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Training Management for Patient Education in Critical Care Areas at a Central General Hospital in Manado, Indonesia

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ABSTRACT

Patient and family education is a cornerstone of quality healthcare, particularly in critical care areas where clinical uncertainty, high-risk decisions, and emotional distress converge. Despite its recognized importance, patient education in intensive care settings often remains inconsistent due to time pressure, heavy workloads, communication barriers, and limited standardized tools. This qualitative case study analyzes how training management can improve patient education practices in a critical care environment at a central general hospital in Manado, Indonesia. The study examines (1) training planning and needs assessment, (2) training implementation strategies, (3) training evaluation, and (4) contextual factors influencing success. Data were collected through in-depth interviews, FGDs, observation, and document review, and analyzed using an interactive approach supported by triangulation. Findings indicate that patient education quality was initially suboptimal, reflected in frequent refusal of medical procedures (approximately 50 cases per month), high family anxiety (around 80%), and inconsistent use of educational media. Key factors shaping patient education included nurses' workload and time constraints, cultural and literacy barriers among families, variability in communication competence, and uneven availability and enforcement of SOPs and supporting media. A Training Needs Analysis (TNA) identified gaps across six key competency domains and informed the development of ten training modules. Training was delivered through simulation, role play, and bedside coaching, improving staff compliance with patient education SOPs from 38% to 70%. Evaluation using the Kirkpatrick and CIPP models suggested that training was relevant and impactful, although some outcome targets remained unmet. Recommendations include digitalizing education media, strengthening SOP implementation, embedding training into performance appraisal systems, and expanding training across units.

Keywords: ICU, CIPP, critical care, health communication, Kirkpatrick, nurse competence, patient education, simulation training, training management.

INTRODUCTION

Critical care units represent one of the most complex service environments within hospitals. Patients are medically unstable, treatment decisions may be urgent, and families often experience uncertainty, fear, and psychological distress. Under these conditions, patient and family education becomes essential not only to support informed consent and adherence but also to reduce anxiety, strengthen trust, and promote collaborative decision-making. Education in critical care is not limited to information transfer; it is an interactive process that helps families understand clinical status, procedures, and risks, while enabling healthcare workers to explore concerns, values, and expectations.

International literature underscores that patient education contributes to improved outcomes, reduced misunderstanding, and enhanced satisfaction. Falvo (2020) argues that effective patient education increases adherence and clarifies expectations during treatment. In critical care contexts, Mardanian and Stafford (2021) describe patient education as both a challenge and an opportunity: it can reduce uncertainty, but it is constrained by clinical urgency and organizational conditions. Similarly, Chaboyer et al. (2019) highlight that nursing-sensitive outcomes are shaped by the quality of care processes, including communication and education.

However, critical care education practices often remain inconsistent. Communication barriers may emerge from limited time, high workload, differences in health literacy, and cultural factors. Farahani et al. (2013) emphasize that communication barriers can significantly reduce the effectiveness of patient education, leading to confusion, reduced engagement, and lower satisfaction. In addition, ICU education frequently depends on individual staff initiative rather than standardized institutional systems, resulting in variability in content, delivery, and documentation.

From a management perspective, these challenges indicate a need for structured training management. Training management involves systematic processes to diagnose competency gaps, design training programs, implement learning strategies, and evaluate outcomes for continuous improvement. Training and development literature consistently shows that well-designed programs contribute to performance improvement and organizational outcomes (Aguinis & Kraiger, 2009). In healthcare, structured training is particularly vital because competence influences patient safety, communication quality, and ethical decision-making.

This study explores training management for patient education in critical care areas at a central general hospital in Manado, Indonesia. Empirical indicators suggested that patient education was initially suboptimal, including frequent refusal of medical procedures (±50 cases/month), high levels of anxiety among families (≈80%), and inconsistent use of education media.

These indicators reflect not only individual communication challenges but also systemic training and managerial issues. Therefore, the study focuses on how training management through planning, implementation, and evaluation can strengthen patient education practices.

THEORETICAL FRAMEWORK

Patient Education in Critical Care

Patient education is a systematic process of delivering information and support to patients and families about health conditions, procedures, risks, and self-care behaviors. In critical care, education has additional functions: supporting informed consent, reducing uncertainty, strengthening trust, and enabling shared decision-making. Falvo (2020) positions patient education as a determinant of adherence and outcomes, while ICU-specific literature stresses the need for clarity, empathy, and tailoring to family needs (Mardanian & Stafford, 2021).

Multiple studies show that patient education quality can be constrained by organizational pressures. Hekmatpou et al. (2020) describe how professionalism and accountability shape nurses' responsibilities, including educational tasks. In ICU environments, Muma and Barbara (2020) emphasize that effective communication strategies are crucial due to emotional sensitivity and time constraints.

Training Management and Competence Development

Training management refers to the systematic design, delivery, and evaluation of training programs aimed at improving competence and organizational performance. General HRD research has demonstrated the broad benefits of training and development, including improved performance and stronger organizational capability (Aguinis & Kraiger, 2009). In healthcare, these benefits translate into improved patient education processes, adherence to SOPs, and more consistent communication.

A central concept in training management is Training Needs Analysis (TNA) a diagnostic approach used to identify competency gaps and prioritize training content. Classical approaches to TNA include organizational analysis, task analysis, and individual analysis (McGehee & Thayer, 1961), while contemporary training management emphasizes evidence-based program planning and alignment with performance indicators (Friedman et al., 2019). In ICU settings, TNA is especially important because competence gaps can directly impact high-stakes patient decisions and family wellbeing.

Learning Methods for Clinical Education: Simulation, Role Play, and Coaching

Competence in communication and patient education is best developed through experiential learning methods. Simulation-based training has been shown to improve learning outcomes in clinical contexts, including patient education tasks (Gonzalez et al., 2021; Rahman, Lestari, & Nugroho, 2020). Role play enables healthcare workers to practice difficult conversations and develop confidence, while bedside coaching supports real-time feedback and transfer of learning to practice (Hassan et al., 2019).

Evaluation Models: Kirkpatrick and CIPP

Training effectiveness requires systematic evaluation. The Kirkpatrick model evaluates training across four levels: reaction, learning, behavior, and results. The CIPP model (Context, Input, Process, Product) provides a broader systems perspective, enabling evaluation of planning quality, resource adequacy, implementation fidelity, and outcomes. Combining these models supports a more holistic understanding of training effectiveness in complex healthcare settings. This study applied both approaches to evaluate training relevance, implementation quality, and practical impacts.

Cultural and Communication Barriers in Patient Education

Critical care education occurs within sociocultural contexts. Families may have varying literacy levels, beliefs, and expectations, and cultural factors can influence understanding and acceptance of medical procedures. Farahani et al. (2013) identify communication barriers as a persistent challenge, while Wei et al. (2022) detail facilitators and barriers in educating critically ill patients, emphasizing the importance of context-sensitive communication.

Digitalization and Educational Media

Digital tools can strengthen education by standardizing content, expanding access, and supporting consistent delivery. Studies in health informatics describe how digital tools improve education processes in ICUs (Martin et al., 2020), and systematic reviews suggest technology-based tools can improve learning outcomes for nurses (Santos et al., 2022). Digital media may also reduce the burden on staff by providing structured information that complements verbal counseling.

METHOD

Research Design

This research used a qualitative case study design to explore training management for patient education in critical care areas. Case studies are appropriate for examining complex organizational phenomena in real-world settings (Yin, 2020).

Setting and Participants

The study was conducted in critical care areas, centered on ICU patient education processes. Participants included critical care staff (particularly nurses who frequently lead family education) and relevant stakeholders involved in training planning, implementation, and monitoring.

Data Collection

Four techniques were used:

1) In-depth interviews
2) FGDs
3) Observation of education practice and use of media/SOPs
4) Document review (training plans, SOPs, evaluation forms, education materials)

Data Analysis and Trustworthiness

Data were analyzed using an interactive model data reduction, data display, and conclusion drawing conducted iteratively until saturation. Credibility was strengthened through triangulation (methods and sources) and systematic documentation of analytic decisions.

RESULTS AND DISCUSSION

Baseline Condition: Patient Education Was Suboptimal

Empirical indicators revealed that education practice in critical care was initially suboptimal. The most striking indicators included:

- high rates of refusal of medical procedures (approximately 50 cases per month),
- severe anxiety among families (around 80%), and
- inconsistent use of educational media.

These indicators suggest that family understanding and trust were not consistently supported through structured education. Refusals and anxiety were frequently linked to uncertainty, incomplete explanations, inconsistent messaging among staff, and limited time for interactive counseling.

Key Factors Influencing Education Quality

Several contextual factors shaped the quality of patient education:

- Workload and time limitations: heavy nursing workload reduced time for education.
- Cultural and literacy barriers: families' varied backgrounds affected comprehension and acceptance.
- Communication competence: variability in skill contributed to inconsistent education.
- Availability and enforcement of SOPs and media: uneven access and inconsistent compliance reduced standardization.

These findings align with ICU literature emphasizing workload, communication complexity, and organizational culture as major determinants of patient education quality (Chaboyer et al., 2019; Farahani et al., 2013; Mardanian & Stafford, 2021).

Training Needs Analysis and Competency Gaps

Training Needs Analysis (TNA) identified gaps across six core competency domains. While the detailed domain list was contextualized for the unit, it broadly included:

- structured communication and counseling,
- SOP-based education practice,
- cultural responsiveness and literacy-sensitive teaching,
- consistent media utilization,
- teamwork/interdisciplinary coordination,
- documentation and audit readiness.

This TNA-driven approach reflects recommended training design logic in healthcare: using performance data and observed gaps to define learning priorities (Friedman et al., 2019).

Training Design and Implementation: Ten Modules, Experiential Learning

Based on TNA findings, ten training modules were developed and implemented using experiential methods simulation, role play, and bedside coaching. Simulation and role play were perceived as effective because they allowed nurses and staff to practice difficult conversations and decision-support scenarios in a safe learning environment, consistent with evidence from simulation-based ICU training (Gonzalez et al., 2021; Rahman et al., 2020).

Bedside coaching was particularly important for transfer of training to real practice. By embedding feedback into real workflows, coaching helped staff apply new skills under actual time pressure and patient complexity. This is consistent with interdisciplinary education perspectives that emphasize coaching and team-based learning for critical care communication (Hassan et al., 2019).

Improvement in SOP Compliance: 38% to 70%

A key quantitative indicator of behavioral change was improved compliance with education SOPs from 38% to 70% following training. This shift suggests that training supported more consistent execution of standardized education steps, likely reducing variability and improving predictability for families.

Training Evaluation: Kirkpatrick and CIPP

Evaluation using Kirkpatrick and CIPP models indicated that training was relevant and impactful, although some outcome targets were not fully achieved.

- From a Kirkpatrick perspective, staff perceived training as useful (reaction), demonstrated learning improvements (learning), and showed improved SOP compliance (behavior).
- From a CIPP perspective, training fit contextual needs (context), was supported by input resources to some extent (input), was implemented through experiential strategies (process), and produced measurable practice improvement but required further strengthening for full outcome attainment (product).

Training Management as a System Response to Education Failures

The baseline indicators procedure refusal, family anxiety, and inconsistent media use are not merely individual communication issues; they reflect systemic weaknesses in training design, SOP enforcement, and education infrastructure. This supports the argument that patient education quality in ICU settings depends on organizational systems, not only individual goodwill.

Training management responded effectively by:

1. diagnosing gaps through TNA,
2. translating gaps into structured modules,
3. implementing experiential learning methods suitable for clinical competence development, and
4. evaluating results using complementary frameworks (Kirkpatrick + CIPP).

This approach aligns with training literature suggesting that structured development programs improve performance outcomes (Aguinis & Kraiger, 2009) and that ICU education requires communication strategies tailored to complexity and anxiety (Muma & Barbara, 2020; Mardanian & Stafford, 2021).

Why Simulation, Role Play, and Coaching Worked

Simulation and role play are particularly effective in communication-heavy skills because they allow repeated practice, error correction, and reflection. Gonzalez et al. (2021) and Rahman et al. (2020) show that simulation-based training can improve ICU educational competence. Bedside coaching

strengthens transfer-of-training by connecting classroom learning to real-time challenges time pressure, emotional family reactions, and rapidly changing clinical conditions.

The Persistent Challenge of Outcomes Not Fully Achieved

Although SOP compliance improved substantially, not all outcome targets were achieved. This is common in complex settings: behavior change can precede broader outcomes such as reduced refusal rates or lower anxiety, which also depend on staffing levels, family demographics, and institutional trust. Farahani et al. (2013) emphasize that education barriers are multifactorial and may require organizational and cultural interventions alongside training.

Digitalization as a Strategic Recommendation

Digital educational media can standardize messages, reduce variability, and support families who require repeated explanations. Martin et al. (2020) and Santos et al. (2022) highlight that digital tools can enhance learning and education quality. In ICU settings, short standardized videos, interactive tablets, QR-based leaflets, and multilingual materials may support consistent education even when staff time is limited.

Recommended Training Management Model

Based on findings, a practical training management model is proposed:

1) Planning (Evidence-Based TNA + SOP Mapping)

- Use refusal rates, anxiety reports, and compliance audit data as performance indicators.
- Conduct TNA across organizational/task/individual levels (McGehee & Thayer, 1961).
- Map learning outcomes to SOP steps and common family misconceptions.

2) Organizing (Resources + Roles + Media)

- Assign a multidisciplinary training team (ICU nurse educator, physician representative, quality officer).
- Ensure availability of education media and clear SOP distribution.
- Develop a digital education package aligned with ICU workflows.

3) Implementation (Experiential + Workflow Embedded)

- Deliver modules using simulation, role play, and bedside coaching.
- Integrate microlearning refreshers into shifts (5–10 minutes).
- Standardize “core messages” so families receive consistent information.

4) Evaluation and Continuous Improvement (Kirkpatrick + CIPP + Audit)

- Kirkpatrick: reaction (relevance), learning (pre/post), behavior (SOP audit), results (trend in refusal/anxiety).
- CIPP: context fit, resource adequacy, process fidelity, product outcomes.
- Embed training results into performance appraisal and unit quality dashboards.

CONCLUSION

This study demonstrates that training management can significantly improve patient education practices in critical care settings. Baseline indicators revealed suboptimal education, evidenced by frequent treatment refusal, high family anxiety, and inconsistent use of educational media. Through TNA-driven design, ten structured modules, and experiential implementation (simulation, role play, bedside coaching), staff compliance with education SOPs improved from 38% to 70%. Evaluation using Kirkpatrick and CIPP confirmed training relevance and impact, though some outcome targets remained unmet, suggesting the need for broader system strengthening.

Future improvements should focus on digitalizing educational media, strengthening SOP enforcement, integrating training into performance appraisal, and scaling the program across units. In high-pressure ICU environments, training management is not an optional initiative but a quality and safety strategy that strengthens communication, supports family-centered care, and improves service reliability.

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