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In-service education for psychiatric nurses based on the technological competency as caring in nursing theory

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Abstract

Introduction: One of the strategies that can be used to improve the quality of psychiatric care is the development and dissemination of a new in-service education program based on the use of technologies for both psychiatric nurse managers and nurses. Objective: This discussion paper aimed to report on in-service education for improving the quality of psychiatric nursing care based on the Technological Competency as Caring in Nursing (TCCN) theory for psychiatric nurse managers and staff nurses. Method: Relevant articles related to psychiatric nursing care, in-service education, technologies in nursing, and caring in nursing were retrieved, analyzed, discussed, and developed. Result: The use of in-service education programs based on the TCCN is expected to become a practical approach to incorporating new technologies into quality psychiatric care. Conclusion: Use of in-service education programs based on the TCCN theory is expected to become a practical approach to incorporating new technologies into quality psychiatric nursing care in the future.

Keywords:
In-service Education, Psychiatric Nursing, Technological Competency as Caring in Nursing

INTRODUCTION

An increasing number of patients with psychiatric disorders present with physical complications associated with aging. Great concern has been expressed about the shorter average life expectancy of the mentally ill compared to the healthy population, which is attributed to cardiovascular and other diseases (Kanzaki et al., 2015; Uju et al., 2020). However, in psychiatric care, the proportion of patients requiring management for physical and mental illnesses is increasing, yet no drastic measures have been developed to address this trend.

Mental health care emphasizes person-centered care, and the quality of care must be improved (Ahn & Yi, 2022). However, a history of psychiatric care is marked by incidents in which patients with mental illness were either misunderstood as not being ill, left untreated, or subjected to abuse (Handerer et al., 2021).

Locsin developed the theory of "Technological Competency as Caring in Nursing (TCCN)" in 2005, foundational concepts from Nursing as Caring (Boykin & Schoenhofer, 2001); Theory of Nursing by Roach (1987); Swanson's (1991); Mayeroff's (1971), the first philosophical book to study caring itself. This theory arose from the question, "Do technologically competent nurses express caring in their practice?" (Locsin, 2005), with five underlying assumptions. These assumptions are: 1) "Persons are caring by virtue of their humanness" (Boykin & Schoenhofer, 2001); 2) "The ideal of wholeness is a perspective of unity" (Locsin & Purnell, 2015); 3) "Knowing persons is a multidimensional process" (Locsin & Purnell, 2015); 4) "Technologies of health and nursing are elements for caring" (Locsin & Purnell, 2015); and 5) "Nursing as a discipline and a profession" (Boykin & Schoenhofer, 2001). The focus of the TCCN theory is on preserving the humanity of patients during care provided in a highly technological environment.

Research on the applicability of Locsin's TCCN theory to education, research, and practice has been conducted and has begun to be verified in several countries (Krel et al., 2022). There is also a high level of interest in the TCCN theory in the field of psychiatry, and a scale has been developed to measure the state of practice based on the TCCN theory (Takashima et al., 2024).

Locsin and Purnell (2015) also emphasized the ideal of providing nursing care that fulfills the dreams and hopes of patients and their families. This concept is particularly relevant in modern psychiatric nursing, where technology is used, and there is a growing need to develop quality psychiatric nursing that respects the humanity of individuals with mental illness (Megens & Van Meijel, 2006; Schröder & Ahlström, 2004). To provide high-quality nursing care, nurse managers and nurses must commit to improving themselves and their nursing skills through continuing education (Nakano et al., 2021). Therefore, new in-service education programs need to be developed and disseminated to improve the quality of psychiatric nursing.

Thus, this study aims to report on the developed in-service education based on the TCCN theory for psychiatric nurse managers and staff nurses to improve the quality of psychiatric nursing care.

METHOD

Relevant literature and studies from the past decade on psychiatric nursing, technology in nursing, and caring in nursing were reviewed, and the direction of development for TCCN theory-based in-service education was discussed. The results and discussion were organized into the following categories: 1) Psychiatric nursing care, 2) Psychiatric nursing care and knowing person, 3) Technologies, patient safety, ethical issues, and human rights protections, 4) Psychiatric nursing and technology, and 5) In-service education in psychiatric nursing

RESULT

1) Psychiatric Nursing Care

Psychiatric nurses care for patients with mental and physical illness. They must provide appropriate mental health care while understanding and respecting the patient (Berg et al., 2023). Establishing a trusting relationship with the patient through effective communication is essential for this purpose (Sanz-Osorio et al., 2023).

In situations where a trusting relationship has not been established, patients may struggle to communicate or manifest abusive behavior (Amiri et al., 2019), requiring a considerable amount of knowledge, skill, and patience on the part of the nurse. The psychiatric nurse is responsible for accurately assessing and evaluating the patient's psychological and physical condition while monitoring them daily. Some patients may be unable to accurately communicate their symptoms and feelings to psychiatrists or nurses. Therefore, psychiatric nurses should closely observe the patient and detect even minor physical and mental changes.

In addition, in super-aging societies like Japan, the number of patients with dementia is increasing (Shimizu et al., 2013). In psychiatric hospitals, care is given to patients' physical needs and helps them take care of themselves (Söderhamn, 2013). Patients whose physical function has deteriorated significantly because of aging may require more comprehensive self-care assistance.

For individuals with schizophrenia, positive and negative symptoms and cognitive dysfunction can also impair their ability to care for themselves

(McGurk et al., 2000; Samuel et al., 2018). Psychiatric nurses should assist patients with diminished self-care skills (Wazni & Gifford, 2017). However, in psychiatry, minimal assistance is important for maintaining and improving patients' ability to perform self-care (Underwood, 1990). In addition, patients may require advanced care tailored to their mental and physical conditions in collaboration with various professionals in the psychiatric setting.

2) Psychiatric Nursing Care and Knowing Person

Locsin (2005) pointed out that integrating care and technology is important and cautioned that focusing on technology alone runs the risk of viewing patients as objects rather than individuals. Locsin's (2005) nursing theory cites Carper's (1978) "Fundamental Patterns of Knowing in Nursing" as a way of knowing people. The typology identifies four fundamental "patterns of knowing": 1) Empirical: factual knowledge from science or other external sources that can be empirically verified; 2) Personal: knowledge and attitudes derived from personal self-understanding and empathy, including imagining oneself in the patient's position; 3) Ethical: attitudes and knowledge derived from an ethical framework, including awareness of moral issues and choices; and 4) Aesthetic: awareness of the immediate situation, grounded in immediate practical action, including awareness of the patient and their circumstances as uniquely individual and of the integrated wholeness of the situation.

In the literature, persons are sometimes referred to as "schizophrenic patients" (Sass, 2007). This representation is "disease-focused." Therefore, this terminology may not be appropriate for a person with schizophrenia. The expression "person who suffers from schizophrenia" emphasizes the importance of recognizing the individual behind the diagnosis. It is important to know the patient in front of us and to understand their suffering and life. Additionally, the nurse should look at the healthy part of the patient, understand the patient's dreams and hopes, and consider care together with the patient (knowing person). Although it may be difficult to understand the patient's suffering, the ability to empathize and resonate with their emotions (aesthetic knowing) is an important nursing skill. It is important to recognize the inherent value of each individual and to provide care for individuals living with schizophrenia.

Many new patients are admitted to the psychiatric emergency department with unstable mental and physical conditions (Wong et al., 2020; White, 2021). It is important to empathize with patients and acknowledge their suffering throughout the process leading up to hospitalization, actively listen to their concerns, and deliver compassionate care (Tehranineshat et al., 2019). Additionally, ensuring their safety, offering reassuring communication, fostering trusting relationships with humility, and facilitating the expression of patients' thoughts, fears, and psychological symptoms are essential (Jiang et al., 2023). Providing patient-centered care (Abate et al., 2023) is also crucial for honoring patients' aspirations, dreams, and strengths.

3)Technologies, Patient Safety, Ethical Issues, and Human Rights Protection

In the TCCN theory, technology refers to what is useful to us (Locsin, 2005). For example, the clinical diagnostic criteria for dementia with Lewy bodies allow us to analogize the patient's condition from an empirical perspective. This allows the formulation of a care plan based on diagnosis, test results (e.g., dementia tests, biochemical tests), and medications. However, relying solely on these aspects may not provide a comprehensive understanding of the patient.

Another example can be found in psychiatry, where patient safety is ensured using locked doors in closed wards. These doors serve as a protective measure, preventing patients, particularly those with dementia, from leaving the ward unsupervised. If a patient is missing, staff or law enforcement officers should conduct a search. The use of locks in psychiatric hospitals represents a form of technology that plays a crucial role in maintaining patient safety.

Technology is important in psychiatric hospitals for ensuring patient safety; however, it can also raise ethical issues (Sanz-Osorio et al., 2023). While surveillance cameras can monitor locked wards and seclusion rooms to prevent escape and suicide, they can also create privacy issues (Appenzeller et al., 2020). Ethical decisions can be incorrect if both benefits and drawbacks are not considered. For example, in psychiatric practice, physicians, nurses, and other healthcare providers have keys to locked wards. By controlling access to these areas, patients are isolated from the rest of the hospital, and the possession of keys can become a symbol of authority (Chieze et al., 2021; Razzani et al., 2020). The use of keys in locked wards, including seclusion rooms, carries the risk of creating paternalistic attitudes due to the relationship between those who manage the facilities and those under their care (Greenall, 2006).

Zamorano et al. (2023) highlighted significant levels of stigma among health professionals. Individuals who have contact with mental health problems or who have undergone mental healthcare training tend to be less stigmatized. The phenomenon of stigmatization in psychiatric disorders is also an issue that should be particularly emphasized. Stigmatization is significantly influenced by the clinical features of psychiatric disorders and society's attributions to their causes. Effective interventions to prevent stigmatization require a thorough understanding of its underlying causes (ÇiLek & Akkaya, 2022).

On the other hand, there have been reports (Adigun et al., 2023; Patel et al., 2021) of suspected abuse and mistreatment of patients by healthcare providers such as nurses and professional caregivers in psychiatric hospitals and elderly care facilities. Recent investigative journalism (Shields et al., 2018) has provoked public concern about alleged abuse, negligence, understaffing, sexual assault, inappropriate medication use, patient self-harm, poor sanitation, and inappropriate restraint and seclusion. Japan had also reported on the abusive treatment of psychiatric patients (The Asahi Shimbun, 2019). Therefore, without a proper understanding of mental illness, nurses may fail to perceive their patients as individuals coping with mental health conditions.

While factors such as understaffing of healthcare personnel and problems with the management systems of these facilities have been cited as contributing factors, the human rights of persons with mental disabilities are being severely suppressed in psychiatric hospitals (Beaupert, 2018). Human rights abuses and coercive practices in mental health care supported by existing legislation and policies remain far too common. Involuntary hospitalization and treatment, unsanitary living conditions, and physical, psychological, and emotional abuse characterize many mental health services worldwide (World Health Organization & United Nations, 2023).

Similar to individuals with other disabilities, those with mental disabilities suffer degradation, stigmatization, and discrimination worldwide. However, unlike individuals with other disabilities, many individuals with mental disabilities are routinely confined against their will in institutions, depriving them of their freedom, dignity, and basic human rights (Perlin, 2006). The Mental Health 2020 proposal (Health and Global Policy Institute, 2020) states that the first step in improving the quality of life (QOL) of all people today is to eliminate stereotypes and prejudice against mental illness. Japan's Mental Health Welfare Law (Ministry of Health, Labour, & Welfare, 2024) was revised in April 2024, making reporting abuse to prefectural and other authorities mandatory.

For people with mental disabilities, the development of human rights protection may be even more significant than for those with other disabilities. Therefore, it is important to focus on the quality of care services rather than focusing solely on the patient's illness, disability, or life circumstances.

4) Psychiatric Nursing and Technology

Technologies have been increasingly employed to save and sustain patients' lives. In modern healthcare, nursing practice cannot be performed without the use of advanced and conventional technology. Although the application of technology-based interventions is increasing, the term is seldom used in research or practice. Considering that a lack of conceptual clarity of the term could compromise the effectiveness of technology-based interventions for healthcare providers, timely research is needed to bridge this gap (Su et al., 2021). Thus, nurses must develop their competencies to manage technologies and use them as avenues for knowing persons (Kongsuwan & Locsin, 2011; Koszalinski & Locsin, 2015).

Advanced technologies used in psychiatry include devices to maintain and improve physical conditions, such as ventilators and infusion pumps, as well as testing devices, such as x-rays, blood tests, computed tomography, magnetic resonance imaging, electrocardiograms, ultrasounds, electroencephalograms, neurological examinations, and blood tests, and the information obtained from these devices (Murai et al., 2014; Watson et al., 2023). Electroconvulsive therapy (ECT) is currently regarded as a valuable treatment option for intractable psychiatric disorders (Kellner et al., 2012; Pompili et al., 2013). Additionally, a previous study showed that levels of C-reactive protein (CRP) and white blood cell counts (WBC) are related to the symptoms of psychotic disorders (Liemburg et al., 2018). Nurses use information from these technologies to make assessments, plan care, and practice and evaluate compassionate care in nursing using the machines/devices and knowledge created by technology.

Technology is the systematized information about a process or method that affects a desired outcome through deliberate practical endeavor, with or without the use of materials or instruments (Orem, 1991). Nurses have always used tools and techniques to achieve valued ends (Barnard, 1996). Thus, interpersonal procedures as technologies, such as establishing the nurse-patient relationship (Peplau, 1952; Peplau, 1997), therapeutic communication (McAllister et al., 2004; Chijiiwa & Ishimura, 2024; Finley et al., 2024), facilitating the creation of a no-suicide agreement (Drew, 2001), etc. Technology in healthcare employs special equipment to understand the patient's condition as well as the patient's experience of the condition, and depending on the device, it is used to improve the patient's physical condition.

Understanding the use of technology to improve mental health care is critical. In the 2000s, there was a notable shift in pharmacotherapy for schizophrenia from typical antipsychotics to atypical antipsychotics (Conley & Mahmoud, 2001). Such medication changes may intensify symptoms in some patients. For example, psychiatric symptoms were intensified because the dosage was not precise, and atypical antipsychotics had the inherent problems of hyperglycemia and inducing rapid obesity. Therefore, psychiatrists and psychiatric nurses had to become familiar with the new technology (atypical antipsychotics). When nurses deeply understand such drug therapies,

they may collaborate effectively with physicians to monitor patient changes and respond appropriately. It is essential to recognize that new drugs are integral to technological advancements in healthcare, emphasizing technology's constant evolution and progression.

The various established assessment and evaluation scales relevant to psychiatric care are also considered technologies. These scales are practical applications of healthcare knowledge and are positioned as technologies for medical and nursing practice. Cognitive function assessments utilizing the Japanese versions of the Mini-Mental State Examination (MMSE) and Hasegawa Dementia Scale-Revised (HDS-R) are one example (Takenoshita et al., 2019). Other examples are the Hamilton Rating Scale for Depression (HAMD), the Positive and Negative Syndrome Scale (PANSS), the Brief Psychiatric Rating Scale (BPRS), and the Scale for the Assessment of Negative Symptoms (SANS) (Chen et al., 2022).

In addition to technology's pivotal role in enhancing psychiatric care, the unique structure of the protective/isolation room, which is specific to psychiatry, is integral to the patient care framework. This is complemented by the ability to monitor patients' conditions using digital video monitors (Varpula et al., 2022). The use of technology in healthcare, particularly in psychiatric nursing, hinges significantly on the knowledge and judgment of nurses (Cervellin et al., 2014). Technology–past, present, and future– is clearly an integral component of mental health care, including psychiatric nursing. Thus, nurses should be sensitive to the technology used in psychiatry. Technology is constantly evolving, and nurses must constantly think about how to use it effectively in care.

5) In-service education in Psychiatric Nursing

Serious international concerns have been noted regarding the quality of inpatient psychiatric care for people with acute mental illness. In-service education is needed to improve these services (Bee et al., 2005). However, it has been noted that in-service education programs are lacking (Lesinskiene et al., 2007). In-service education is a mechanism for current nurses to maintain and improve their clinical knowledge and skills (Marcogliese & Vandyk, 2019). In-service education plays an essential role in improving the quality of inpatient care. In-service education helps staff to update and improve their professional knowledge and skills and practice performing various tasks and responsibilities (Chaghari et al., 2017).

For example, a short-term in-service educational program was reported to improve nurses' knowledge, attitudes, and self-reported practice scores on the use of physical restraints, and other in-service educational programs on pain management also improved nurses' knowledge and attitudes on pain management (Germossa et al., 2018; Salim et al., 2019). Thus, appropriately structured in-service educational programs can improve knowledge and influence attitude change. They also provide an exciting avenue for enhancing the role of nurses in strengthening the person-centered healthcare system (Hoover et al., 2020).

The following are important educational goals for in-service education (Japanese Red Cross, n.d.) to improve the quality of nursing care: 1) To acquire the ability to practice nursing with respect for the individual and to promote independence; 2) To be able to act based on ethical judgment in medical and nursing situations; 3) To improve medical and nursing knowledge, skills, and attitudes in response to changing times; 4) To recognize one's own responsibilities and roles and improve the quality of nursing care; 5) To recognize one's own responsibilities and abilities and improve one's knowledge and skills as a professional; and 6) to recognize the importance of the individual's human rights and improve the quality of nursing care.

Nurse managers should see a close link between individual professional development and the quality of nursing services provided in the ward. Good administration is essential to create a learning environment and to capitalize on nurses' new competencies, and it requires a commitment to strategic planning of competencies at all decision-making levels within the organization (Tørstad & Bjørk, 2007).

Theoretical Framework

McCance's (2003) conceptual framework for caring in nursing focused on three major constructs adapted from Donabedian's (1980) structure, process, and outcome model.

Structures were categorized as nurse attributes (professional competence, interpersonal skills, commitment to the job, and personal characteristics), organizational issues (time, skill mix, and the nurse's role), and patient attributes.

Processes of care covered a wide range of nursing activities that constituted caring as perceived by patients and included providing for patients' physical needs; providing for patients' psychological needs (providing information, providing reassurance, showing concern, communicating); being attentive, getting to know the patient, taking time, being firm, showing respect, and the extra touch.

Outcomes emanating from the process of caring included a feeling of well-being (affective and physical), patient satisfaction, and the effect on the environment.

The use of humanistic caring frameworks in nursing practice enables the realization of person-centeredness. To improve the quality of psychiatric nursing services, it is important for nurse managers to examine the structure and improve the process of care to achieve better outcomes.

Thus, this study utilized the Fundamental Pattern of Knowing in Nursing (Carper, 1978), the Nursing as Caring theory (Boykin & Schoenhofer, 2001) as a grand theory, and TCCN theory (Locsin, 2005) as the middle-range theory. Within the theoretical lens of the TCCN, three key elements demonstrate the fundamental process of knowing persons within the universal technological domain: technological knowing, designing, and participative engaging. Thus, in this framework, the practice process of nursing (Locsin & Purnell, 2015) was used as the nursing practice method.

Table 1 shows the content of the in-service education programs conducted by educators. In each session, the theory content focused on the assumptions, concepts, nursing process, and practice elements demonstrated as expressions of caring grounded in the theory of TCCN. The content of in-service education was extracted from the TCCN theory (Japanese version) by the researcher, who has a deep understanding of Locsin's TCCN theory (Locsin, 2019).

The necessary items were extracted from Locsin's (2019) book (Japanese version). In addition, content was added based on the results of the integrative review regarding the areas necessary for psychiatric nursing, and in-service education was provided.

The benefit of this in-service program is that the persons in charge of translating and supervising the translation of the Japanese version of the TCCN theory give lectures directly. Thus, it is possible to inform participants about correct ways of thinking.

The in-service education program was organized as a one-and-a-half-hour-a-week lecture and discussion series over a five-week period. In each session, educational content is focused on the psychiatric nursing process as caring, based on the TCCN theory. To increase psychiatric nurse managers' knowledge of the theory of TCCN, the expected outcomes of the proposed in-service education program are as follows: 1) To understand the outline of TCCN theory and what it means to know the whole person of the nursing subject; 2) To be able to consider the practice of psychiatric nursing using technological competency as caring in nursing; 3) To understand the relationship between technology and caring in nursing; 4) To be able to understand what it means to express nursing as caring; and 5) To understand how to use the TCCN theory in psychiatric nursing.

Table 1. Syllabus on TCCN for nurse managers (Locsin, 2005; Locsin 2020 kindle version; and Locsin, Japanese translated version 2019) by educator lecture/presentation

Session number	Session Topic	Book Chapters*
1	Overview of the TCCN theory and knowing as persons (Understanding of the overall image of the nursing subjects)	Chapter 1: An Introduction to the Theory of Technological Competency as Caring in Nursing Chapter 2: Understanding Technological Competence through Philosophy and Nursing Chapter 3: Inside a Trojan Horse: Technology, Intentionality, and the Metaparadigms of Nursing
2	Discussion of psychiatric nursing practice using the theory of TCCN (What is a technology in psychiatric hospital?)	Chapter 8: Framework for Knowing Persons as Practice of Nursing
3	Understanding the relationship between technology and caring in nursing (What is an ethico-moral issue and risk dehumanizing patients in psychiatric hospital?)	Chapter 6: Technology of Caring: A Practical Application of Nursing Chapter 11: Technology and Genetics and Nursing
4	Expression of nursing as caring (Planning and achieving goals with patients to fulfill their dreams and hopes is a critical element of nursing care. In addition, it is critical to understand that through caring and assessment, the nurse promotes knowing the patient)	Chapter 7: A Model for Practice: Technological Competency as Caring in Nursing Chapter 12: Advancing the Theory of Technological Competency as Caring in Nursing: The Universal Technological Domain

5	Case studies of psychiatric nursing according to the TCCN theory and Carper's fundamental ways of knowing (Two associate nurse managers presented their case studies and shared their nursing process using TCCN and Carper's theory and patient profile. After the presentations, the three nurse managers, unit nurse managers, and researchers shared their opinions)	Chapter 10: Vignettes of Caring: Illustrating knowing as persons

Content of lectures developed for staff nurses based on the TCCN theory

Figure 2 illustrates an in-service nursing education program for nurse managers based on the theory of the TCCN: the structure, process, and expected outcomes.

The structure is in-service education for five weeks; the target participants are nurse managers. The process is to design an in-service nursing education program, incorporate the TCCN theoretical concepts, implement and evaluate the program among nurse managers, and evaluate the program and curriculum process.

The expected outcomes include increased nurses' perceptions and knowledge of the science of nursing, caring, and technology: integration of the TCCN theory into clinical practice; and improved and enhanced patient care based on the TCCN theory (2005). The following assumptions are explained.

The first assumption is "Persons are caring by virtue of their humanness" (Boykin & Schoenhofer, 2001). In nursing, caring is a substantive focus of the discipline. It is not simply the act or emotion one may portray toward another person but also the substance of the domain that directs the integral nature of nursing as a discipline of knowledge. Under this assumption, "persons are caring" is considered as fundamental to the practice of nursing.

The second assumption is "The ideal wholeness is a perspective of unity" (Locsin, 2005), which is derived from the idea that persons are known as wholes in ways shaped by philosophical truths and realities. The conceptualization of wholeness allows the recognition of human beings as complete in their being without reference to the composition of parts. This approach allows the nurse to focus on nursing as a shared lived experience between the nurse and the person being nursed (Boykin & Schoenhofer, 2001), rather than focusing on fixing the person or completing the person's lack or missing parts.

The third assumption is "Knowing is a multidimensional process" (Locsin, 2005), in which the nurse and nursed focus on appreciating, celebrating, supporting, and affirming each other while allowing for mutual recognition as dynamic participants in human caring.

Lastly, the fourth assumption is "Technologies of health and nursing are elements for caring" (Locsin, 2005), through which nurses in practice are able to know human beings more fully as persons who are active contributors in their care, rather than simply as objects of care. It is useful for nurses to understand the latest technology to better understand their patients. Evidence-based nursing practice using technology is important. Furthermore, learning from patients' experiences (sharing lived experience) is important for healthcare professionals, and sharing what they have learned enhances nurses' technological competency.

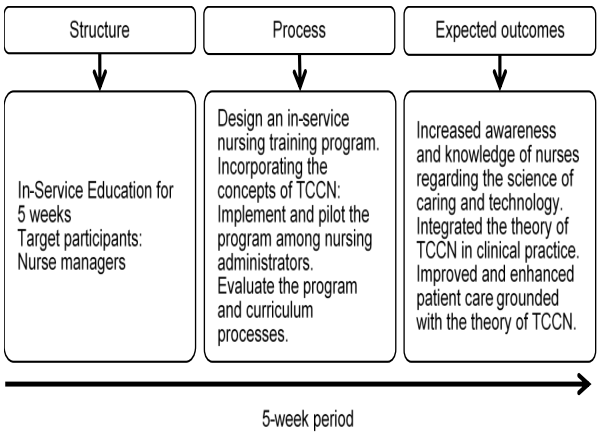

Figure 1. In-service Nursing Education Program for nurse managers based on the Theory of TCCN

Table 2 shows the content of the in-service education programs conducted by educators. In each session, the theory content has focused on the assumptions, concepts, nursing process, and practice elements demonstrated as expressions of caring grounded in the theory of TCCN. Researchers familiar with Locsin's theory extracted the necessary items from Locsin's (2019) book (Japanese version). Content was added on the basis of the results of the integrative review regarding the areas necessary for psychiatric nursing, and in-service education was provided.

Table 2. Syllabus on TCCN for staff nurses (Locsin, 2005; Locsin 2020 kindle version; and Locsin Japanese translated version 2019) by educators' lecture/presentation

Session Number	Session Topic	Book Chapters*
1	Overview of TCCN theory and knowing as persons (understanding of the overall image of the nursing subjects) What is caring? Nursing As Caring Caring in nursing Fundamental Patterns of Knowing in Nursing What is technology? What is psychiatric nursing? What is the nursing profession? (lecture)	Chapter 1: An Introduction to the Theory of Technological Competency as Caring in Nursing Chapter 7: A Model for Practice: Technological Competency as Caring in Nursing Chapter 12: Advancing the theory of Technological Competency as Caring in Nursing: The Universal Technological Domain
2	Discussion of psychiatric nursing practice using the TCCN theory through case studies of psychiatric nursing according to the TCCN theory and Carper's fundamental ways of knowing in the seminar	Chapter 8: Framework for knowing Persons as Practice of Nursing Chapter 10: Vignettes of Caring: Illustrating knowing as persons
3	Understanding the ethico-moral issue and risk of dehumanizing patients in psychiatric hospital Thinking about how to practice individualized nursing as a nurse in a psychiatric hospital in the future (seminar)	Chapter 12: Advancing the theory of Technological Competency as Caring in Nursing: The Universal Technological Domain

Figure 1 shows the in-service nursing education program for staff nurses based on the theory of TCCN: structure, process, and expected outcomes.

The structure is in-service education for 3 weeks; target participants are staff nurses. The process is to design an in-service nursing education program: Discussion of psychiatric nursing practice using the TCCN theory through case studies of psychiatric nursing according to the TCCN theory and Carper's (1978) fundamental ways of knowing in the seminars. The expected outcomes include increased nurses' perception and knowledge of the science of nursing, caring, and technology: integration of the TCCN theory into clinical practice; and improved and enhanced patient care based on the TCCN theory.

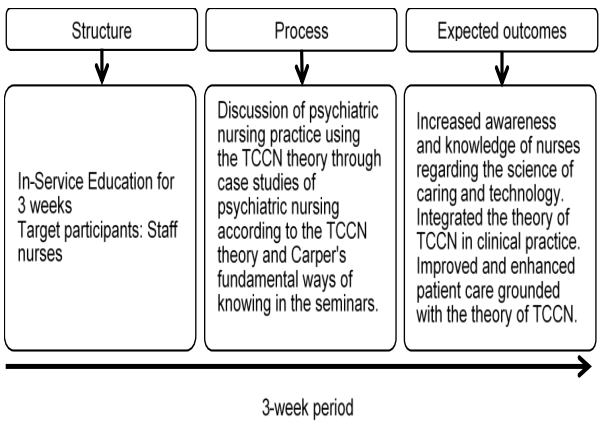

Figure 1. the in-service nursing education program for staff nurses based on the theory of TCCN

DISCUSSION

The TCCN theory focuses on technology, nursing, caring, and the process of nursing (Locsin, 2017). This theory has also been used and studied in general hospitals (Nakano et al., 2021), intensive care units (Locsin & Kongswan, 2013; Kato et al., 2017; Kongsuwan et al., 2018), and emergency departments (Kongsuwan et al., 2016) in nursing settings. Additionally, some TCCN theory-based instruments have been developed, and their reliability and variability have been confirmed (Miyamoto et al., 2017; Miyamoto et al., 2019; Ito et al., 2019; Yokotani et al., 2021a, 2021b; Krel et al., 2024). Therefore, in-service education based on this theory can be adapted to different nursing areas, and a measurement scale has been developed in English to measure its effectiveness; thus, it is likely to be applicable worldwide.

The findings of this study are limited because it was conducted only with nurse managers and staff nurses at a single psychiatric hospital. To generalize these findings, similar surveys should be conducted with a larger number of participants from multiple psychiatric hospitals in the future. In addition, the results may be influenced by cultural and social contexts when applied outside Japan.

In-service education programs for nurse managers and staff nurses have many forms and methods. In-service education for psychiatric nurse managers and staff nurses focuses on learning the theoretical basis of nursing from the TCCN theory. Psychiatric nurse managers are expected to model

nursing practice based on the TCCN theory to improve the quality of nursing care. In addition, psychiatric nurse managers are expected to act as experts in nursing practice by implementing the nursing process based on the TCCN theory, which includes "knowing the person as caring." However, there are few reports on their impact, particularly on professional outcomes. It is important to evaluate the effectiveness of such programs after implementation.

Applying theory in nursing practice develops nursing knowledge and supports evidence-based practice. Theoretical frameworks are essential for understanding decision-making processes and promoting quality patient care. Theory and practice inform each other, and nursing theories inform research that shapes policies and procedures. In this sense, it is important that nurse managers base their nursing management on nursing theory, and strategies for improving nursing services are decided based on the nurse manager's policy. Therefore, it is important for nurse managers to select an appropriate nursing theory from among the many available grand and middle-range theories and put it into practice. At the same time, there is the possibility of bias.

CONCLUSION

This hierarchical in-service educational program is expected to systematically increase competence in nursing skills as an expression of caring in nursing and ultimately improve the quality of psychiatric nursing care. The use of in-service education programs based on the TCCN is expected to become a practical approach to incorporating new technologies into quality psychiatric care.

It is recommended that this hierarchical in-service educational program be: 1) implemented with nurse managers and staff nurses in hospital psychiatric settings; 2) investigated through formal research procedures in a variety of hospital psychiatric settings; and 3) subjected to periodic program evaluation and subsequent improvement.

Conflict of Interest

The authors declare no conflict of interest.

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