

Developing a Theoretical Direction for In-Service Education Using Locsin's TCCN Theory in Psychiatric Nursing

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Abstract

Introduction: There is a pressing need to improve psychiatric nursing services by bridging the gap between technological competency and ethical, compassionate care. **Objective:** This study aimed to develop and propose a structured in-service education program for psychiatric nurses, grounded in Locsin's Technological Competency as Caring in Nursing (TCCN) theory. **Program Development:** The program was developed using the Analyze, Design, Develop, Implement, and Evaluate (ADDIE) model. The proposed in-service education program consists of ten structured sessions, which are aligned with Locsin's five assumptions and three nursing processes. The planned evaluation includes participant reports and the use of the Technological Competency as Caring in Psychiatric Nursing Instrument (TCCNPNI), which assesses nurses' perceptions of their technological competency. This instrument allows for pre- and post-evaluations to determine the program's effectiveness. This education plan, rooted in TCCN theory, addresses the unique needs of psychiatric nurses working with vulnerable populations. **Program Description:** The anticipated outcomes highlight the potential of technology to enhance patient care quality and dignity in psychiatric settings. As technology becomes more integral to psychiatric nursing practice, nurses must not only develop technical competence but also uphold ethical sensitivity. **Conclusion:** This program provides a structured approach to achieving these competencies through continuing education.

Keywords:

In-Service Education, Person-Centered Care, Psychiatric Nursing



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INTRODUCTION

Healthcare technology is gaining traction to improve the quality of psychiatric care and address the shortage of healthcare workers. With advances in medical technology, various tools are now used in clinical practice (Mahara et al., 2023; Dang et al., 2023), including blood pressure monitors, electrocardiograms, imaging systems (X-rays, computed tomography (CT) scans, MRIs), and infusion pumps. When used ethically and skillfully, technology can significantly enhance patient care.

Technologies unique to psychiatric nursing, such as cameras for monitoring seclusion and restraint, and modified electroconvulsive therapy (m-ECT), present complex ethical dilemmas for nurses. For instance, while monitoring cameras ensure patient safety, their use can conflict with a patient's right to privacy and dignity. Similarly, the application of m-ECT raises serious concerns about patient consent and autonomy, particularly among vulnerable populations. These examples highlight a crucial need for nurses to possess not only technological competence but also high ethical sensitivity to navigate these challenges. Locsin's Technological Competency as Caring in Nursing (TCCN) theory (Locsin & Purnell, 2015) provides a vital framework for harmonizing technology and caring, emphasizing that the purpose of technology in nursing is always to enhance human dignity and caring.

According to the Ministry of Health, Labour and Welfare's Survey of Medical Institutions (as of the end of May 2023), there are 9,266 hospitals in Japan, of which 1,058 are psychiatric hospitals (Ministry of Health, Labour and Welfare, 2023). As of May 2023, there were approximately 1.68 million hospital beds in Japan, of which approximately 338,000 (20%) were psychiatric beds. The average length of stay in a psychiatric hospital was 274.7 days, which was longer than in general hospitals. Furthermore, psychiatric hospitals accounted for 21.6% (1,056 facilities) of all hospital beds in medical institutions nationwide. Medium-sized hospitals with 200–300 beds are the most common type of psychiatric hospitals and are responsible for providing psychiatric care (Portal Site of Official Statistics of Japan, 2024).

In recent years, there have been multiple reports of incidents of patient abuse by physicians and nurses at psychiatric hospitals in Japan. In April 2024, the Mental Health and Welfare Act was amended (Ministry of Health, Labour and Welfare, 2024a). In psychiatric hospitals, it is now compulsory for all staff (not just physicians and nurses but also all staff working in psychiatric hospitals) to report cases of abuse to the prefectural government when they

discover a person with a mental disability they believe has been abused (Ministry of Health, Labour and Welfare, 2024b). Roach (1987) states that "healthcare is a moral enterprise because it brings people into unique relationships through moral bonds involving duties and responsibilities. Whenever we are in a relationship with another person, we establish bonds, grounded in trust, entail duties and responsibilities: an ethic of relational responsibility". Therefore, education that promotes ethical behaviors among psychiatric nurses is necessary. Factors associated with unethical behavior in psychiatry include a lack of personnel, excessive workloads, working conditions, lack of supervision, and lack of in-service education (Eren, 2014). Therefore, the integration of technological competency with ethical sensitivity in in-service education is crucial, as highlighted by recent integrative reviews (Osaka et al, 2024a).

In psychiatric nursing, various technologies are used to promote patient understanding and improve quality of life. Locsin's Technological Competency as Caring in Nursing (TCCN) theory, consisting of five assumptions and three nursing processes, emphasizes the harmonized integration of technology and caring (Locsin & Purnell, 2015). Based on the concept of person-centered care (PCC), the quality of psychiatric nursing and healthcare services should be improved. Starfield stated that it is important to interact with patients, with the goal of PCC being to have a meaningful life in mind (Starfield, 2011). Person-centeredness requires the formation of a therapeutic relationship among professionals, patients, and their significant others (McCormack & McCance, 2021; Byrne et al., 2020). Beyond Japan, TCCN has been applied to technology-enabled mental healthcare in community settings. A theory-directed thematic analysis among Thai older adults using smartphone mental health applications identified themes such as self-care, relational enhancement, moment-to-moment acceptance, challenges, and usability, each mapped to TCCN constructs (Soonthornchaiya et al., 2025). These findings support the global transferability of TCCN and the need to integrate ethical and relational considerations alongside technical skills in psychiatric nursing education. To implement these services, providing psychiatric nursing based on the TCCN theory is important. However, there is currently no standardized framework for training psychiatric nurses to integrate technological competence with ethical sensitivity in daily practice. This study aimed to develop and propose an in-service education program for psychiatric nurses based on Locsin's Technological Competency as Caring in Nursing (TCCN) theory.

METHODS

- b) Apply Carper's fundamental patterns of knowing in nursing to patient care (Carper, 1978).
- c) Develop individualized and person-centered nursing plans.

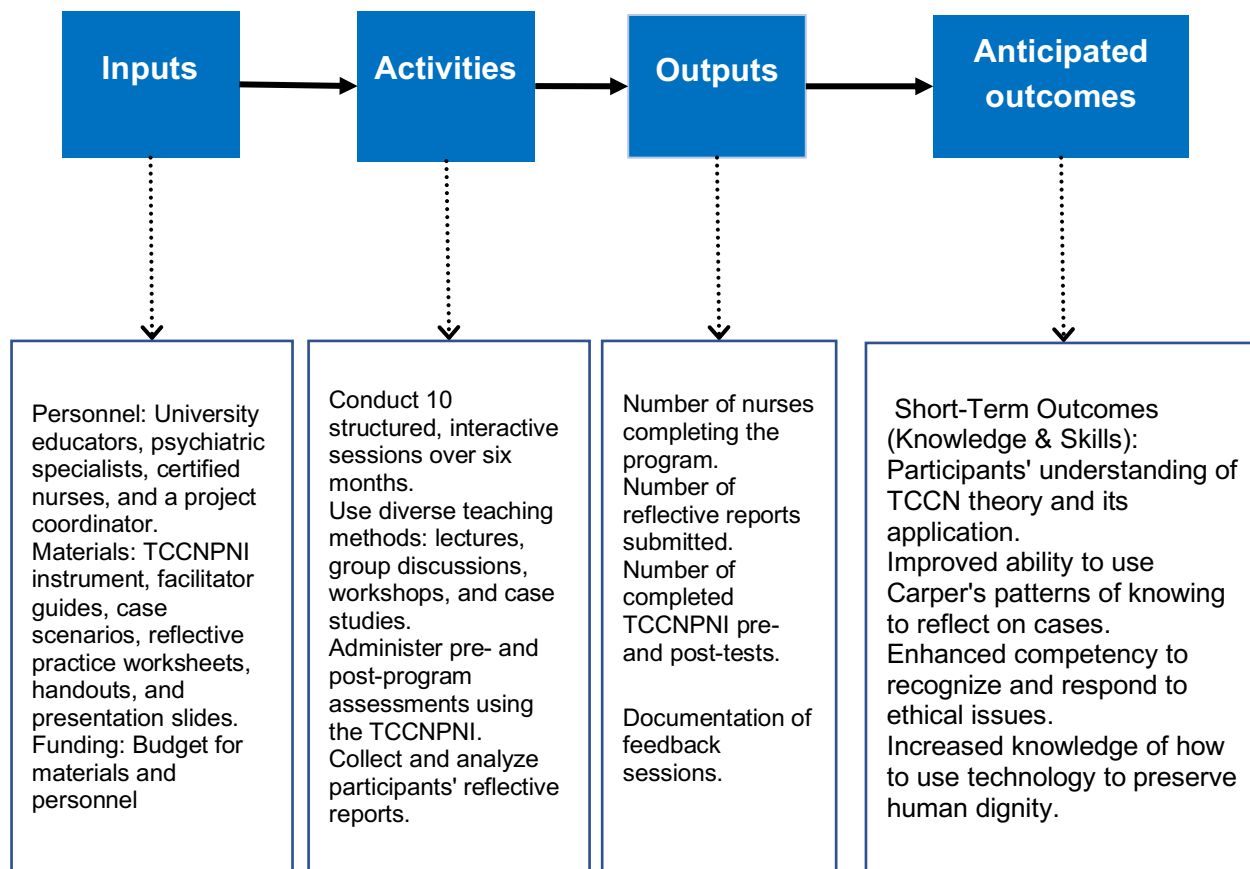


Figure 1. Logic Model

1. Design (ADDIE framework)

The Analyze, Design, Develop, Implement, and Evaluate (ADDIE) framework (Davis, 2013) was used to develop the in-service education program. The ADDIE model was chosen for its methodical approach to curriculum development, ensuring that educational interventions are grounded in empirical research and are both relevant and quantifiable. Each stage offered a systematic way to develop, refine, and plan the program, allowing for flexibility based on participant needs and learning objectives. To visually summarize the program's structure and expected linkages, a logic model was developed (Figure 1), outlining inputs, activities, outputs, and anticipated outcomes.

2. Program Design (Analysis and Design Phases)

A comprehensive literature review identified key educational gaps among psychiatric nursing staff, highlighting the necessity of standardizing technology competency, navigating ethical dilemmas, and promoting person-centered care (PCC). The target audience for this program includes psychiatric nurse managers, staff nurses, and assistant nurses. The program's learning objectives are to enable participants to:

- a) Understand the TCCN theory framework and its application in psychiatric settings.

The program is planned for in-hospital implementation with an expected enrollment of approximately 35 registered nurses. This sample size was determined based on feasibility for a single-site pilot study, while being sufficient to detect a moderate effect size (Cohen's $d \approx 0.5$) in pre/post comparisons. The inclusion criteria require participants to be registered or assistant nurses working on psychiatric wards with at least six months of experience. Conversely, exclusion criteria include temporary, part-time, or non-clinical staff. The recruitment plan will be conducted through the hospital's Nursing Department, with a required attendance rate of $\geq 80\%$ for program completion.

3. Program Development (Development Phase)

Based on the design, comprehensive educational materials were created. These include detailed handouts summarizing the TCCN theory (Locsin & Purnell, 2015), reflective practice worksheets, and case scenarios specifically tailored to psychiatric care settings. As planned in the design phase, pre- and post-training assessments will be conducted using the Technological Competency as Caring in Psychiatric Nursing Instrument (TCCNPNI) (Takashima et al., 2025). This instrument, with an

internal consistency reliability of Cronbach's $\alpha = 0.864$, measures four key factors: (1) competency to practice caring and person-centered care; (2) competency to recognize and respond to ethical issues; (3) competency to utilize technology in psychiatry; and (4) competency to practice care for the preservation of human dignity and shared decision-making. Facilitator guides were also developed, providing structured outlines for each session and prompts for Carper. During the development phase, we planned how to operationalize the designed educational methods.

IMPLEMENTATION AND EVALUATION PLANS

4. Program Implementation (Implementation Phase)

The instructional strategy for implementing and evaluating the program is summarized in Table 1 and detailed in Table 2. The program consists of 10 structured sessions over six months. Experienced university educators, psychiatric care specialists, and certified nurses will deliver the program, incorporating diverse teaching methods such as lectures, group discussions, and scenario-based problem-solving exercises. The final product of this phase is the structured program itself.

5. Evaluation Plan (Evaluation Phase)

The evaluation plan is designed to assess the program's effectiveness in meeting its objectives. Quantitative analysis will include paired t-tests (or Wilcoxon signed-rank tests) on TCCNPNI scores to measure changes in competency from pre- to post-

assessment. Qualitative analysis will involve thematic content analysis of participants' reflective reports, which will be based on Carper's fundamental patterns of knowing in nursing (Carper, 1978), to evaluate their understanding and application of the concepts. Success criteria include an anticipated mean increase of ≥ 0.5 SD in TCCNPNI scores and an 80% program completion rate.

6. Ethical Considerations

This study will be conducted in accordance with the Declaration of Helsinki and institutional research ethics guidelines. Prior to implementation, the detailed study protocol, including all planned evaluation procedures, will be submitted for review and approval by the Institutional Review Board (IRB) of the collaborating hospital.

Our ethical pathway is designed to protect all participants even in this low-risk educational evaluation. Written informed consent will be obtained from all nurses after they have been provided with comprehensive information about the program content, schedule, and the voluntary nature of their participation. We will clearly state that their decision to participate or decline will have no impact on their employment status or performance evaluations. To ensure confidentiality, all participant data will be anonymized using unique identification codes. The data will be stored on a password-protected, encrypted server accessible only to the research team.

All research materials, including consent forms and data, will be securely archived for the mandated period, and then destroyed in accordance with institutional policy to ensure data security.

Table 1. The Content of the In-Service Education Program

Program	Time (minutes)	Content	Target participants
Session 1. Orientation	60	Giving an overview of the program and self-introduction of the participants	Nurse Managers Mid-level Staff Nurses New Nurses
Session 2. Lecture-discussion I	90	Introduction to TCCN theory and its application.	Nurse Managers
Session 3. Activity 1	45	<ul style="list-style-type: none"> Providing scenarios requiring application of TCCN theory. Instruct participants to individually reflect on the case and record their thoughts 	Mid-level Staff Nurses New Nurses
Session 4. Lecture-discussion II	90	Reflective practice using Carper's patterns of knowing.	Mid-level Staff Nurses New Nurses
Session 5. Activity 2	45	Providing scenarios requiring application of Carper's patterns of knowing.	Mid-level Staff Nurses
Session 6. Lecture-discussion III	90	Developing person-centered nursing care and improving team care.	Nurse Managers

Program	Time (minutes)	Content	Target participants
Session 7. Activity 3	45	Providing scenarios regarding the application of person-centered nursing care and its importance in improving team care.	New Nurses
Session 8. Workshop 1	120	<ul style="list-style-type: none"> Facilitating small group discussions to share perspectives to identify challenges and gaps in their understanding. Instruct participants to give practical examples to explain how these frameworks apply to psychiatric nursing. 	Nurse Managers
Session 9. Group discussion	30	Discussing what has been learned in the in-service education program	Nurse Managers Mid-level Staff Nurses
Session 10. Summary Feedback 1	and 45	<ul style="list-style-type: none"> Facilitating discussion to summarize key learnings. Collecting feedback from participants to improve future sessions. 	Nurse Managers Mid-level Staff Nurses

DISCUSSION

Significance of the TCCNPN

This in-service education program is designed to foster the development of psychiatric nurses who can benefit from a practice grounded in Person-Centered Care (PCC) and Locsin's Technological Competency as Caring in Nursing (TCCN) theory. While TCCN theory has historically been applied to acute care settings (Locsin & Purnell, 2015), our study is unique in its focus on psychiatric nursing, which we argue has distinct needs. The content of this program is specifically tailored to the psychiatric context, building on the work of Osaka et al. (2024b).

Furthermore, the program's emphasis on aesthetic knowing—based on Carper's patterns of knowing (Carper, 1978) enables nurses to move beyond technical procedures to provide care that respects patients' dreams, hopes, and individual circumstances. By fostering this awareness, the program is designed to prevent the dehumanization that can occur in psychiatric settings. It is hoped that this deeper understanding will empower psychiatric nurses to respond appropriately to ethical issues such as behavioral restrictions and restraints, aligning with Locsin's premise that technological competence is an expression of caring.

Addressing Implementation

The program addresses the educational needs of psychiatric nurses and enhances their ability to integrate technology and care into practice. This underscores the importance of ethical reasoning, person-centered care (PCC), and person-centered approaches in psychiatric nursing, laying a strong foundation for continuous professional development and improved quality of care. The program's implementation phase ensures the effective

dissemination of knowledge by beginning with leadership and cascading to all levels of staff, which is consistent with best practices in healthcare education where senior staff act as change agents (Osaka et al., 2024b).

Limitations and Future Directions

This study presents a theoretical direction and a detailed plan for an in-service education program; however, it has several limitations. The primary limitation is the lack of empirical data, as the program was not actually implemented. Consequently, this study cannot provide specific findings on the program's effectiveness or the real-world issues that might arise during its execution. This absence of empirical outcomes means the proposed benefits and anticipated changes are based on a theoretical framework rather than direct evidence.

A more reflective discussion on the potential barriers to real-world implementation is also necessary. While the program's design is robust, its successful adoption in a psychiatric hospital setting is contingent on several factors. Staffing constraints, including a lack of qualified educators and the difficulty of freeing up busy nursing staff for training sessions, could significantly impede implementation. Furthermore, cultural differences may influence how the program is received and applied. The TCCN theory, originating in Western nursing academia, may require adaptation to align with the unique cultural values and communication styles prevalent in Japanese healthcare settings. Additionally, institutional readiness is a crucial consideration. Not all psychiatric hospitals possess the organizational culture or infrastructure to support a comprehensive,

Table 2. Implementation and Evaluation Plans of the TCCN Theory Based In-Service Education Program

	1. Implementation	2. Evaluation
Objective	Deliver or distribute the training to the intended audience and support their learning process.	Assess the effectiveness of the training in achieving its learning objectives and identify areas for improvement.
Task	<ul style="list-style-type: none"> University educators, specialist nurses, and certified nurses with expertise in psychiatric care. 	Before and after in-service education, perception and practice will be measured using Technological Competency as Caring in Psychiatric Nursing Instrument (TCCNPNI).
	<p>Facilitator Guide</p> <ul style="list-style-type: none"> Pre-Intervention Activity: Distribute the case scenario to participants. Instruct participants to individually reflect on the case and record their initial thoughts (15 minutes). Facilitate small group discussions to share perspectives (15 minutes). Encourage participants to identify challenges and gaps in their understanding. <p>Intervention (Lecture and Workshop)</p> <ul style="list-style-type: none"> Provide an overview of TCCN theory and Carper’s fundamental patterns of knowing. Use practical examples to explain how these frameworks apply to psychiatric nursing. <p>Practical Application of Concepts (Workshop)</p> <ul style="list-style-type: none"> Divide participants into small groups. Provide scenarios requiring application of TCCN theory and Carper’s fundamental patterns of knowing in nursing. Guide groups to analyze scenarios and present their solutions. <p>Post-Intervention Activity</p> <ul style="list-style-type: none"> Ask participants to revisit the initial case scenario. Facilitate group discussions comparing pre- and post-intervention insights. Encourage critical thinking and dialogue about the differences in their approaches. <p>Supportive Learning Environment (Summary and Feedback)</p> <ul style="list-style-type: none"> Lead a discussion to summarize key learnings. Collect feedback from participants to improve future sessions. 	<p>Each participant will develop a report and presentation on how they apply the nursing process based on TCCN theory to the cases of their assigned patients.</p> <p>This will involve utilizing Locsin’s three nursing processes to practice psychiatric nursing within the framework of TCCN theory.</p> <p>Feedback will be collected on the effectiveness and relevance of the sessions through group discussions. Strengths and areas of improvement in the training will be identified.</p> <p>The reports will be evaluated to determine whether participants could articulate their thoughts on providing individualized and person-centered psychiatric nursing. Success criteria, including ≥80% program completion, an anticipated mean increase of ≥0.5 SD in TCCNPNI scores from pre- to post-assessment.</p>
Outcomes		

long-term educational initiative like this. Without strong buy-in from hospital leadership and a supportive ethical climate, the program may fail to create a lasting impact.

Future research should therefore focus on conducting a pilot study to gather empirical data on the program's outcomes and should also explore these implementation challenges in depth. This includes a thorough analysis of the organizational and cultural factors that either facilitate or hinder the program's success. Furthermore, future iterations of the program may consider additional modules focusing on interdisciplinary collaboration and addressing the pervasive issue of burnout in psychiatric nursing (Orlando & Koga, 2024). Fostering a supportive team environment and encouraging shared responsibility can reduce the emotional burden on nurses, which is a known factor contributing to burnout and, consequently, unethical behavior (Ashtari, Farhady, & Khodaei, 2009). The ability of nurses to safely express their opinions and collaborate with an interdisciplinary team is crucial for both preventing abuse and delivering high-quality, safe care.

CONCLUSION

The developed in-service education plan, grounded in the Technological Competency as Caring in Nursing (TCCN) theory, is designed to address the unique needs of psychiatric nurses who work with vulnerable populations. The program aims to foster a harmonious balance between technological competence and ethical sensitivity, which is critical as healthcare technology becomes more integral to practice.

The program's anticipated impact is expected to extend directly from enhanced nurse competencies to improved patient outcomes. We envision that by explicitly teaching nurses to use technology as an intentional means of caring, the program will lead to more respectful, safer, and consistent person-centered care. Specifically, we anticipate a notable improvement in patient outcomes, including enhanced dignity and a reduced risk of harm. The program's effectiveness in achieving these anticipated impacts will be rigorously evaluated through pre- and post-program assessments using the TCCNPNI and qualitative analysis of reflective reports, with a follow-up planned at 4-8 weeks to measure sustained change.

Conflict of Interest

There are no conflicts of interest in this study.

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and the importance of properly understanding technology and using technology to provide person-centered nursing care.

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