Clinical Learning Environment, Decision Making Competencies and Work Engagement Among Operating Room Nurses in a Selected Private Hospital: A Cross-Sectional Study

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ABSTRACT

The operating room (OR) represents a dynamic and high-stakes clinical setting where learning opportunities, decision-making competencies, and work engagement collectively shape patient safety and surgical outcomes. Exploring the interrelationship of these factors is essential in identifying strategies that optimize nurse performance and strengthen workforce retention. This study investigated the associations between the clinical learning environment (CLE), decision-making competencies, and work engagement among operating room nurses in a private tertiary hospital in Laguna, Philippines. Utilizing a descriptive-correlational design, the study employed total enumeration sampling of 18 registered nurses assigned to perioperative care. Data were gathered through a structured, self-administered questionnaire encompassing four sections: demographic profile, Clinical Learning Environment Tool (CLET), Decision-Making Competence and Style Scale, and the Work Engagement Scale. Statistical analyses included descriptive measures, Pearson's correlation, and significance testing at the 0.05 alpha level.

Findings revealed that respondents were predominantly female (61%), within the 21–30 age group (44%), largely bachelor's degree holders (94%), and with 2–3 years of OR experience (33%). Perceptions of the CLE were favorable, with the highest evaluations in skills development (M = 3.87) and feedback mechanisms (M = 3.73). Decision-making competence was also rated positively (M = 3.75), particularly in structured approaches and probability-based judgments, though a notable deficiency emerged in training related to decision science (M = 1.72). Work engagement levels were strong, with dedication receiving the highest score (M = 4.00). Correlational analysis indicated no significant association between the CLE and work engagement ($p > 0.05$). However, a weak but significant negative correlation was observed between pedagogical atmosphere and decision-making competence ($r = –0.47$, $p = 0.0492$), suggesting that highly prescriptive supervisory climates may inadvertently hinder independent judgment.

The results suggest that OR nurses in this setting perceive themselves as engaged and competent within a supportive learning environment, yet critical gaps persist in pedagogical reinforcement and formal decision-making training. To address these, the study recommends the adoption of a Comprehensive Clinical Leadership and Reflective Practice Program (CCLRPP) aimed at strengthening mentorship quality, feedback processes, and evidence-based decision-making practices.

Keywords: clinical learning environment, decision-making competencies, work engagement, operating room nurses, correlational study

INTRODUCTION AND BACKGROUND OF THE STUDY

In today's fast-paced and high-stakes healthcare environment, operating room (OR) nurses play a pivotal role in ensuring patient safety, surgical efficiency, and quality care outcomes. Their ability to make timely and accurate clinical decisions, remain engaged in their work, and adapt to dynamic clinical situations is essential for effective perioperative care. One critical determinant of these competencies is the clinical learning environment (CLE), which encompasses the physical, social, and organizational conditions in which nurses acquire knowledge, refine skills, and develop professional judgment. A supportive CLE not only enhances

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professional growth but also strengthens nurses' confidence in decision-making and promotes sustained work engagement—key elements in reducing burnout and improving retention in the profession (Falguera et al., 2025; Karimi Mirzanezam et al., 2024).

Globally, the nursing profession faces a shortage that impacts workforce stability, with the World Health Organization (2020) reporting a deficit of 5.9 million nurses worldwide, disproportionately affecting developing countries such as the Philippines. Locally, the Philippine Nurses Association (PNA) has raised concerns about burnout, low morale, and professional stagnation among nurses, particularly those in high-stress environments like the OR (Alibudbud, 2023). This is compounded by generational shifts in the workforce, with many Millennial and Gen Z nurses valuing purpose-driven work, opportunities for growth, and supportive environments that recognize their contributions (Zapata et al., 2023). Addressing these needs requires targeted institutional strategies that bridge the gap between clinical education and professional engagement.

This study is anchored in Kolb's Experiential Learning Theory (ELT), which posits that learning is a cyclical process involving concrete experience, reflective observation, abstract conceptualization, and active experimentation. In the OR context, this translates into learning through direct surgical participation, reflective assessment of clinical decisions, and the application of knowledge to new scenarios (Biabani & Izadpanah, 2019). Complementing this is Bandura's Social Cognitive Theory (SCT), which emphasizes self-efficacy, observational learning, and environmental support as drivers of motivation and skill development (Tadayon & Bijandi, 2012). Together, these frameworks explain how a well-structured CLE can foster decision-making competencies and sustain work engagement by reinforcing nurses' confidence and resilience.

Despite the wealth of literature on CLE, decision-making, and work engagement, limited research has examined their interrelationship within the specialized context of OR nursing, especially in private healthcare institutions where resource allocation, leadership styles, and organizational cultures may differ from public settings. This gap is particularly relevant in the Philippines, where contextual factors such as staffing patterns, access to professional development, and institutional support vary significantly between healthcare facilities.

This study aims to determine the relationship between the clinical learning environment, decision-making competencies, and work engagement among operating room nurses in a selected private hospital. Specifically, it seeks to: (1) describe the demographic profile of OR nurses; (2) assess their perceptions of the clinical learning environment; (3) evaluate their decision-making competence and style; (4) determine their level of work engagement; and (5) examine the correlations between these variables. The findings will inform the development of a Comprehensive Clinical Leadership and Reflective Practice Program (CCLRPP) to enhance decision-making skills, foster engagement, and optimize the CLE for OR nurses.

The scope of this research is confined to registered nurses assigned to the OR in a selected private hospital in Laguna, Philippines, during the study period. The study does not include nurses from other hospital departments or institutions, and results may not be generalizable beyond similar contexts. Data are based on self-reported perceptions, which may be influenced by response bias. Nevertheless, the focus on a specific, specialized nursing environment allows for in-depth exploration of the variables under study.

The significance of this research lies in its potential contributions to nursing practice, education, and research. For practice, it provides empirical evidence to guide the design of targeted interventions that improve workplace support, leadership engagement, and decision-making training. For education, it informs curriculum development by highlighting essential competencies for OR nursing and advocating for simulation-based and reflective learning approaches. For research, it fills a critical gap by integrating CLE, decision-making, and work engagement into a single framework within a specialized nursing context, opening avenues for longitudinal and intervention-based studies.

METHODOLOGY

This study employed a descriptive correlational research design, a non-experimental approach used to determine the relationship between variables without manipulation. This method was appropriate for

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examining the association between the clinical learning environment, decision-making competencies, and work engagement among operating room nurses (Bhandari, 2021). Correlational research allowed the researcher to observe the variables as they naturally occurred in the clinical setting and to measure the strength and direction of their relationships (Appinio, 2023).

The population consisted of registered nurses assigned to the operating room (OR) of a selected private hospital in Laguna, Philippines, during the study period. Inclusion criteria required participants to be registered nurses with an active license, employed full-time in the OR, and with at least six months of continuous OR experience to ensure adequate exposure to the clinical learning environment and independent decision-making. Participants were aged 21 to 60 years and consented to take part in the study. Exclusion criteria included nurses on leave, those assigned to administrative or managerial roles, and nurses undergoing training or orientation, as their responsibilities and level of clinical engagement differed from full-time OR nurses. Total enumeration sampling was employed due to the small number of eligible OR nurses in the facility, ensuring that all individuals meeting the criteria were invited to participate. This method is suitable when the target population is small and shares characteristics central to the study (Crossman, 2020). A minimum sample size of 24 was calculated using G*Power 3.1, assuming a medium effect size (d = 0.5), 80% statistical power, and a 0.05 significance level.

The study was conducted in a tertiary-level private hospital located in Laguna, Philippines. The hospital had a 100-bed capacity and was equipped with modern facilities, including a surgical department located on the third floor. The operating room complex consisted of four operating theaters, two birthing rooms, a recovery room, and an endoscopy room. This unit accommodated a wide range of surgical procedures, including laparoscopic, cardiac, neurological, ophthalmic, ENT, plastic, and obstetric-gynecologic surgeries, providing a diverse clinical environment for the study.

Data were collected using a structured, self-administered questionnaire composed of four parts. The first part collected demographic data, including age, sex, highest educational attainment, and length of service. The second part used the Clinical Learning Environment Tool (CLET), adapted from Johansson et al. (2010), to measure perceptions of the clinical learning environment across six domains: pedagogical atmosphere, leadership style, premises of care, general clinical learning experience, feedback evaluation, and skills developed. Responses were rated on a four-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree). The third part of the questionnaire included the Decision-Making Competence and Style Scale, adapted from the work of Donelan et al. (2016, as cited in Bujar et al., 2017), which measured both competence and decision-making styles. The fourth part utilized the Work Engagement Scale based on the Utrecht Work Engagement Scale (UWES) framework, as adapted by Torabinia et al. (2017), covering the domains of vigor, dedication, and absorption. The instrument underwent face and content validation by a panel of 12 experts in nursing practice, education, and research. Reliability was tested using Cronbach's alpha, with all domains achieving acceptable internal consistency thresholds (>0.70) as recommended by Tavakol and Dennick (2011).

Ethical approval was secured from the Institutional Review Board (IRB) of the University of Perpetual Help System Dalta. Permission to conduct the study was also obtained from the Chief Nurse of the participating hospital. The study adhered to the principles outlined in the Declaration of Helsinki (World Medical Association, 2013), ensuring the protection of participants' rights, dignity, and welfare. Informed consent was obtained from all participants after they were briefed on the study's objectives, procedures, potential risks, and benefits. Participants were informed of their right to withdraw at any stage without any consequences. Confidentiality was maintained by assigning codes instead of names, and no identifying information was included in the reports. Electronic data were stored in encrypted files, while physical consent forms were secured in a locked cabinet. Data were retained only for the required period and were destroyed thereafter to protect participant privacy.

RESULTS AND DISCUSSION

The results of the study revealed that the operating room (OR) nursing workforce in the selected private hospital was predominantly young, with nearly half (44%) aged 21–30 years, followed by 39% aged 31–40 years, and only 17% aged 41–50 years. This profile suggested a workforce largely composed of early- to mid-

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career professionals, a trend consistent with the generational shift in the global nursing profession as reported by the National Academies of Sciences, Engineering, and Medicine (2021).

The gender distribution showed a majority of female nurses (61%), in line with traditional patterns in nursing demographics, although the 39% male representation indicated a gradual shift toward greater gender diversity in the field, similar to global trends noted by Lyu et al. (2022).

Educationally, most respondents (94%) held a bachelor's degree, reflecting adherence to national and international recommendations for higher academic preparation in nursing as a means to improve patient safety, quality of care, and professional competence (Aiken et al., 2017).

In terms of clinical experience, the largest proportion (33%) had between two and three years of OR practice, suggesting a critical stage of professional development where foundational competencies are solidifying, yet opportunities for advanced skills and leadership roles are emerging (Benner, 1984).

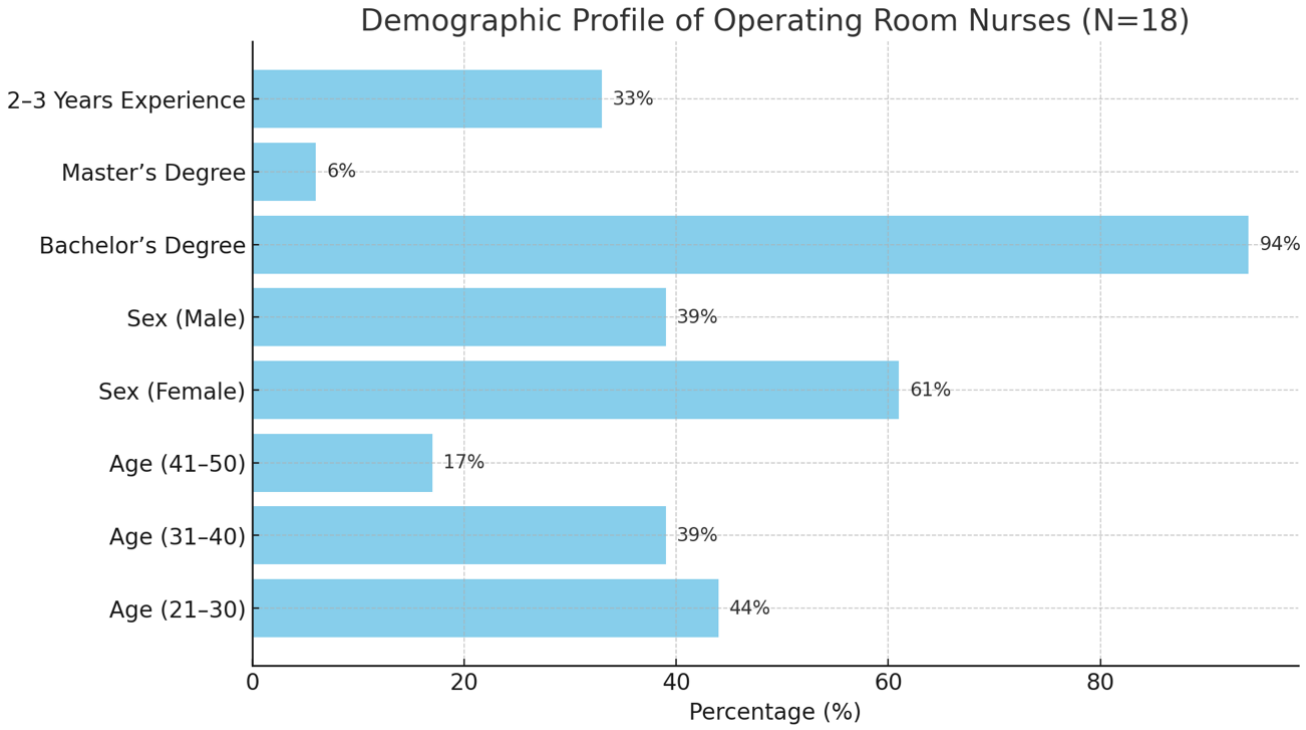

Figure 1: Demographic Profile of the Operating Room Nurses

Perceptions of the clinical learning environment (CLE) were generally positive across all assessed domains, with the highest ratings in skills developed (M = 3.87) and feedback evaluation (M = 3.73). These findings indicated that the OR environment in this hospital provided ample opportunities for nurses to enhance their procedural competence, clinical reasoning, and integration of theory into practice—factors that have been consistently associated with improved patient outcomes and nurse confidence (Ewertsson et al., 2015). Feedback mechanisms were perceived as clear, constructive, and regular, echoing Burgess et al.'s (2020) assertion that formative feedback not only reinforces correct practices but also motivates learners toward continued improvement. Leadership style also scored highly (M = 3.69), with respondents acknowledging that their supervisors were approachable, supportive, and committed to balancing learning opportunities with patient safety priorities. This is consistent with Falguera et al. (2025) and Karimi Mirzanezam et al. (2024), who identified effective leadership and mentorship as central to fostering a positive CLE. However, slightly lower scores in pedagogical atmosphere and premises of care suggested areas where communication, resource optimization, and overall learning climate could be further enhanced.

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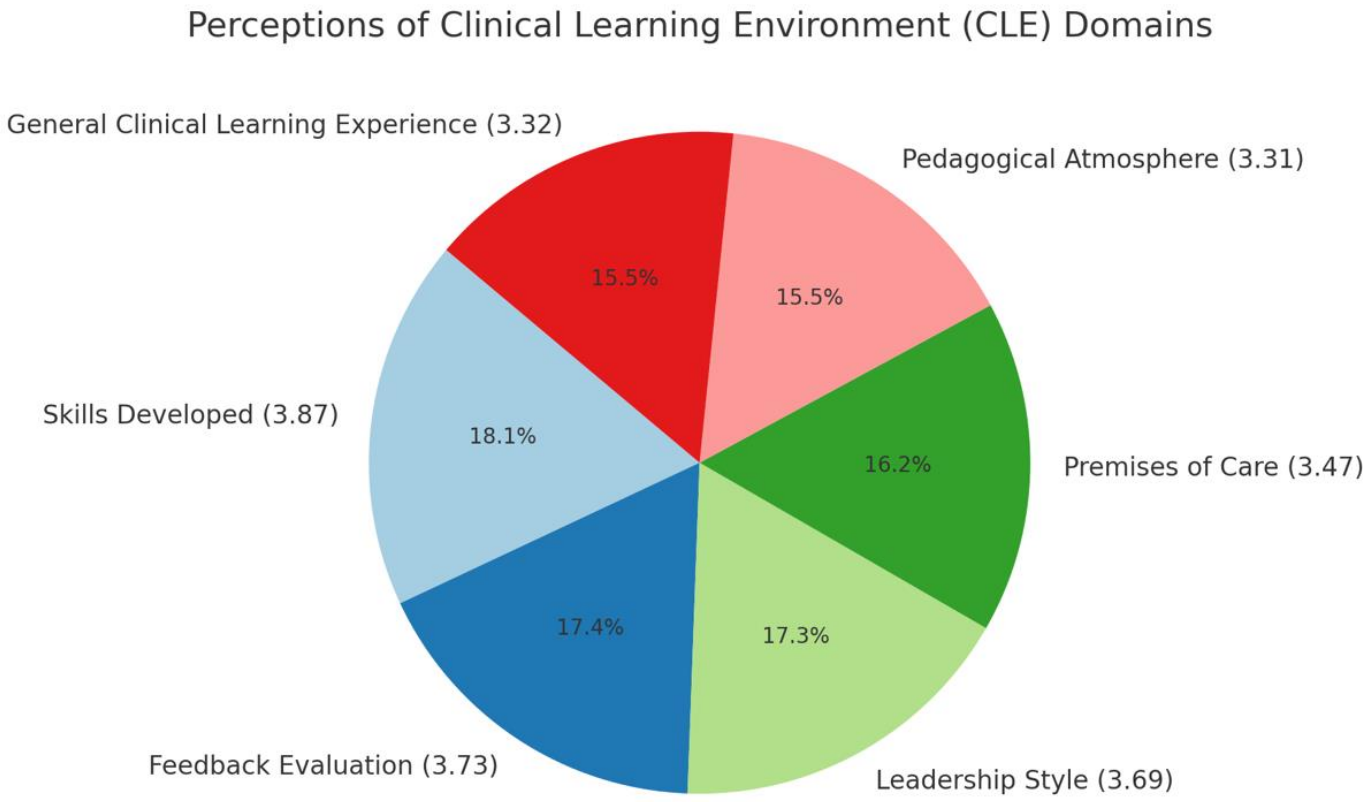

Figure 2: Perceptions of Clinical Learning Environment (CLE) across domains

Decision-making competence was rated positively overall (M = 3.75), with nurses reporting strong reliance on structured approaches, probability assessments, and professional experience when making clinical judgments. The highest ratings were given to the recognition of the significance of decisions (M = 4.06) and the importance of experience in guiding choices (M = 4.22). However, the notably low rating for receiving training in the science of decision-making (M = 1.72) pointed to a substantial educational gap. This aligns with Mohamed and Elrais' (2017) findings that formal decision-making training is often underemphasized in nursing practice, despite its potential to improve outcomes in high-stakes environments. Moreover, the respondents largely rejected ineffective decision-making styles, such as allowing emotions or procrastination to influence actions, suggesting that the OR culture in this setting supports analytical and evidence-based decision-making processes.

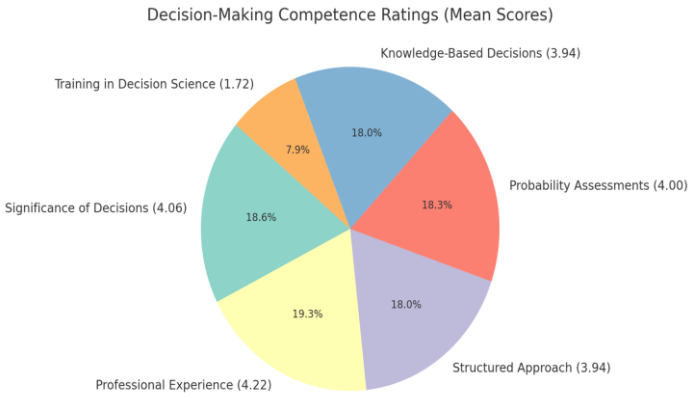

Figure 3: Decision-making Competence Rating

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Work engagement among respondents was also rated highly, with dedication achieving the highest mean score (M = 4.00), followed by vigor (M = 3.71) and absorption (M = 3.61). These results are comparable to the findings of Kim et al. (2023) and Uddin (2023), who demonstrated that engagement is strongly influenced by leadership support, access to resources, and a meaningful work environment. The high level of dedication reported here likely reflects a combination of intrinsic motivation and the supportive aspects of the CLE.

Correlation analysis revealed no statistically significant relationship between the overall CLE and work engagement ($p > 0.05$). This finding was somewhat unexpected, as previous studies have often linked supportive learning environments to higher engagement (Karimi Mirzanezam et al., 2024). One possible explanation is that engagement in this context may be influenced more by individual-level factors such as personal values, resilience, or intrinsic motivation, rather than by environmental variables alone. Interestingly, a weak but statistically significant negative correlation was observed between pedagogical atmosphere and decision-making competence ($r = –0.47$, $p = 0.0492$). This suggests that certain pedagogical conditions—potentially those involving excessive supervision or rigid instructional approaches—might inadvertently limit the development of independent decision-making skills. This finding contrasts with Johansson et al. (2010), who emphasized that positive pedagogical climates typically enhance competence, indicating the need for further investigation into how supervisory styles interact with nurse autonomy in decision-making.

In conclusion, the results painted a picture of a competent, engaged, and relatively young OR nursing workforce operating in a generally supportive clinical learning environment. The key strengths identified—skills development, effective feedback, and supportive leadership—are consistent with the literature on high-performing healthcare teams. However, the identified gaps, particularly in formal decision-making training and aspects of the pedagogical atmosphere, highlight areas where targeted interventions could further enhance nurse competence and engagement, ultimately improving both professional satisfaction and patient care quality.

The results of this study highlight important implications for strengthening both the clinical learning environment and the professional development of operating room nurses. Findings revealed that while nurses reported high levels of confidence in their decision-making and engagement, gaps remain in formal training on decision science and in the consistency of reflective practice. To address these gaps, a Comprehensive Clinical Leadership and Reflective Practice Program (CCLRPP) is proposed. This program would serve as a structured and evidence-based intervention that blends leadership development, reflective practice, and decision-making science into one cohesive framework. By providing opportunities for guided reflection, peer mentorship, and simulation-based training, the program can help nurses refine critical thinking and improve confidence in handling high-pressure clinical situations.

Moreover, strengthening the pedagogical atmosphere is essential. Supervisory approaches that balance support with autonomy can foster independent decision-making without diminishing patient safety. Similarly, ensuring that clinical settings are well-resourced with equipment and accessible learning opportunities will optimize both the nurses' professional growth and patient outcomes. These strategies affirm that improving the physical, organizational, and interpersonal dimensions of the clinical learning environment can directly enhance the quality of perioperative nursing practice.

Finally, the study underscores the need for future research to extend beyond cross-sectional designs. Employing longitudinal or mixed-method approaches could provide a deeper understanding of how competencies, engagement, and perceptions of the learning environment evolve over time. Such evidence would be invaluable in shaping long-term strategies for sustaining professional development and advancing patient-centered care in surgical settings.

While the study offers valuable insights, it is not without limitations. The research was confined to a single private hospital in Laguna, which may limit the generalizability of the findings to other healthcare settings, particularly public or rural institutions. The relatively small sample size, although inclusive of the entire OR nurse population in the facility, also restricted the statistical power of correlation analyses. Furthermore, the use of self-reported questionnaires introduced the possibility of response bias, as participants may have overestimated or underestimated their competencies and engagement due to social desirability or personal

perceptions. The cross-sectional design limited the ability to infer causality between variables, and unmeasured factors such as organizational culture, personal resilience, and work-life balance may have influenced the results. Despite these constraints, the study provides a critical foundation for targeted interventions aimed at enhancing decision-making competencies, engagement, and the overall quality of the clinical learning environment for OR nurses.

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