



STRENGTHENING CLINICAL LEADERSHIP LITERACY AND LEADERSHIP STYLE APPROACHES AS STRATEGIES FOR PATIENT SAFETY CULTURE TRANSFORMATION

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ABSTRACT

Patient safety culture is a key component of healthcare quality and is greatly influenced by ward leadership as first-line managers. Challenges such as low incident reporting, a culture of blame, and inconsistent implementation of safety procedures are still commonly found. Therefore, an innovative approach is needed to strengthen clinical leadership literacy as the foundation for changing patient safety culture. To evaluate the implementation of the Leadership for Change Initiative through strengthening the leadership style literacy of ward heads. This study used a case study design with a descriptive-educational intervention approach in two hospitals, involving ward heads (n=25 on the first day; n=20 on the second day) as samples in this study. The intervention consisted of providing reading modules on six leadership styles (autocratic, democratic, transformational, transactional, participatory, and laissez-faire) and interactive learning evaluation based on Quizizz. The evaluation included concept understanding, mini case analysis, reflective questions, and leadership decision-making simulations. There was an increase in the average learning score from the first day to the second day in concept understanding (76.4% to 81.2%), case analysis (71.8% to 78.5%), reflective ability (68.2% to 75.0%), and decision simulation (73.6% to 80.1%). Participants showed an increased awareness that leadership is situational and contextual to patient safety. The Leadership for Change Initiative, based on leadership literacy modules and digital reflective evaluation, has the potential to be an effective initial strategy for increasing the awareness and leadership competencies of ward heads as a foundation for strengthening patient safety culture.

Keywords: digital reflective learning; leadership literacy; patient safety culture; transformation

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INTRODUCTION

Patient safety is the cornerstone of a quality healthcare system. This effort aims to minimize risks, prevent unexpected incidents (KTD/KNC), and provide safe care for patients (Indonesian Minister of Health Regulation No. 11 of 2017). WHO (2021) reports that 1 in 10 patients experience adverse events while receiving care in health facilities, and more than 50% of these incidents can actually be prevented through the implementation of an effective safety culture (WHO, 2021). Patient Safety Culture is defined as the shared values, beliefs, and norms held by staff that influence their actions and behaviors in promoting and maintaining patient safety (AHRQ, 2019). One crucial dimension

of this culture is the formation of a Just Culture, where mistakes are reported without fear of punishment, thus becoming a source of learning for the system, rather than individual mistakes (Permenkes No. 11 of 2017). The patient care environment is a crucial area in improving safety culture, where interactions between nurses and patients occur intensively.

The head of the ward is the first-line manager who plays a central role in ensuring the implementation of operational standards and patient safety programs in their unit. Effective ward manager leadership greatly influences the motivation, performance, and behavior of practicing nurses in implementing a patient safety culture. An effective leadership style can reduce clinical errors, improve team coordination, and increase compliance with safety procedures (Mutair et al., 2023; Alzahrani et al., 2022). The strategic role of the ward head as a clinical leader and driver of patient safety culture is also emphasized in various studies by lecturers at the Faculty of Nursing, University of Indonesia, which show that unit leadership contributes significantly to strengthening patient safety culture, teamwork, and the quality of nursing services (Nurmansyah et al., 2019). Other studies confirm that many hospitals still face challenges, such as low incident reporting, a culture of blame, lack of feedback, and inconsistent implementation of SOPs (Elmontsri et al., 2020; Ofei et al., 2021). Research by Nurhidayati & Budi (2019) states that a supportive and non-punitive leadership style has been proven to significantly increase nurses' compliance in reporting incidents (both KNC and KTD), in line with the findings of a study by FIK UI lecturers which showed that non-punitive and supportive leadership encourages incident reporting behavior and patient safety learning at the service unit level (Nurmansyah et al., 2020).

Ward managers who implement participatory leadership create a climate where nurses are not afraid of punishment, thereby increasing safety transparency. One approach that is often recommended in modern health management literature is the leadership-driven change initiative, which is change that is actively led by nursing leaders who are able to provide vision, motivate staff, and create an environment that supports learning (Wong et al., 2021). The Leadership for Change Initiative approach is relevant in positioning nursing leaders, namely ward managers, as change agents who encourage professional change, communication, and safety support systems. This study aims to develop and test the Leadership for Change Initiative approach as an innovative strategy in strengthening patient safety culture through the ward manager's leadership style approach.

Preliminary results from ward managers at both hospitals on December 15, 2025 – December 16, 2025, using the Mind Tools application, showed that 100% of ward managers at Hospital X applied a democratic or participatory leadership style, but the patient safety culture score across all wards was still in the moderate category. Meanwhile, at Hospital Y, 88% of ward heads had implemented a democratic or participatory leadership style, and the patient safety culture score was still dominated by the moderate category (76%), with a small portion in the strong category (12%) and needing improvement (12%). These findings show that the dominance of one leadership style alone is not sufficient to produce an optimal and sustainable patient safety culture.

Modern leadership literature emphasizes that leadership effectiveness in a clinical context is highly dependent on the leader's ability to adopt a situational and adaptive multistyle approach (Northouse, 2022). Patient safety requires a balance between assertive leadership to ensure compliance with standards and participatory-transformational leadership to encourage learning, reflection, and incident reporting without blame (just culture). Without adequate clinical leadership literacy, ward managers tend to apply leadership styles intuitively and non-contextually, thereby limiting their impact on safety culture. Therefore, strengthening clinical leadership literacy and understanding of the multistyle approach are important strategies in transforming patient safety culture. Leadership literacy not only includes knowledge of various leadership styles but also the reflective ability to select and integrate the style that best suits the clinical situation, safety risks, and team readiness. This approach is in line with the results of research by FIK UI lecturers who place adaptive

leadership and reflective learning as the foundation for strengthening patient safety culture in hospitals (Hariyati et al., 2020; Nurmansyah et al., 2021). This approach is in line with the global agenda of the WHO (2021) and AHRQ (2019), which place adaptive leadership as a key element in strengthening patient safety culture in healthcare facilities.

This study aimed to evaluate the implementation of the Leadership for Change Initiative through clinical leadership literacy modules and Quizizz-based reflective evaluation among ward heads in two type C hospitals. Specifically, this study described ward heads' participation, changes in learning evaluation scores, response patterns to leadership-style cases, and the initial impact of the intervention on clinical leadership literacy related to patient safety culture.

METHOD

This study used a case study design with a descriptive-educational intervention approach. The design was selected to evaluate the implementation process and initial learning outcomes of the Leadership for Change Initiative as an educational strategy for strengthening clinical leadership literacy among ward heads. The study focused on describing participation, learning evaluation scores, reflective responses, and initial leadership awareness rather than testing causal effectiveness. The study was conducted in two type C hospitals in Depok, referred to as Hospital X and Hospital Y. The participants were ward heads who had managerial responsibility for nursing service coordination and patient safety implementation in their units. Participation was voluntary. A total of 21 ward heads completed the two-day learning activity and Quizizz-based evaluation.

The intervention consisted of two main components. The first component was a structured Leadership Reading Module. The module covered six leadership styles relevant to nursing management: autocratic, democratic, transformational, transactional, participatory, and laissez-faire leadership. The module described the definition, key characteristics, strengths, limitations, and appropriate clinical application of each style in relation to patient safety practice.

The second component was a Quizizz-based interactive evaluation. After studying the reading module, participants completed a digital evaluation that included four domains: concept understanding, mini case analysis, reflective questions, and clinical leadership decision-making simulations. The questions were designed to assess not only factual understanding but also the participants' ability to identify suitable leadership responses for specific patient safety situations.

Data were collected from Quizizz results and participants' response patterns to reflective questions. Quantitative data included participation numbers, concept comprehension scores, mini case analysis accuracy, reflective response adequacy, and leadership decision simulation accuracy. Descriptive qualitative data were obtained from patterns in reflective responses that described participants' awareness of situational and contextual leadership in patient safety.

Data analysis was conducted descriptively. Frequencies and percentages were used to present participation and learning evaluation results, while reflective response patterns were summarized narratively. The analysis focused on identifying trends in understanding, reflection, and readiness to apply adaptive leadership approaches in patient safety-related situations. This activity was conducted according to ethical principles in nursing research, including voluntary participation, respect for autonomy, confidentiality, and aggregate reporting. Individual identities and specific work units were not reported. Data collected through Quizizz were used only for research, learning evaluation, and quality improvement purposes.

RESULT

Results of the Leadership for Change Initiative Implementation

Participant Participation

The Leadership for Change Initiative was implemented over two days in Hospital X and Hospital Y. Participants received a leadership style reading module and completed a Quizizz-based learning evaluation. A total of 21 ward heads completed the learning activity on both implementation days.

Tabel 1.

Implementation of Leadership Style Literacy (n=21)

Implementation Day	Leadership Module Focus	Number of Ward Heads
Day 1	Transactional, Authoritarian, Democratic Leadership	21 people
Day 2	Integration of leadership concepts continued evaluation	21 people

Table 1 shows that all 21 ward heads participated in the two-day leadership literacy implementation. The first day focused on understanding selected leadership styles, while the second day emphasized integration of concepts and continued evaluation through Quizizz.

Learning Evaluation Results Using Quizizz

The learning evaluation included four types of questions, namely concept understanding, mini case analysis, reflective questions, and clinical leadership decision-making simulations. The learning outcomes achieved showed an increase in interest from participants.

Table 2.

Learning Outcomes of the Leadership Style Reading Module (n=21)

Evaluation Indicators	Day I	Day 2
Concept comprehension	76,4%	81,2%
Mini case accuracy	71,8%	78,5%
Reflective ability	68,2%	75,0%
Decision simulation accuracy	73,6%	80,1%

Table 2 indicates improvement in average concept comprehension from 76.4% to 81.2%, mini case analysis accuracy from 71.8% to 78.5%, reflective ability from 68.2% to 75.0%, and leadership decision simulation accuracy from 73.6% to 80.1%. These findings indicate improved understanding and reflective awareness after the second day of learning evaluation.

Participants' Response Patterns to Leadership Styles

Analysis of Quizizz responses showed three main response patterns. First, transactional and autocratic leadership styles were easier for participants to recognize in the early stage because these styles were associated with supervision, compliance, and direct control in clinical units. Second, democratic and participatory styles were increasingly recognized in mini case and reflective questions, especially in situations requiring communication, staff involvement, and shared problem solving. Third, participants began to differentiate when a directive leadership approach was needed to manage immediate patient safety risks and when a participatory or transformational approach was more appropriate for learning, quality improvement, and incident prevention.

Initial Impact on Clinical Leadership Literacy

Based on the evaluation results and reflective response patterns, the implementation produced several initial achievements. Participants developed a more uniform knowledge foundation regarding six nursing leadership styles. They also demonstrated increased awareness that leadership in patient safety is situational and contextual. Reflective responses indicated emerging critical thinking related to daily leadership practice, particularly in decision-making, team communication, staff involvement, and incident reporting culture. Quizizz functioned as a digital medium for formative evaluation and reflective learning, not only as a cognitive assessment tool

DISCUSSION

Strengthening Clinical Leadership Literacy as the Foundation for Patient Safety Culture Change

The results of the Leadership for Change Initiative implementation show that strengthening clinical leadership literacy through the provision of structured reading modules on six leadership styles, followed by interactive learning evaluation based on Quizizz, is an effective initial strategy in promoting patient safety culture change. This finding is relevant to the concept that patient safety culture is not only shaped by systems and procedures, but is also greatly influenced by leadership that shapes the values, attitudes, and behaviors of staff at the service unit level (WHO, 2021; AHRQ, 2019). These findings are in line with the results of research by lecturers at the Faculty of Nursing, University of Indonesia, which confirms that the leadership of ward heads plays a significant role in building safety values, team communication, and consistency in patient safety practices in hospitals (Althobaiti, 2026)

The improvement in concept understanding from Day 1 to Day 2 suggests that the reading module helped establish a common conceptual foundation among ward heads. This is important because patient safety culture requires shared interpretation of what leaders should do when dealing with clinical risk, safety deviations, staff errors, and quality improvement needs. Recent evidence indicates that nursing leadership is associated with staff outcomes, organizational outcomes, and patient-related outcomes, although the effects depend on leadership style, context, and the work environment (Northouse, 2022; Hult et al., 2023).

The increase in reflective ability also indicates that leadership literacy should not be limited to knowing the definition of leadership styles. Ward heads need to be able to interpret clinical situations, identify the level of safety risk, consider team readiness, and select the most appropriate leadership response. A systematic review by Althobaiti (2026) emphasized that leadership styles influence patient safety culture through mechanisms such as empowerment, feedback, communication, and psychological safety. Therefore, leadership literacy should include reflective reasoning and contextual decision-making, not only theoretical knowledge (Hariyati et al., 2020; Nurmansyah et al., 2021).

The use of Quizizz supported interactive, immediate, and structured evaluation. In this study, Quizizz helped participants engage with concept questions, case scenarios, reflective questions, and decision simulations. Current educational technology evidence shows that gamified quiz platforms can enhance engagement, provide immediate feedback, and help educators identify participants who need additional support, although content quality and cognitive depth still require educator oversight (Durgungoz & Durgungoz, 2025). In the context of nursing leadership development, such a platform can function as a practical tool for formative evaluation and reflective learning.

The response patterns showed that participants were more familiar with transactional and autocratic styles because these styles resemble common managerial practices related to supervision, task allocation, and procedural compliance. This is understandable in clinical settings where ward heads must ensure timely implementation of patient safety procedures. However, patient safety culture cannot be strengthened through control alone. It also requires staff empowerment, trust, feedback, and non-punitive learning, which are more closely aligned with participatory and transformational leadership approaches (Davis et al., 2025; Hamdan et al., 2024)

Adaptive and Multi-style Leadership in Patient Safety Practice

The findings reinforce the need for ward heads to adopt adaptive and multi-style leadership. Patient safety situations differ in urgency, complexity, and team readiness. In urgent or high-risk situations, such as medication errors, fall risk, or failure to follow patient identification procedures, a directive or transactional approach may be needed to ensure immediate compliance. In contrast, incident

analysis, quality improvement, and staff development require participatory, democratic, and transformational approaches to build learning and shared ownership.

Current leadership literature emphasizes that no single leadership style is sufficient for all clinical situations. Leadership effectiveness depends on the leader's ability to align behavior with context, goals, and team needs (Northouse, 2022). This is consistent with recent evidence showing that transformational leadership is positively associated with patient safety culture and nursing safety practices, while safety culture can mediate the relationship between transformational leadership and safe nursing practice (Hamdan et al., 2024).

The multi-style leadership approach is also relevant to the concept of just culture. A just culture requires leaders who can balance accountability with learning. Leaders must be firm when unsafe practice threatens patients, but they must also create psychological safety so that staff are willing to report errors and near misses. Davis et al. (2025) showed that just culture principles can improve transparency and risk reporting by shifting the focus from blame to system learning. Therefore, adaptive leadership is needed to balance standard enforcement with non-punitive learning.

The findings also suggest that leadership literacy development should be treated as a continuing process rather than a one-time training activity. A two-day educational intervention can improve initial understanding and reflection, but transformation of patient safety culture requires sustained leadership practice, coaching, feedback, and organizational support. A systematic mixed studies review on safety leadership in nursing management highlighted that nurse leaders require institutional support, teamwork, standards, and ongoing development to implement safety leadership effectively in hospital wards (Lusianah et al., 2022)

Overall, the Leadership for Change Initiative can be positioned as an early-stage intervention to prepare ward heads for broader patient safety culture transformation. The intervention strengthened awareness that ward leadership must be situational, reflective, and responsive to patient safety risks. However, further implementation should include follow-up mentoring, repeated evaluation, integration with patient safety indicators, and involvement of staff nurses and upper management to ensure that changes in literacy are translated into daily leadership behavior and unit-level safety culture.

Limitations

This study has several limitations. First, the study used a descriptive-educational intervention design without a control group; therefore, changes in learning evaluation scores cannot be interpreted as causal effects of the intervention. Second, the implementation period was short and focused mainly on cognitive and reflective learning outcomes. It did not directly measure long-term changes in leadership behavior, incident reporting, or objective patient safety indicators.

Third, the sample was limited to ward heads from two type C hospitals in Depok, so the findings cannot be generalized to all hospitals. Fourth, the use of Quizizz-based evaluation may capture understanding and reflection but does not fully represent actual leadership performance in clinical practice. Fifth, the intervention focused on ward heads and did not yet involve staff nurses, patient safety committees, or top management, although sustainable patient safety culture transformation requires multi-level organizational support.

Research Ethics

This research was conducted according to ethical principles, including respect for participant autonomy, confidentiality, and scientific integrity. All participants joined voluntarily after receiving an explanation of the purpose, procedure, and benefits of the Leadership for Change Initiative.

Participation in the learning and evaluation program did not affect performance appraisal or job position.

Data collected through the Quizizz platform were analyzed in aggregate form without reporting individual identities or specific work units. All information was used only for research, leadership development, and patient safety quality improvement purposes. The researchers ensured that data collection, analysis, and reporting were conducted objectively and responsibly.

CONCLUSION

The Leadership for Change Initiative through a structured clinical leadership literacy module and Quizizz-based reflective evaluation showed positive initial results in strengthening ward heads' understanding, reflective ability, and contextual decision-making related to patient safety leadership. The intervention improved learning scores in concept comprehension, mini case analysis, reflective ability, and leadership decision simulations.

The findings indicate that ward heads need adaptive and multi-style leadership competencies to respond to the complexity of patient safety practice. Patient safety culture transformation requires leaders who can balance procedural compliance with staff empowerment, open communication, just culture, and continuous learning. Although the findings are preliminary, this initiative provides an important foundation for further leadership development programs that are more sustainable, behavior-oriented, and integrated with patient safety culture indicators.

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