

A comparison of Patient Care Skills and Clinical Decision Making among Registered Nurses in Bangkok Hospital Rayong

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Abstract

OBJECTIVES: This research compared patient care skills and clinical decision-making among registered nurses (RNs) who received the Nursing Supervision System.

MATERIALS AND METHODS: A cross-sectional study was conducted in a sample group consisting of 96 professional nurses working at Bangkok Hospital Rayong (BHR) with a 1-year work experience or more in inpatient work groups in 12 departments, and 16 heads/deputy heads of departments who are responsible for being supervisors in the nursing supervision system. The tools used to collect data were a patient care skills assessment and a satisfaction assessment using the nursing supervision system. Data were analyzed using descriptive statistics and ANOVA.

RESULTS: The results of the research found that the mean scores for patient care skills and clinical decision-making after using the nursing supervision system were significantly higher according to competency level, both overall and in each area, which were significantly different ($p < 0.05$). The level of satisfaction with the use of the nursing supervision system for those receiving supervision is at a high level (4.48). Satisfaction with the use of the nursing supervision system in terms of supervisors was at the highest level (4.77).

CONCLUSION: The nursing supervision system has an impact on the development of patient care skills and clinical decision making among RNs.

Keywords: nursing supervision system, patient care skills, clinical decision-making

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Nursing is the human act of caring for and assisting with illness, rehabilitating, preventing disease and promoting health. It includes collaboration with physicians to treat disease using the principles of science and the art of nursing.¹ The nature of nursing work is related to life, so there is an important mechanism which is the supervision of nursing practice or nursing supervision to ensure that those involved receive safe nursing practice. Thailand nursing and midwifery council has set core standards for nursing and midwifery services for agencies to use in creating specific standards leading to quality nursing services. The important and relevant standards for nursing (2019)² are Standard 3: Organization of work systems and processes for nursing and midwifery services, consisting of; midwifery services².

Section 3.1: Nursing and midwifery services must consider the quality and safety of service recipients. There are Nursing Policy & Procedures Nursing Standard of Patient Care under the law on the practice of nursing and midwifery as well as other related laws and the scope of nursing practice and midwifery.

Section 3.2: There is a professional nurse as the head of the nursing team to provide nursing and midwifery services throughout the service period.

Section 3.3: Assigning work to personnel with knowledge and skills below the professional level of nursing and midwifery.

Section 3.4: Sets policies and supports the use of the nursing process in nursing and midwifery practice.

Section 3.5: Has a mechanism to encourage nurses and midwives to practice their professions that meet standards and maintain professional ethics.

Section 3.6: Has an information system and use of nursing information in managing care and assistance to clients and developing the quality of nursing and midwifery.

From the aforementioned standards, nursing organizations must have a system of supervision, control, and a system for evaluating the performance of personnel as a mechanism and support for personnel to have knowledge and skills. This results in the creation of good results and has been used as a measure of success in nursing practice. It can be seen that nursing supervision is extremely important, and the Healthcare Quality Accreditation Institute has specified that hospitals that enter for accreditation must have an assessment of standards for supervising the nursing profession in part II Section II-2.2 as follows: The nursing management system has a structure and mechanism with important duties including supervision, supervising, and promotion of quality development and safety in patient care, promotion of clinical decision-making, and the use of appropriate technology, knowledge management and research to promote professional development in nursing practice which requires systematic monitoring and evaluation of nursing practice and continuous improvement.³

In addition, nurses are constantly faced with complex, difficult and demanding clinical problems. Clinical decision-making skills need to be developed and it is also a very necessary skill. The importance of clinical decision-making in nursing practice is that clinical decision-making is recognized as an essential skill for all health professionals and is an important skill for nursing practice. Nursing professionals with good clinical decision-making skills can produce good outcomes for patients. Meanwhile, nurses with low or no clinical decision-making skills are unable to assess the changing symptoms of patients, causing them to be unable to help them in a timely manner (rescue to failure to rescue).⁴

There are three important reasons for the lack of clinical decision-making skills. 1) failure to diagnose 2) failure to treat, and 3) failure to appropriately manage complications.⁵ Therefore, clinical decision-making is one of the most important skills of the nursing profession. When nurses can make evidence-based care decisions that follow best practice, there are many benefits such as: Patients have better outcomes, nurses have higher job satisfaction and hospitals have benefit from improving patient care metrics and reducing risk. Clinical decision-making in nursing is a proactive approach to evaluating patient symptoms and making care decisions using an evidence-based, collaborative approach with a team of health care providers co-determining best practices. Critical thinking skills, teamwork, communication, collaboration, and knowledge of practice guidelines are all essential parts of the clinical decision-making process.⁶ Nursing supervision has a

relevant role in promoting nurses' knowledge and skills in providing good patient care and improving clinical decision making.

The Nursing Staff Organization (NSO) of Bangkok Hospital Rayong (BHR) has a committed mission to providing nursing services in accordance with professional standards and ethics, for service recipients to be safe and satisfied. There is recruitment and development of nursing personnel to have the requisite knowledge, ability, and care for the well-being of nursing personnel. Promoting teamwork with interdisciplinary teams and continuously develop quality for the benefit of society and the community is critical. The focus of the nursing department's development is to develop the potential of the nursing personnel team towards becoming a Smart Nurse in caring for patients at the tertiary care level. The nursing department's focus is to develop effective patient assessments and reassessments to quickly assess problems, develop critical thinking in order to provide appropriate patient care and have good outcomes in the treatment process. Developing the care process to have a values based care approach, adjusting the work style to be multi-tasking and multi-skilled to effectively meet the changes in the present era is imperative. The main mechanism for developing nursing personnel is the use of nursing supervision systems. The NSO has been developing the nursing supervision system since 2015, and has adopted Proctor's concept of supervision, specifically Proctor's three-function interactive model or supervision alliance model, as a guideline for supervision practices.

This model delineates the roles of supervisors into three aspects:⁷

1. Formative Clinical Supervision aimed at promoting learning from practice.
2. Restorative Clinical Supervision aimed at professional support.
3. Normative Clinical Supervision aimed at ensuring adherence to standards.

These concepts have been adapted and tailored to the context of BHR. In nursing supervision, the outcomes are evaluated based on proficiency in patient care skills and adjusting the supervision model to make it easier to practice and measure. There is also an analysis of nursing supervision results linked to a Competency Nurse Level. A good supervision system is an important factor to help develop nurses' knowledge and skills in caring for patients, including good clinical decision-making skills that will help patients receive good and safe treatment results. Therefore, the research aims to improve the nursing supervision system and to help develop nurses' competency with knowledge and nursing practice skills. As a result, patients will have good treatment results that are safe and free of complications.

Materials and Methods

The research was a cross-sectional study, which examined the ease of use of the nursing supervision system in developing

patient care skills and clinical decision-making among RNs in BHR. The population consisted of RNs working at BHR. The participants were divided into two groups:

1. 96 RNs working at BHR with at least 1 year of experience in inpatient department in 12 departments, responsible for receiving supervision.
2. 16 heads/deputy heads of various departments responsible for nursing supervision.

Inclusion criteria:

1. RNs who had been working in the inpatient department for at least 1 year, and well-informed about the nursing supervision system.
2. RNs who had received 7 months of the nursing supervision system at BHR, from February to August 2023 (Buddhist Year 2566).

Data collection

1. The NSO had set a policy for developing nursing personnel by specifying the nursing supervision system as the main mechanism and process for developing nurses' patient care skills.
2. The Clinical Nurse Educator team had designed a nursing supervision system and tools that were used to assess patient care skills. Criteria based on research from the Advisory Board Company on Achieving Top of License Nursing Practice⁸ were applied to nursing practice in BRH by specifying 8 evaluation criteria. The tools were tested for content validity by 3 experts and reliability using Cronbach's alpha = 0.84.
3. The head and deputy head of each department in the inpatient ward conducted supervision during shift handovers in the morning. Additionally, there was a team of Clinical Nurse Educators participating in shift handovers to facilitate mutual learning in patient care.
4. The RNs receiving supervision were supervised and evaluated for their patient care skills from February to August, 2023.
5. The researchers distributed a patient care skills assessment form to the supervisors and a satisfaction questionnaire on the nursing supervision system to the supervisors and recipients of supervision. Afterward, the data was collected, compiled, and analyzed.

Human Subject Protection

The research project was approved by the Research Ethics Committee of BHR, number 002 /2566. The research project also received permission from the hospital director to conduct the research. The researcher explained to the sample group the purpose, methods, and procedures for participating in the research study. Then the voluntary participants signed informed consent before data collection.

Research tools

The tools used for data collection and aggregation were;

1. Personal information such as gender, age, education, experience, and Competency Level.
2. The patient care skills Evaluation form of patient care skill scores of 8 topics including; an observational type. Based on the framework from the Advisory Board Company on Achieving Top of License Nursing Practice,⁸ there were 8 evaluation criteria. These criteria were used to assess patient care skills by supervisors. The scoring system ranged from 1 to 5, with the following criteria:

Score of 5: Excellent nursing practice, accurate, complete, and exemplary.

Score of 4: Good nursing practice, accurate, and complete.

Score of 3: Fair nursing practice, accurate but incomplete.

Score of 2: Poor nursing practice, inaccurate, and incomplete.

Score of 1: Requires improvement in nursing practice. Afterwards, the scores were converted to percentages, both for each criterion and overall. The tools were tested for content validity by 3 experts, yielding a content validity index of 0.80, and reliability using Cronbach's alpha = 0.84.

3. A satisfaction questionnaire after using the nursing supervision system. The questionnaire is a 5-point Likert scale measuring satisfaction, comprising 7 items, with a reliability coefficient of 0.86. The interpretation of satisfaction scores is as follows:

Average Score 4.51 – 5.00: Indicates the highest level of satisfaction.

Average Score 3.51 – 4.50: Indicates a high level of satisfaction.

Average Score 2.51 – 3.50: Indicates a moderate level of satisfaction.

Average Score 1.51 – 2.50: Indicates a low level of satisfaction.

Average Score 1.00 – 1.50: Indicates the lowest level of satisfaction.

Data analysis and statistics

The researcher analyzed the obtained data using the SPSS program as follows:

1. General information and satisfaction, statistically analyzed with descriptive statistics, including frequency distribution, percentage, mean, and standard deviation.
2. The patient care skill score after using the nursing supervision system to analyze the mean and standard deviation, compare mean for each aspect and each competency level using ANOVA, setting a statistical significance level of less than 0.05.

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Results

The sample consisted of 96 professional nurses working in patient care. General information of the sample is shown in Table 1, and after using the nursing supervision system to evaluate results from patient care skills, it was found that overall patient care skills were at 91.3%, standard deviation 7.03. Data are shown in Table 2.

When comparing the mean patient care skills at each competency level, it was found that the highest mean was RN level 4 (94.28 ± 5.89) followed by level 3 (92.14 ± 8.07), level 2 (90.40 ± 5.39) and level 1 (86.55 ± 6.18) respectively, and when comparing the averages of patient care skills at each competency level, it was found that the averages were higher according to competency levels in all 8 topics and there were statistically significant differences ($p < 0.05$), data are shown in Table 3. Results of the study on satisfaction with using the nursing supervision system on patient care skills of professional nurses, divided into those receiving supervision and those being supervised, data are shown in Table 4.

Discussion

From the results of the research, it was found that the majority of professional nurses are female, with an average age of 30.9 years and an average work experience 5.33 years. Dividing the number according to Competency Level, the highest is RNs Level 4, followed by Level 1, Level 3, and Level 2, respectively. As for BHR, Level 4 nurses are nurses with more than 7 years of work experience, which according

Table 1: The number and percentage of professional nurses in inpatient units (n = 96).

Characteristics	n (%)
Gender	
Male	1 (1.0)
Female	95 (99.0)
Age (years)	
<25	14 (14.6)
≥ 25-35	63 (65.6)
> 35 - 45	18 (18.8)
> 45	1 (1.0)
Mean±SD	30.9 ± 5.44
Min-Max	24-46
Education level	
Bachelor's degree	96 (100)
Working years at Bangkok Hospital Rayong (years)	
< 5	49 (51.0)
≥ 5-10	38 (39.6)
>10-15	8 (8.3)
>15	1 (1.0)
Mean±SD	5.33 ± 3.83
Min-Max	1-17
Competency Level	
RNs Level 1	24 (13.6)
RNs Level 2	13 (7.3)
RNs Level 3	20 (11.3)
RNs Level 4	39 (22.0)

RNs= registered nurses

Table 2: The number and percentage of professional nurses in inpatient units (n = 96).

Characteristics	Average patient care skills (Mean ± SD)
1. Evaluate symptoms, problems, and needs of patients covering both physical and psychosocial aspects.	90.35 ± 7.91
2. Identify Specific Clinical Risk and set goals for patient care	90.45 ± 7.61
3. Use OPD reassessment/MEW, PEWS/Alert Alarm sign tools in reporting to doctors for Early Detection.	92.12 ± 7.23
4. Perform nursing activities and skills according to the priority of the problem correctly and completely according to standards.	91.82 ± 7.48
5. Monitor symptoms, changes, and re-evaluate appropriately in accordance with problems and nursing care.	91.20 ± 7.58
6. Important and relevant nursing and medical records are accurate and complete.	89.43 ± 8.07
7. Have skills and critical thinking processes and be able to clinical decision making to solve urgent problems correctly and appropriately.	92.21 ± 7.79
8. Quality of results and safety in patient care	93.41 ± 7.32
Average	91.37 ± 7.03

OPD=Out Patient Department ; MEWS= Modified Early Warning Signs Score

PEWS= Pediatric Early Warning Signs Score

Table 3: A comparison of the average patient care skill scores among 4 different competency levels after using the nursing supervision system (n = 96).

Evaluate topic	RNs level 1 (n = 24)	RNs level 2 (n = 13)	RNs level 3 (n = 20)	RNs level 4 (n = 39)	Mean	F	p
1. Evaluate symptoms, problems, and needs of patients covering both physical and psychosocial aspects.	86.84 ± 7.91	89.38 ± 6.76	91.25 ± 7.95	92.37 ± 7.75	90.35 ± 7.91	2.716	0.004*
2. Identify Specific Clinical Risk and set goals for patient care to track results.	85.88 ± 6.60	89.12 ± 5.80	91.16 ± 8.99	93.35 ± 6.70	90.45 ± 7.61	5.676	0.001*
3. Use OPD reassessment/MEW/EWS/Alert Alarm sign in reporting to doctors for Early Detection	87.55 ± 6.46	91.59 ± 5.79	92.39 ± 8.20	94.95 ± 6.30	92.12 ± 7.23	6.047	0.001*
4. Perform nursing activities and skills correctly according to the priority of the problem.	86.65 ± 6.95	90.59 ± 5.83	92.96 ± 7.86	94.83 ± 6.46	91.82 ± 7.48	6.047	0.001*
5. Follow up on changes/reevaluate appropriately according to the problem.	86.49 ± 6.61	90.45 ± 6.37	92.11 ± 8.23	93.88 ± 6.97	91.20 ± 7.58	5.536	0.002*
6. Nursing records and medical records are accurate and complete.	84.63 ± 6.18	88.67 ± 4.62	89.89 ± 10.05	92.39 ± 7.66	89.43 ± 8.07	5.252	0.002*
7. Have critical thinking skills and processes, and clinical decision making to correctly solve urgent problems.	85.75 ± 6.56	91.12 ± 6.09	93.19 ± 8.09	96.03 ± 6.24	92.21 ± 7.79	11.820	0.000*
8. Quality of results and safety in patient care.	88.56 ± 6.97	92.29 ± 5.34	94.14 ± 7.92	96.40 ± 6.29	93.41 ± 7.32	6.931	0.000*
Average	86.55 ± 6.18	90.40 ± 5.39	92.14 ± 8.07	94.28 ± 5.89	91.37 ± 7.03	7.381	0.000 *

* Statistically significant at $p < 0.05$.

OPD=Out Patient Department; MEWS= Modified Early Warning Signs Score ; PEWS= Pediatric Early Warning Signs Score

Table 4: Mean and Standard deviation of satisfaction among RNs of using the nursing supervision system

Satisfaction	Being supervised (n = 96)		Being supervisors (n = 16)	
1. Acquisition of knowledge in nursing	4.51 ± 0.58	Highest	4.81 ± 0.40	Highest
2. Promoting skills in nursing practice	4.48 ± 0.59	High	4.75 ± 0.44	Highest
3. Promoting critical thinking processes and good	4.48 ± 0.59	High	4.81 ± 0.40	Highest
4. Promoting and increasing perspectives in proactively identifying risks in patient care	4.43 ± 0.61	High	4.81 ± 0.40	Highest
5. Promoting a culture of continuous learning in patient care	4.52 ± 0.61	Highest	4.81 ± 0.40	Highest
6. Promoting encouragement in nursing practice	4.46 ± 0.64	High	4.87 ± 0.34	Highest
7. good relationship between the supervisor and the person being supervised.	4.51 ± 0.66	Highest	4.87 ± 0.34	Highest
Average	4.48 ± 0.53	High	4.77 ± 0.32	Highest

to Benner's Model⁹ is more than 5-10 years of work experience, these are classified at the expert level. The characteristics of a nurse at this level are: having a deep understanding of situations; being able to analyze situations that may occur, and; being able to analyze situations and make decisions to solve problems quickly and appropriately. The development of nurses during this work experience included: adding knowledge about each disease, adding to the development of knowledge, helping to increase the perspective to be comprehensive, and bringing out their potential to stand out and build self-esteem.

After using the nursing supervision system to evaluate the results of patient care skills, it was found that overall patient care skills were at 91.37%, which was considered to be at a good level. This is consistent with the research of Darunee Pangthit¹⁰ studying the effect of using the clinical supervision program on the development of knowledge and nursing practice skills. It was found that the assessment of knowledge by the test and assessment of nursing practice skills before and after the usability of the clinical supervision program were

significantly different at the 0.049 and 0.02 levels, respectively ($p < 0.05$). When considering each aspect, it was found that the highest average patient care skills were quality and results in patient care. Second is having skills and critical thinking processes and being able to make clinical decisions to solve urgent problems correctly and appropriately. Regarding the usability of Out Patient Department (OPD) reassessment / Modified Early Warning Signs Score (MEW), Pediatric Early Warning Signs Score (PEWS) / Alert Alarm sign tools in reporting doctors for Early Detection, there is a research report on clinical decision-making in Australia that found that nursing graduates have low clinical judgment skills. Furthermore, 65-75% of nursing graduates in the United States have clinical judgment scores in the "unsafe" range, lacking clinical judgment skills at all levels. This results in adverse patient outcomes, including clinical decision-making, which plays an important role in affecting the quality and safety of the lives of service users.¹¹ It also is consistent with the research of Snowdon¹² and colleagues who have studied the ways of using the clinical supervision system to be used to focus on solving problems and supporting nurses in working conditions

in the health care system that is characterized by constant work and to help solve incidents that have not been taken care of. The results found that clinical supervision promotes a better work environment, supports and reflects the value of patient care, encourages critical thinking, nurses are committed to improving standards of care, and promote the challenge of creating better standards of care. Therefore, it can be explained that the ease of use of the nursing supervision system results in good patient care skills among nurses, and are a result of nurses having a critical thinking process and making good clinical decisions, as well as using tools to quickly assess patients and report to physicians for early detection.

When comparing the average of patient care skills, both overall and in all 8 areas at each competency level, it was found that the highest average was Level 4 nurses, followed by Level 3, Level 2, and Level 1 nurses, respectively, with an average score of 94.28, 92.14, 90.40 and 86.55 respectively. The average of patient care skills at each competency level was found to have higher averages in all 8 competency levels and were significantly different ($p < 0.05$). It shows that an approach to nursing development using a nursing supervision system can develop nurses with better knowledge, skills, and clinical decision-making. This form of development is consistent with and in accordance with the framework of Benner's Model 9 and in line with the research of Onura Sareeporn and Somprathana Dapha¹³ who studied the development of nursing supervision models for emergency surgery nurses outside of office hours in the operating room nursing department of Srinakarin Hospital. The sample group consisted of 16 supervisory nurses and 16 supervisory nurses. The results of the study found that after using the developed emergency surgery nurses outside of office hours nursing supervision model, the nurses that had received supervision had an average competency score of 249.19 ± 31.65 which increased compared to the average competency score before supervision (217.94 ± 25.41) with statistical significance at 0.05, see and Thipawan's research Tangwongkit et al.¹⁴ There was a study of the effect of the participatory nursing supervision development program on the quality of supervision of head nurses, at the General Hospital, Chainat Province. The results of the research found that after the head nurse developed participatory nursing supervision, the average score in knowledge, attitude and the quality of work supervision was significantly higher than before the experiment, ($p < 0.05$) In addition, it was found to be consistent with the research of Uraiwan Juitail¹⁵ who studied the development of nursing supervision models for first-level administrators in Sukhothai Hospital with the 2P Safety principles. The results of the research found that the knowledge, competency, and satisfaction of first-level executives and those receiving supervision, after using the developed supervision model, was significantly higher than before using it at 0.05 ($p < 0.001$). The results of 2P Safety nursing care after using the developed model have a lower incidence of risks of level E or higher than before development. See also a study by Mohammadi et al.¹⁶ who studied the effect of clinical supervision on clinical thinking and decision-making by studying 60 nursing students, divided

into a control group of 30 people and an experimental group of 30 people. The results showed that the clinical supervision for nursing students. This method can be used to improve decision-making and the quality of nursing education programs.

In the evaluation of satisfaction with the use of the nursing supervision system on patient care skills of RNs, it was found that overall supervision recipients' satisfaction with the nursing supervision system was at a high level (4.48). As for the supervisors, it was found that overall satisfaction with the nursing supervision system was at the highest level (4.77). This is consistent with the research of Darunee Pangthit¹⁰ who studied the results of using the clinical supervision program on the development of knowledge and skills in nursing practice and satisfaction with the ease of use of the supervision program. It was found that satisfaction with the clinical supervision program was at the highest level (4.35).

Conclusion

It can be concluded that the nursing supervision system has an impact on the development of patient care skills and clinical decision-making. The mean scores for patient care skills and clinical decision-making after using the nursing supervision system were significantly higher according to competency level which were significantly different ($p < 0.05$). In addition, regarding satisfaction with the use of the nursing supervision system on patient care skills of RNs, it was found that overall supervision recipients' satisfaction with the nursing supervision system was at a high level.

Recommendations

Given the research results, nursing administrators should use the findings of this research to improve and develop the nursing supervision system even further, such as adjusting processes or learning styles in the supervision system to be appropriate for each level of supervision receiver which can be used to inform, to develop and to promote nurses at each competency level. This is especially the case in the development of senior nurses' level 3-4 as supervisors, to be able to transfer knowledge and skills.

The benefits of this research study for use in other hospitals in the Bangkok Dusit Medical Services network is to serve as a model for developing the potential of nursing personnel in private hospitals through designing the nursing supervision system to suit the hospital context and patient group by setting development guidelines that answer the problems encountered, and design supervision services to cover all dimensions of safety in the patient care process. The use of the nursing process is critical to make clinical decisions through critical thinking and management in supporting the nursing team to participate in the development of both the nursing supervisor and person being supervised. In addition, there is a presentation of systematic data collection and reporting of supervision results and the opportunity to evaluate results covering all

dimensions that need to be evaluated in order to see results, leading to continuous development to raise the level of nurses' ability to achieve the organization's mission, which can be applied to hospitals with similar contexts, and can be further applied to help develop our nursing personnel team to increase their potential and grow professionally in a sustainable manner.

For future research, it is recommended that competency monitoring research be undertaken, including using supervision system to develop professional relationships, as this will positively affect retention in the nursing profession.

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Acknowledgements

The researchers would like to express their sincere gratitude to the Bangkok Hospital Rayong Academic Center and Bangkok Health Research Center (BHRC) in providing useful advice and recommendations which contributed to the success of the research. In addition, the researchers would like to extend their sincere thanks to the executives of BHR for the opportunity and support to conduct this research and also to all those who provided assistance, support and encouragement in doing this research.