

The Relationship between Critical Thinking Skills and Caregiving Roles of Nurses

Abstract

Background: Critical thinking is a skill highly needed by nurses to solve problems effectively and make the best decisions in clinical environments.

Aim: The purpose of this study was to evaluate the relationship between critical thinking skills and the caregiving roles of nurses.

Methods: This descriptive study included 220 nurses working in a training and research hospital. The data were collected between February and March 2021 using an online questionnaire containing the "Nurse Information Form," "Nursing Critical Thinking in Clinical Practice Questionnaire," and "Attitude Scale for Nurses in Caregiving Roles (ASNCR)." The data were analyzed using percentages, means, standard deviation, Shapiro-Wilk, and Spearman's correlation tests.

Results: The nurses' mean age was 30.35 ± 7.25 years and they were mostly female (98.2%) and had bachelor's degree (69.1%), single (51.4%), and worked as nurses for 7.71 ± 7.54 mean years. The lowest mean score received by nurses from the Nursing Critical Thinking in Clinical Practice Questionnaire was (Mean=19.54, SD=4.02) in the technical dimension, and their lowest mean score was from the ASNCR was from the attitude towards nurses' roles in treatment process dimension (Mean=4.26, SD=0.76). A moderate, positive, and statistically significant ($P < 0.001$) correlation was found between the total scores and dimension scores of both scales.

Conclusions: This study found that caregiving roles and critical thinking levels of nurses were above the mean score. It is important to increase the awareness of nurses about critical thinking and decision-making skills in the professional education process. Nurse managers may take an active role in nurturing critical thinking skills for effective outcomes.

Keywords: Critical thinking, decision making, nursing care, problem solving, quality of care

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Introduction

Critical thinking is deemed an essential and significant element in achieving professionalism in the health-care field and represents an individual's ability to think about his/her own reasoning to maximize positive patient outcomes and minimize mistakes in decision-making.¹ Increasing demands along with rapid development in science and technology especially influence nurses, who are in direct contact with patients in the health-care sector, regarding making the right decisions.^{2,3} Critical thinking, which is of great importance in making rational decisions on patient care and practice, is considered to be a behavior that needs to be exhibited by professional nurses in all their roles and functions.⁴

While clinical decision-making in nursing explains the practice of nursing knowledge, the relationship between knowledge and decision-making is accepted as the most definitive element for the professionalization of nursing.⁵ Nurses can easily solve the complicated situations or contradictions, they face in the clinical field through critical thinking and consequently influence the outcomes of care.⁶ Critical thinking is considered a basic clinical skill since it promotes evidence-based professional practices in patient care.¹ Nurses fulfill the caregiving role, the basic role of the nursing profession, through patient-centered work and critical-thinking skills.⁷ The nursing process forms a basis for caregiving and is a method that finds solutions based on scientific approaches for problems or issues threatening an individual's health or life and allows for critical thinking to solve problems.^{8,9} Nurses make decisions using critical thinking skills through

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the steps of the nursing process and fulfill the caregiving role, the basic role of the nursing profession.⁷ However, many studies indicate that nurses have low¹⁰⁻¹² or moderate level¹³⁻¹⁵ of critical thinking skills.

Although critical thinking is very important in decision-making and the development of nurses' clinical competencies or caregiving roles, many studies have only examined the importance of critical thinking in nursing and its relationship with certain variables.^{1,2,10,16,17} Furthermore, many studies have emphasized a significant relationship between the tendency toward critical thinking, academic achievement, and problem-solving skills.^{4,6,18-20} There are no adequate studies on the effect of the tendency toward critical thinking on the caregiving roles in nurses. Evaluating the critical thinking skills and clinical competency of nurses can contribute to developing strategies for determining, developing and maintaining nurses' competencies in care practices.^{13,21}

Health-care professionals need to seek and question information and propose solutions to problems to be able to respond to individuals' health-care needs. Critical thinking helps nurses find a solution to the patient's condition or identify options in determining the preferable solution. Due to their critical thinking skills, nurses can set the priorities of care, provide the most appropriate care to individuals, and manage the professional judgment and decision-making process in care practices successfully and effectively. In the contrary, this may prevent nurses from making the right decisions on identifying, analyzing, and interpreting patients' problems as well as planning and implementing appropriate interventions, threatening patient safety and adversely affecting the quality of care and patient satisfaction. Therefore, nurses need to possess critical thinking skills to independently provide effective, quality, and safe care to patients. In conclusion, critical thinking ability is one of the basic competencies of clinical nurses. Nurses often use their critical thinking skills in the nursing process to solve patients' problems. However, what is the relationship between clinical nurses' critical thinking skills and nursing care roles? This is an important issue that few studies have discussed. This study can contribute to provide evidence-based data and to increase the awareness of nurses.

Aim

This study was conducted to evaluate the relationship between critical thinking skills and the caregiving roles of nurses.

Research Question

1. What are the critical thinking skills of nurses?
2. What are the attitudes of nurses regarding their caregiver roles?
3. Is there a relationship between the nurses' critical thinking skills and their caregiving roles?

Methods

Study Design, Setting, and Sample

This descriptive study was conducted in a training and research hospital affiliated to the Ministry of Health in Istanbul. The study population covered 236 nurses. The sample included 220 nurses (response rate: 93.2%) who met the study inclusion criteria. The inclusion criteria were nurses working in the hospital where the study was carried out between February and March 2021 and agreed to participate in the study. Nurses who did not agree to participate in the study were excluded from the study. It was attempted to reach the whole

population without sample selection. While the data of the nurses were being reviewed, six nurses' forms that had missing data were excluded and 10 nurses refused to participate in the study.

Data Collection Tools

Nurse information form was prepared by the researchers in line with the literature information²²⁻²⁴ and includes a total of 10 questions on nurses' ages, gender, marital status, education levels, wards, professional work durations, work types, and the number of patients to whom they provided care.

The Nursing Critical Thinking in Clinical Practice Questionnaire (N-CT-4 Practice) was developed by Zuriguel-Pérez et al²⁴ to evaluate critical thinking skills in nurses working in clinical practice. It was adapted to Turkish by Urhan and Seren in 2019.²³ This scale was structured as four dimensions and 109 items: (1) "Personal Dimension" (39 items), (2) "Intellectual and Cognitive Dimension" (44 items), (3) "Interpersonal and Self-Management Dimension" (20 items), and (4) "Technical Dimension" (six items). Responses to be given to the scale items are in 4-point Likert-type format, ranging from "strongly disagree" to "strongly agree," and scored between 1 and 4 from negative to positive responses. An increase in scores in the dimensions and overall scale is interpreted as an improvement in individual critical thinking skills. The lowest score to be received from the scale is 109, and the highest is 436. The average score to be obtained from the scale is 327. Cronbach's alpha coefficient, which shows the internal consistency of the Turkish version, was determined as 0.82-0.96 for the dimensions, and the internal consistency coefficient was found as 0.98 for the overall scale.¹⁷ In our study, Cronbach's alpha coefficient was 0.92-.96 for the dimensions and 0.99 for the overall scale.

The Attitude Scale for Nurses in Caregiving Roles (ASNCR) was developed by Koçak et al²² to measure nurses' levels of fulfilling their caregiving roles. The response options of the five-point Likert-type scale are "strongly disagree" (1 point), "disagree" (2 points), "partially agree" (3 points), "agree" (4 points), and "strongly agree" (5 points). The scale includes three dimensions and 16 items: (1) "Attitude toward Nursing Self-care Needs and Counseling Role Dimension" (seven items), (2) "Attitude toward Nurse's Role in Protecting Individual and Respecting Rights Dimension" (four items), and (3) "Attitude toward Nurse's Role in Treatment Process" (five items). In the scale assessment, the mean scores of responses given by nurses to the items are calculated, and the nurse's level of fulfilling the caregiving role is determined. Accordingly, as the score obtained from the scale increases, the level of fulfilling the caregiving role increases. As the score obtained from the scale decreases, the level of fulfilling the caregiving role decreases. Cronbach's alpha value was 0.75-0.85 for the scale dimensions and 0.91 for all items, and the scale was found to be highly reliable. In this study, the consistency coefficient was found as 0.92-0.96 for the dimensions and the internal consistency coefficient as 0.98 for the overall scale.

Data Collection

Due to the COVID-19 pandemic, the research data were collected using the online survey method. Active e-mail addresses of the nurses were requested from the nurse manager. Questionnaires were sent to nurses' e-mail addresses by the researchers. Only the nurses who approved participation were able to view the questionnaires. In the first section of the questionnaire, a statement about the purpose and

scope of the study was presented and explained that the completion of this form would take just 20–25 min. Nurses willing to participate in the study confirmed the informed consent form first and were then allowed to access the data collection tools.

Ethical Considerations

The ethics committee approval was obtained from by the Zeynep Kamil Women and Children Diseases Training and Research Hospital (Approval number: 202, Date: 23.12.2020). Before starting the study, permission was obtained from the hospital management where the study was conducted. All methods were carried out in accordance with the relevant guidelines and regulations of the Declaration of Helsinki. Written permissions were received from the relevant authors to use the scales in our study. In addition, informed consent was obtained from each participant in the study. At the beginning of the online survey, there is a statement that the data to be obtained from the surveys will be kept confidential. All nurses were first asked to read the explanation carefully, after which they provided consent for the study by ticking the “yes” box to indicate their willingness.

Data Analysis

Statistical analysis of the study was performed using the Statistical Package for the Social Sciences v.24.0 software package (SPSS-IBM Corporation, NY, USA). In data analysis, descriptive statistics (percentages, means, and standard deviations) were evaluated, and then the reliability of measurements in the sample was tested through Cronbach’s alpha internal consistency coefficient. The normality of the measurements was evaluated by the Shapiro–Wilk test, skewness and kurtosis values, and histogram graphics of the measurements. The N-CT-4 practice scores were found to be normally distributed, whereas their ASNCR scores were not normally distributed. Therefore, non-parametric Spearman’s correlation analysis was used for the correlation analysis of the scores belonging to both scales and their dimensions. Results were evaluated at 95% confidence intervals and a significance level of $P < 0.05$.

Results

Personal and Professional Characteristics of Nurses

According to the personal and professional characteristics of the nurses who participated in the study shown in Table 1, their mean age was 30.35 years (SD=7.25), they were mostly female (98.2%), single (51.4%), and had bachelor’s degrees (69.1%). Their mean work duration in the profession was 7.71 (SD=7.54) years, and their mean work duration in the unit was 2.73 (SD=3.29) years. They mostly worked in clinics (45.5%) and in shifts (75.5%), their weekly work durations were 46 h and above (45%), and they provided care to an average of five and more patients per day (78.2%).

Critical Thinking Skills and Their Attitudes for Caregiving Roles of the Nurses

Table 2 includes the means and standard deviations obtained from the scales. Nurses were found to receive 351.74 (SD=61.27) (Minimum: 111-Maksimum: 436) points from the N-CT-4 Practice. The critical thinking skill scores of the nurses were above the average score. When the mean total scores received by nurses from the dimensions of the N-CT-4 Practice were examined, they were found to receive the lowest mean score from the “Technical dimension” 19.54 (SD=4.02), and the highest from the “Intellectual and cognitive dimension” 142.98 (SD=25.75).

Table 1. Personal and professional characteristics of the nurses (n = 220)

Variables	n (%)
Age (years)	
Mean=30.35 SD=7.25	
Gender	
Female	216 (98.2)
Male	4 (1.8)
Marital status	
Married	107 (48.6)
Single	113 (51.4)
Education	
Vocational high school	15 (6.8)
Associate degree	19 (8.6)
Undergraduate (bachelor's degree)	152 (69.1)
Graduate (master of science and/or doctorate)	34 (15.5)
Professional experience time (years)	
Mean=7.71 SD=7.54	
Working time in the institution (years)	
Mean=2.73 SD=3.29	
Unit	
Emergency	38 (17.3)
Operating room	17 (7.7)
Intensive care unit	47 (21.3)
Services	100 (45.5)
Outpatient clinic	18 (8.2)
Working shift	
Only day time	51 (23.2)
Only night shift	3 (1.4)
Night and day in shifts	166 (75.5)
Weekly working time (hour)	
40 h	51 (23.2)
41-45 h	70 (31.8)
46 h and more	99 (45.0)
Average number of patients cared for per day	
1-2 patients	16 (7.3)
3-4 patients	32 (14.5)
5 patients and more	172 (78.2)

The nurses’ total ASNCR mean score was 4.31 (SD=0.75) (Minimum: 1-Maximum: 5) points. The attitude scores of the nurses regarding their caregiver roles were found above the average value. When the mean total scores received by nurses from the dimensions of the ASNCR

Table 2. Means of scales and sub-dimensions scores of nurses (n = 220)

Scales and sub-dimensions	Mean (SD)	Minimum	Maximum
Nursing Critical Thinking in Clinical Practice Questionnaire	351.74 (61.27)	111.00	436.00
▪ Personal dimension	124.71 (21.43)	41.00	156.00
▪ Intellectual and cognitive dimension	142.98 (25.75)	44.00	176.00
▪ Interpersonal and self-management dimension	64.52 (12.88)	20.00	80.00
▪ Technical dimension	19.54 (4.02)	6.00	24.00
Attitude Scale for Nurses in Caregiving Roles	4.31 (0.75)	1.00	5.00
▪ Attitude toward nursing self-care needs and counseling role dimension	4.31 (0.76)	1.00	5.00
▪ Attitude toward nurse's role in protecting individual and respecting rights dimension	4.35 (0.77)	1.00	5.00
▪ Attitude toward nurse's role in treatment process	4.26 (0.76)	1.00	5.00

SD: Standard deviation.

were reviewed, the lowest score was found to be received from the "attitude towards nurse's role in treatment process dimension" 4.26 (SD=0.76), and the highest from the "attitude toward nurse's role in protecting individual and respecting rights" 4.35 (SD=0.77).

The correlations of N-CT-4 practice and ASNCR scores are shown in Table 3. A moderate, positive, statistically significant correlation was determined between the scores obtained from the overall N-CT-4 Practice and its dimensions and the scores obtained from the ASNCR and its dimensions ($P < 0.001$, $r = .619-.718$).

Discussion

Critical thinking is an important professional competency for nurses. The lack of clinical competence in nurses leads to problems in providing nursing services.²¹ Nurses with good critical thinking ability can deliberate independently and carefully assess the importance of information throughout the entire nursing process. They are also able to provide proper nursing care, and strengthen decision-making skills to better identify patient needs and select nursing best practices.¹³ Critical thinking is of great importance for nurses, who must think of more than one option simultaneously most of the time and make a quick decision.²⁵ Moreover, increases in population age, cultural-social differences, chronic diseases, and the need for patient-oriented care and evidence-based performance as well as the decreases in financial resources, technological changes, and emphasis on home health and care development have made the health environments more complicated. In such environments, providing patients with safe and effective care based on standard criteria is only achievable through improving the critical thinking of nurses.²³ This study was carried out to evaluate the relationship between nurses' critical thinking skills and their caregiving roles.

Critical thinking is one of the basic competences of nurses and a skill highly needed by nurses to solve problems effectively and make the best decisions in clinical settings.^{13,15,26} Nurses can only achieve the desired outcomes using this skill and reasoning at the stage of decision-making.¹⁶ In the analysis results of our study, the mean total score received by nurses from the critical thinking scale was found to be above the average, indicating that nurses have a positive level of critical thinking skills. This positive result may allow nurses

to evaluate individuals' needs in depth and make the most appropriate decision. Moreover, it may also contribute to improving patient outcomes by enabling nurses to perform evidence-based practices. In the studies in the literature, nurses' critical thinking skills were reported to be at a low or moderate level, unlike our study.^{12,27,28} In their study, Nguyen and Liu²⁸ suggested that a strategy needs to be developed to improve nurses' critical thinking skills. It is stated that critical thinking is a basic factor for healthcare services, which focus on the quality of care and patient safety, and the quality of care can be improved with the use of critical thinking skills and in-service training to be provided. Unlike these studies, a study¹⁷ reported a good level of critical thinking skills for nurses and emphasized that nurses' critical thinking skills needed to be improved to provide safe and quality care to patients in health institutions in accordance with standards. In line with the data obtained, it can be concluded that nurses should be provided with support to maintain or advance their critical thinking skills. To this end, nurses should be specifically educated on this subject during professional education, directed to research, and enabled to develop different perspectives through case analyses and discussions. Thus, awareness that starts to be developed during student-ship can allow them to express more views, offer more suggestions and ideas, and develop solution proposals for existing or possible problems.

On reviewing nurses' mean scores in the dimensions within the scope of the study, it was found that they received the highest score from the intellectual and cognitive dimension. This result indicates that nurses can approach the problems faced in care practices more consciously, make effective decisions, and express their thoughts better, more clearly, and more accurately. In the study, the dimension with the lowest score was the technical dimension. It may therefore be required to support and improve nurses' critical thinking skills in subjects related to the use of information and communication technologies, scientific databases or drug administration practices (evaluation of therapeutic response, using the necessary devices). The results of many studies on nurses' critical thinking levels are similar to those of our study, reporting that the level of intellectual and cognitive critical thinking is higher than the level of technical critical thinking.^{15,17,28} Nurse managers should determine in which areas nurses' critical thinking skills are adequate and inadequate and help them to focus on the areas they

Table 3. Correlations of nursing critical thinking in clinical practice questionnaire and attitude scale for nurses in caregiving roles scores (n = 220)

	1. Personal	2. Intellectual and cognitive	3. Interpersonal and self-management	4. Technical	5. N-CT-4 Practice total score	6. Self-care needs and counselling role	7. Protecting individual and respecting rights	8. Treatment process	9. Attitude Scale for Nurses in Caregiving Roles total score
1. Personal	r 1.000								
	p								
2. Intellectual and cognitive	r .875*								
	p <0.001								
3. Interpersonal and self-management	r .865*	r .902*							
	p <0.001	p <0.001							
4. Technical	r .820*	r .843*	r .894*						
	p <0.001	p <0.001	p <0.001						
5. N-CT-4 Practice total score	r .947*	r .967*	r .951*	r .896**					
	p <0.001	p <0.001	p <0.001	p <0.001					
6. Self-care needs and counselling role	r .649*	r .641*	r .653*	r .666*	r .678*				
	p <0.001	p <0.001	p <0.001	p <0.001	p <0.001				
7. Protecting individual and respecting rights	r .619*	r .624*	r .624*	r .626*	r .653*	r .925*			
	p <0.001	p <0.001	p <0.001	p <0.001	p <0.001	p <0.001			
8. Treatment process	r .717*	r .660*	r .684*	r .697*	r .714*	r .863*	r .849*		
	p <0.001	p <0.001	p <0.001	p <0.001	p <0.001	p <0.001	p <0.001		
9. Attitude Scale for Nurses in Caregiving Roles total score	r .702*	r .671*	r .689*	r .699*	r .718*	r .958*	r .948*	r .951*	1.000
	p <0.001	p <0.001	p <0.001	p <0.001	p <0.001	p <0.001	p <0.001	p <0.001	p <0.001

*P < 0.001.

should improve. Furthermore, nurses should be given the opportunity to gain competency, receive the training they need, and have a say in the decisions to be made within the institution.

Nurses fulfill their caregiving roles independently. Caregiving is the most basic role that makes nursing a profession and constitutes the core of nursing.^{22,29,30} In this study, the scores received from the ASNCR in the overall scale and dimensions were above the average value. According to this result, it can be stated that nurses exhibited positive attitudes toward their caregiving roles and acted in line with individuals' needs. The study also demonstrated that nurses mostly exhibited positive attitudes toward the role in protecting individual and respecting rights. Nurses' attitudes toward their roles in the treatment process were found to be at the lowest level. This data suggested that nurses' care behaviors such as considering the feelings and thoughts of individuals that they provide care to, communicating with individuals openly, respecting privacy, and ensuring the security of the physical environment are good, and nurses need to be supported in subjects related to the treatment process such as pain management, control of symptoms, and palliative care. Consistent with our study, the study conducted by Tuna and Sahin²⁹ reported that nurses received the highest score from the dimension related to respecting individuals and the lowest score from the dimension related to their roles in the treatment process, and the mean score obtained from the scale was above the moderate value. In some studies, the self-care dimension received the highest score, whereas the dimension of respecting individuals received the lowest score. Scores obtained from both the overall scale and the dimensions in the previous studies indicate that nurses exhibit positive attitudes toward their caregiving roles.^{30,31} Nurses should fulfill their caregiving roles in a patient-specific manner and in compliance with a plan and evaluate the outcomes of the care and individuals' responses in line with this plan. Practices to be performed while fulfilling the caregiving role and the outcomes of these practices should be questioned continuously, and which might be best for the individual should be considered. Hence, the nursing process, which forms the basis of care practices, is a guide for providing individuals with effective and quality care by helping nurses use their critical thinking skills during the patient care process.

Critical thinking is one of the factors affecting the clinical competence and use of nurses, which is an important component of clinical decision-making and professional competence, and their use of cognitive skills and intellectual abilities.²¹ Critical thinking skills are also an important component of planning and implementing quality nursing care. For this reason, it is very important for nurses to have critical thinking skills to make fast and correct decisions in the constantly developing and changing health-care system. Besides, mistakes in nursing practices can be prevented using systematic and logical reasoning skills.^{32,33} It is important for critical thinking to be able to transform scientific knowledge into practice and apply it. In fact, critical thinking is a way to bridge the gap between theory and practice.³⁴

When nurses' critical thinking skills and attitudes toward their caregiving roles were reviewed in the present study, a positive correlation was observed between the scores of the overall scale and dimensions for both scales. Accordingly, as nurses' critical thinking skills increase, their attitudes toward their caregiving roles also increase positively. Similar studies have also shown that critical thinking ability had a significantly positive correlation with nursing competence

with increasing clinical thinking tendency being associated with better utilization of clinical competence among nurses.^{13,21} In a study by Bahador et al,³⁵ the use of critical thinking in the nursing process enabled nursing students to carry out nursing care with better quality.³⁵ Consequently, professional responsibility and quality patient care are based on critical thinking. It is important for nurses to improve their critical thinking skills so that they can be competent and effective in patient care.

Limitations

This study is limited to the nurses who worked in the hospital where the research was conducted and agreed to participate in the research. Another limitation of the study was due to collecting data by a self-report questionnaire, which may cause bias. To generalize the study results, it can be recommended to perform similar studies with larger samples in private or public hospitals.

Conclusion

In the study, the critical thinking skills and caregiving roles of nurses were above the mean score. Nurses' critical thinking skills related to technical applications and attitudes toward their roles in the treatment process were found to be at the lowest level. There was a positive relationship between nurses' critical thinking skills and their caregiving roles.

The developing technology and increasing knowledge output have made it necessary for nurses to be equipped with the necessary skills to provide safe care. Nurses are required to take fast and correct decisions in practice and make rational decisions, making it essential to adapt to new developments and changes. It is therefore crucial that nurses be informed and guided on how and where they can access evidence-based information. Thus, for nurses to gain more comprehensive knowledge, enrich their care experience, use technology, and support the patient, critical thinking skills should be gained during their education, and they should be encouraged to use these skills in clinical practice. Nurse educators and managers have a substantial responsibility in this regard. Moreover, greater efforts are required to implement educational strategies directed at developing critical thinking in students and professionals undergoing training. This study can serve as a reference for nursing education to improve nursing curricula and teaching strategies for nurse preparation. It can also be a guide for nursing administration staff in in-service training and orientation programs for nursing staff. Because clinical nurses must continue to learn to maintain their nursing competencies, ensure safe practice, and especially maintain their competency in critical thinking.

Ethics Committee Approval: The ethics committee approval was obtained from the Zeynep Kamil Women and Children Diseases Training and Research Hospital (Approval Number: 202, Date: 23.12.2020).

Informed Consent: Written informed consent was obtained from all nurses who participated in this study.

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