan of Action (PoA) was developed and agreed upon, a supervision team was formally established, a tiered supervision schedule was created, supervision forms were digitized using Google Forms, and a pilot supervision trial was conducted involving two nurses. The implementation of POSAC through a digital, tiered supervision model represents a major strength of this residency project. Tiered clinical supervision has been shown to enhance nurses' competence, self-confidence, performance, and patient safety. Previous studies have reported that the effective implementation of tiered clinical supervision has a significant impact on improving nurses' competencies in delivering nursing care, while simultaneously enhancing patient safety and quality of care (Korprina et al., 2024).

The primary limitation of this project is that it has only reached the "moving" stage and has not yet progressed to the "refreezing" stage; therefore, the sustainability of the supervision culture and long-term effectiveness have not yet been demonstrated. Moreover, existing evidence indicates that the implementation of supervision is often constrained by workload-related barriers. The evaluation in this project involved a limited number of participants (two nurses deemed competent) and has not yet demonstrated broader impacts on patient-related outcome indicators. Additionally, several implementation challenges such as organizational culture, workload demands, and digital readiness must be anticipated and addressed to ensure sustainability and scalability of the intervention.

CONCLUSION

The plan to optimize tiered nursing competency supervision in the Central Surgical Installation (IBS) received a positive response. A tiered nursing supervision team has been established, a routine supervision schedule has been developed using Google Sheets, and the supervision form has been converted into a Google Forms format. The tiered nursing supervision activities have been piloted using the Google Forms format from the Head Nurse to PK III, and from the Team Leader to PK II and PK I. The trial implementation of supervision for two nurses demonstrated competent performance.

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