



ANALYSIS / RESEARCH

# The Effect of Critical Thinking Course in Nursing on Students' Critical Thinking Dispositions

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## Abstract

**Purpose:** The current study was conducted to determine the effect of the critical thinking course given to nursing students on their critical thinking dispositions.

**Method:** A one-group pre-test post-test quasi-experimental design was used in the study. A total of 58 students who studied at the Nursing Department of the Faculty of Health Sciences of a university in the fall term of the 2020-2021 academic year and selected the elective critical thinking in nursing course were included in the study group. Data were collected by using a student information form and the California Critical Thinking Disposition Inventory.

**Key Results:** Of the students in this study, 44 (75.9%) were female. Also, 37 (63.8%) of them stated that they chose the profession willingly, 41 (70.7%) were found to not participate in social activities, and 51 (87.9%) stated that they were a member of an association. The difference between students' pre-and post-test scores ( $220.36 \pm 24.72$  and  $311.74 \pm 32.06$ , respectively) taken from the critical thinking scale was found significant ( $p < .001$ ).

**Recommendations for Research and Practice:** It can be said that the critical thinking in nursing course affects students' critical thinking dispositions positively.

**Keywords:** Critical Thinking, Nursing Education, Nursing Students, Critical Thinking.

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## Öz

**Amaç:** Bu araştırma, hemşirelik öğrencilerinin aldıkları eleştirel düşünme dersinin eleştirel düşünme eğilimlerine etkisini belirlemek amacıyla yapılmıştır. Araştırma, ön- test son- test tek gruplu yarı deneysel olarak gerçekleştirilmiştir.

**Yöntem:** 2020-2021 eğitim-öğretim yılı güz döneminde bir üniversitenin Sağlık Bilimleri Fakültesi Hemşirelik Bölümünde öğrenim gören ve seçmeli derslerden hemşirelikte eleştirel düşünme dersini seçen 58 öğrenci araştırma grubuna dahil edilmiştir. Veriler, Öğrenci Bilgi Formu ve Kaliforniya Eleştirel Düşünme Eğilimleri Ölçeği kullanılarak toplanmıştır.

**Temel Sonuçlar:** Bu araştırmaya katılan öğrencilerin 44 (%75.9)'u kadındır. Öğrencilerin 37 (%63.8)'i mesleği isteyerek seçtiğini, 41 (%70.7)'i sosyal etkinliklere katılmadığını, 51 (%87.9)'i bir dernek üyeliği bulunduğunu ifade etmiştir. Eleştirel düşünme dersine yönelik yapılan ön-test son-test karşılaştırmada ölçek toplam puanı eğitim öncesi (220.36 ± 24.72) ve eğitim sonrası (311.74 ± 32.06) puan anlamlı bulunmuştur (p < .001).

**Araştırma ve Uygulama için Öneriler:** Hemşirelikte eleştirel düşünme dersinin öğrencilerinin eleştirel düşünme eğilimlerini olumlu yönde etkilediği söylenebilir.

**Anahtar Kelimeler:** Eleştirel Düşünme, Hemşirelik Eğitimi, Hemşirelik Öğrencileri, Eleştirel Düşünme Eğilimleri

## Introduction

Research on changes in the field of health, technological advances and maintenance and improvement in the well-being of individuals has increased in recent years. For healthcare professionals to keep up with these rapid and fundamental developments, comprehend contemporary knowledge as health practitioners and transfer it to care and treatment practices, they need to adopt the principle of lifelong learning and should be able to use their knowledge and skills for individuals, family and society (Carter et al., 2015; Karadağ et al., 2018; İskender and Karadağ, 2015).

Advances in medicine and biotechnology have allowed patients' diagnosis and treatment processes to be completed in a shorter time and have resulted in faster discharges. However, they have made the processes and clinical conditions of patients more complex. The complexity of services offered in different areas increases the need for nurses who can adapt to changing clinical conditions, respond to the problems and needs of patients, make quick and effective decisions and think critically (Ciftci et al., 2021; Kanbay and Okanlı, 2017; Dikmen Demir and Usta Yıldırım, 2013; Potter, 2009).

Critical thinking in healthcare professionals is a process where all the data about the patient/healthy individual are examined and, thereafter, needs are determined, questions are asked, data are collected, problems are defined, evaluations are performed and a conclusion is reached in light of these data (Oktay et al., 2019; Özdil et al., 2019). Critical thinking, which has been defined as a multidisciplinary form of education in nursing in recent years, has become an important skill that nurses should acquire to fulfill their professional roles and responsibilities (Sözen and Karabulut 2021). In 1992, the National League for Nursing in the US accepted the measurement of critical thinking skills as a criterion for the evaluation and international equivalence of undergraduate and graduate nursing education programs. The World Health Organization states that critical thinking is the gold standard in nursing education in schools. The International Council of Nurses (ICN) emphasizes that the nursing profession can only

be conducted through research-based practices (Çalışkan et al., 2020; Çelik et al., 2015). In addition, the ICN states that, because research education is important, nurses and students should be trained to apply, develop and critically evaluate research. Contrary to the understanding of rote education, health education in the new era aims to educate nurses who can criticize, question, research sources of information and access information. Critical thinking includes effective communication and problem-solving skills as indicators of success in education (Sözen et al., 2021; ICN, 2012).

The aim of research in nursing, which is an applied discipline, is to increase theoretical knowledge and prepare a strong scientific foundation for nursing practices (Özdil et al., 2019; Kanbay et al., 2017). Services and practices must be developed at the scientific level in the nursing field. To respond to scientific developments, it is necessary to apply basic research principles and play an active role in research. Nurses can adapt to scientific developments and seek reliable solutions to problems by taking an active role in the entire research process, from data collection to reporting, in a planned and systematic manner (İskender and Karadağ, 2015; Çelik et al., 2015; Wilde-Larsson et al., 2017). Critical thinking in nursing positively affects the quality of patient care and contributes to clinical decision making. In addition, critical thinking has a significant impact on professional development, improving nursing practices, protecting and promoting public health and improving quality of life, professionalism, autonomy and power (Ciftci et al. 2021, Alfaro-LeFevre 2013). However, in some studies, nurses have stated that they do not have time to conduct research and read research reports, are not authorized to put research findings into practice and do not have enough knowledge and experience to conduct research. Moreover, there is limited awareness about research resources, it increases the workload of the nurses, and nurse managers are not interested in designing and conducting research (Sözen and Karabulut, 2021; Kanbay et al., 2017; Azizi-Fini et al., 2015).

Critical thinking in nursing positively affects the quality of patient care and contributes to clinical decision making. In addition, it has a significant impact on professional development, improving nursing practices, protecting and improving public health and enhancing the quality of life, professionalism, autonomy and power (Carter et al., 2015; Oktay et al., 2019). Critical thinking disposition, which is one of the most discussed and important concepts in the field of nursing, should be developed throughout nursing education and learned by nursing students (Ciftci et al., 2021; Zhang and Chen, 2021). In light of this information, this study was conducted to determine the effect of the critical thinking course for nursing students on their critical thinking disposition. This study aims to examine the factors affecting critical thinking in nursing.

1. Hypothesis 0: Critical thinking courses do not affect nursing students' critical thinking disposition.
2. Hypothesis 1: Critical thinking courses affect nursing students' critical thinking disposition.

## Material and Methods

A one-group pre-test post-test quasi-experimental design was employed in the study. The research was conducted in the Nursing Department of the Faculty of Health Sciences at a university in Turkey. It was conducted between May and August 2021.

## **Study Population and Sample**

The population of the research consisted of nursing students (N = 60) who had taken the “Critical Thinking in Nursing” course in the spring term of the 2020-2021 academic year. We aimed to reach the entire universe; therefore, we did not apply any sampling procedures. A total of 58 students who volunteered to participate in the study and completed the pre-post test were included in the study, and the participation rate was 97%. Two students who took the pre-test but could not reach the post-test were not included in the study.

## **Variables of the Study**

The dependent variable of the study was the critical thinking dispositions of students taking the critical thinking in nursing course. The independent variables of the study included sociodemographic characteristics (gender, education level of mother and father, status of choosing the profession willingly, participation in social activities, academic achievement and average, membership to any association).

## **Data Collection Tools**

The study data were collected by using a Student Information Form (9 questions), which was designed by the researcher on the basis of the review of the relevant literature to collect socio-demographic data of the students, and the California Critical Thinking Disposition Inventory (CCTDI).

### ***The Student Information Form***

This form, which was designed by the researcher following a literature review to collect students’ socio-demographic data, consisted of 9 questions about age, gender, membership to an association, participation in social activities, the status of choosing the profession willingly, which is thought to affect students’ critical thinking dispositions, academic average and academic achievement and the education level of father and mother.

### ***The California Critical Thinking Disposition Inventory (CCTDI)***

The CCTDI was developed by Facione (1990) to evaluate students’ critical thinking levels, and its Turkish validity and reliability study was performed by Kökdemir (2003). The scale consists of 51 items in 6-point Likert type, and six sub-dimensions, namely, truth-seeking, open-mindedness, analyticity, systematicity, self-confidence and inquisitiveness (Facione 1990, Kökdemir 2003). A score of 240 or less on the scale indicates low critical thinking disposition, scores between 240 and 300 show a moderate level of critical thinking disposition, and scores greater than 300 show high critical thinking disposition. Cronbach’s alpha reliability coefficient of the CCTDI was calculated as .88 by both Celik et al. and Kökdemir (Çelik et al., 2015; Kökdemir, 2003). In this study, Cronbach’s alpha reliability coefficient was calculated as .89.

## **Data Collection**

In the first week of the “Critical Thinking in Nursing” course, which was conducted as an online course during the COVID-19 pandemic, the students were informed about the study before the course was initiated. The study link was given to those who volunteered to participate in the study, and they were expected to fill it out. The critical thinking in nursing course is an elective course and is carried out theoretically for 2 hours a week. A total of 7 subjects, including thinking, critical thinking, problem

solving, decision making, ethical decision making, setting priorities, nursing process, formed the content of the course (Figure 1). This course was planned to help nurse students grasp the importance of critical thinking in their social and professional lives, gain critical thinking skills, and be able to use them. First of all, theoretical explanations were provided in the curriculum, and then, through scenario studies/exercises prepared for each subject, the students were helped to develop skills specific to this field through exposure to situations requiring critical thinking. The research data were collected in the first week of the course before the lessons were initiated (pre-test) and after the 14-week education (post-test) at the end of the term.

The study data were collected online from the students within the scope of the COVID-19 pandemic rules of the Ministry of Health and the Higher Education Institution. The online questionnaire link (the Google form link) was sent to the students twice in the first and last week of the course on the online platform (Microsoft Teams).

**Figure 1. Critical Thinking in Nursing weekly course content**

Week	Course content
1	<b>Thinking</b> -Thinking process -Thinking skills -Thinking in nursing
2	<b>Exercise and scenario studies of the thinking unit</b>
3	<b>Critical Thinking</b> -Critical Thinking dimensions -Critical Thinking disposition and ability -Critical Thinking in nursing
4	<b>Exercise and scenario studies of the critical thinking unit</b>
5	<b>Problem solving</b> -Problem solving in nursing -Problem solving process in nursing
6	<b>Exercise and scenario studies of the solving unit</b>
7	<b>Decide</b> -Decision making in nursing -Decision making process in nursing
8	<b>Exercise and scenario studies of the decision making unit</b>
9	<b>Ethical Decision Making</b> -Ethical principles and codes in nursing -Ethical decision making process in nursing
10	<b>Exercise and scenario studies of the ethical decision making unit</b>
11	<b>Setting Priorities</b> -Setting priorities in nursing -The process of setting priorities in nursing -Time management

12	<b>Exercise and scenario studies of the ethical decision making unit</b>
13	<b>Nursing Process</b> -Nursing process steps
14	<b>Exercise and scenario studies of the nursing process unit</b>

## Data Analysis

The SPSS 25.0 software package was used to evaluate the data obtained from the study. In the analysis of the data, the independent sample t-test was used to examine the difference between categorical variables in two groups, and the dependent sample t-test was used for paired comparisons within the same group. In addition, Cronbach's alpha value was used to examine the reliability of the scale. The level of significance was determined as  $p \leq .05$ .

## Results

### Socio-demographic Characteristics of the Students

Of the students in the study, 44 (75.9%) were female, and their mean age was  $21.20 \pm 0.8$  years. The mothers of 30 (51.7%) students and the fathers of 29 (50.0%) were primary school graduates. It was determined that 37 (63.8%) of the students chose the profession willingly, 41 (70.7%) did not participate in social activities, and 51 (87.9%) were members of some associations. The academic achievement level of 37 (63.8%) students was middle, and their academic averages were similar (Table 1).

**Table 1. Sociodemographic Characteristics of Students (n= 58)**

Characteristic	Min-max	M±Sd
Age	20-24	21.20 ± 0.8
Characteristic	n	%
Gender		
Female	44	75.9
Male	14	24.1
Education of mother	n	%
Illiterate	9	15.5
Literate	1	1.7
Primary Education	30	51.7
High School	14	24.1
University	4	7.0
Education of father	n	%
Illiterate	3	5.2
Literate	1	1.7
Primary Education	29	50.0
High School	18	31.0
University	7	12.1

Characteristic	Min-max	M±Sd
Choose the profession willingly		
Yes	37	63.8
No	21	36.2
Attend in social events		
Yes	17	29.3
No	41	70.7
Association membership		
Yes	51	87.9
No	7	12.1
Academic success		
Good	21	36.2
Middle	37	63.8
Academic average		
2.01-3.00	29	50.0
3.01-4.00	29	50.0

### The Students' Scores from the California Critical Thinking Disposition Inventory

The examination of the nursing students' scores on the CCTDI indicated that their mean total score ( $220.36 \pm 24.72$ ), which was low before the education, was high after the education ( $311.74 \pm 32.06$ ), which showed a high level of critical thinking disposition. In addition, it was found that the difference between the students' pre-and post-education scores was statistically significant ( $t = -34.795$ ;  $p = 0.000$ ), (Table 2).

The mean scores obtained from the sub-dimensions of the scale were found as  $53.53 \pm 6.86$  before the education and  $54.17 \pm 7.57$  after the education for open-mindedness ( $t = -1.962$ ;  $p = .045$ ), and  $35.37 \pm 5.97$  before the education and  $36.94 \pm 6.73$  after the education for inquisitiveness. The difference between the mean scores taken from the sub-dimensions was found significant ( $t = -1.945$ ;  $p = .045$ ), (Table 2).

**Table 2. Comparison of the Students' Pre-Post CCTDI Mean Scores (n = 58)**

CCTDI scores and the subscale scores	Pre- test	Post- test	Test
	M±Sd	M±Sd	
Truth seeking	25.72 ± 5.10	25.79 ± 5.03	$t = -0.110$ $p = .913$
Open-mindedness	53.53 ± 6.86	54.17 ± 7.57	$t = -1.962$ $p = .045^*$

Analyticity	51.10 ± 5.22	52.46 ± 6.11	t = -1.861 p = .068
Systematicity	24.50 ± 4.26	24.36 ± 4.54	t = -0.774 p = .442
Self-confidence	29.68 ± 5.11	30.06 ± 6.59	t = -0.473 p = .638
Inquisitiveness	35.37 ± 5.97	36.94 ± 6.73	t = -1.945 p = .045*
Overall score	220.36 ± 24.72	311.74 ± 32.06	t = -34.795 p = .000**

\*p < .05, \*\*p < .001

### The Relationship between the California Critical Thinking Disposition Inventory and the Independent Variables

Data on the independent variables that are thought to affect the score taken from the CCTDI are presented.

In the analyses conducted before and after the education, it was found that gender ( $t = 2.719$ ;  $p = .009$ ), education level of mother ( $t = -1.933$ ;  $p = .028$ ) and father ( $t = 1.991$ ;  $p = .051$ ), and the status of choosing the profession willingly (*Pre-test*:  $t = 3.270$ ,  $p = .002$ ; *Post-test*:  $t = 3.548$ ,  $p = .001$ ) had an effect on students' critical thinking dispositions (Table 3).

The examination of the post-education critical thinking dispositions of the students by the "gender" variable indicated that the difference was due to the difference between the mean scores of the female ( $317.86 \pm 29.75$ ) and male students ( $292.50 \pm 32.44$ ). The analysis of the students' pre- and post-education mean scores on the critical disposition scale depending on their "status of choosing the profession willingly" indicated that the difference was significant for both those choosing willingly and those not choosing willingly. The analysis of the pre-education critical thinking levels of the students according to the "education level of mother" variable showed that the difference resulted from the difference between the mean scores of the students whose mothers had a primary school and below education ( $216.25 \pm 26.60$ ) and those whose mothers had high school and above education ( $229.50 \pm 17.25$ ). It was observed that the difference disappeared after the education. When the differences between post-education scores were analyzed according to the "father's education level", the difference was found to be due to the difference between the mean scores of the students whose fathers had primary school or below education ( $307.32 \pm 37.10$ ) and those whose fathers had high school or above education ( $315.09 \pm 27.77$ ) (Table 3).

**Table 3. Distribution of CCTDI Scores According to Some Characteristics of the Students (n= 58)**

Characteristics	Pre- test	Post- test
	M ± Sd	M ± Sd
Gender		
Female	222.65 ± 25.28	317.86 ± 29.75
Male	213.14 ± 22.16	292.50 ± 32.44
	t = 1.261 p = .213	t = 2.719 p = <b>.009*</b>
Choose the profession willingly		
Yes	227.75 ± 22.46	322.00 ± 29.67
No	207.33 ± 23.54	293.66 ± 28.40
	t = 3.270 p = <b>.002*</b>	t = 3.548 p = <b>.001**</b>
Education of mother		
Primary education and below	216.25 ± 26.60	308.45 ± 33.48
High school and above	229.50 ± 17.25	319.05 ± 28.16
	t = -1.933 p = <b>.028*</b>	t = -1.169 p = .247
Education of father		
Primary education and below	213.12 ± 27.89	307.32 ± 37.10
High school and above	225.84 ± 20.81	315.09 ± 27.77
	t = 0.913 p = .365	t = 1.991 p = <b>.045*</b>
Attend in social event		
Yes	212.29 ± 31.28	304.82 ± 35.19
No	223.70 ± 20.99	314.60 ± 30.66
	t = -1.623 p = .181	t = -1.059 p = .294
Academic success		
Good	218.00 ± 28.74	308.14 ± 36.86
Middle	221.70 ± 22.45	313.78 ± 29.34
	t = -0.545 p = .588	t = -0.641 p = .524

Academic average

2.01-3.00	215.17 ± 23.47	308.44 ± 29.04
3.01-4.00	225.55 ± 25.25	315.03 ± 35.01
	t = -1.621 p = .111	t = -0.780 p = .439

\*p < .05, \*\*p < .001

## Discussion

Making rational decisions in the provision of quality healthcare, presenting adequate, creative, and effective options for solving problems and maintaining professional development are made possible with critical thinking skills (Zhang et al., 2021). This study examined the effect of the critical thinking in nursing course on students' critical thinking disposition.

Critical thinking is a process that supports making the most appropriate diagnosis for healthy/sick individuals in the clinical decision-making process and reaching the best result, allows communication with other health disciplines, increases individual awareness of the nurse and contributes to the problem-solving process (Sözen et al., 2021; Çalıřkan et al., 2020; Zhang et al., 2021). Making fast and accurate decisions in application of the skills is of great importance in adapting to new developments and changes. In this direction, all national and international nursing institutions have drawn attention to the issue of having students acquire critical thinking skills in nursing education (Ciftci et al., 2021; Çelik et al., 2015).

In this study, it was determined that the "critical thinking in nursing" course increased students' critical thinking disposition and this increase was significant. It was determined that the mean pre-education score of the students from the total CCTDI (220.36 ± 24.72) was "low" and that the mean post-education score (311.74 ± 32.06) was "high". Recent studies on nursing students' critical thinking dispositions in Turkey have mostly been descriptive cross-sectional studies and found moderate or low critical thinking disposition scores (Karadağ et al., 2018, İskender and Karadağ, 2015; Ciftci et al., 2021; Oktay et al., 2019; Özdil et al., 2019; Sözen and Karabulut, 2021; Çalıřkan et al., 2020; Bingöl et al., 2012). In their study on the effect of critical thinking courses on critical thinking disposition of nursing students, Caliskan et al. (2020) found pre-education (220.52 ± 21.51) and post-education (224.55 ± 22.86) total CCTDI scores as low, with the difference between pre-test and post-test scores being insignificant. Similar to the findings of the current study, Kanbay and Okanlı (2017) found that the level of critical thinking increased after education, but that it was "moderate". In their study examining the critical thinking disposition of 46 nursing students during their four-year education, Kanbay et al. (2017) determined that the students' mean score from the total CCTDI was "moderate" and that there was no improvement in their critical thinking skills at the end of their four-year education. Kaya et al. (2017), in a longitudinal study, determined that the critical thinking levels of nursing students were "moderate" along an academic semester and that there was no difference between the measurements at the beginning and end of the semester. There have also been some international studies on this topic.

For example, Shin et al. (2006) conducted a study on associate and undergraduate nursing students studying in Korea and found that their critical thinking levels were low. In a study of nursing students in Scandinavia and Indonesia, Wilde-Larsson et al. (2017) found that Scandinavian students had a high level of critical thinking disposition. In the current study, it is pleasing that the critical thinking disposition of the students increased with the effect of the “critical thinking in nursing” course.

There is evidence in the literature that the teaching methods used in the nursing education process affect students' critical thinking disposition (Zhang and Chen, 2021; Twiari et al., 2006; Kanbay et al., 2013). In their study of first-year nursing students, Tiwari et al. (2006) found the critical thinking level of students in a class in which the problem-based learning approach was used to be moderate, whereas they found it to be low in a class where a classical education system was used. In their quasi-experimental study, Zhang and Chen (2021) found that the critical thinking disposition of the student group in which a project-based learning method was used in nursing interventions was higher than the group in which an individual practice was implemented. Studies on the subject have shown that contrary to the findings of the current study, the critical thinking levels of nursing students are not at the desired level (Twiari et al., 2006; Shin et al., 2006; Kaya et al., 2017; Kanbay et al., 2017; Sözen and Karabulut, 2021; Ciftci et al., 2021). It has been determined that different teaching methods used in critical thinking courses in nursing are effective in increasing students' critical thinking disposition.

In an era of rapid development in science, technology and medicine, it has become necessary to make rational decisions, especially in professions, such as nursing, which require fast, accurate and objective decisions. Nurses who have sufficient critical thinking skills are investigative, curious and open-minded and can work systematically to make the right decisions in patient care (Everett-Thomas et al., 2021; Lee et al., 2013). When the CCTDI sub-dimensions were examined, it was found that the open-mindedness sub-dimension had the highest mean pre- ( $53.53 \pm 6.86$ ) and post-test ( $54.17 \pm 7.57$ ) scores. In addition, the difference between the pre and post-test mean scores taken from the open-mindedness ( $t = -1.962$ ;  $p = .045$ ) and inquisitiveness ( $t = -1.945$ ;  $p = .045$ ) sub-dimensions was significant. The systematicity and truth-seeking sub-dimensions had the lowest scores and the difference between the pre- and post-test mean scores taken from these sub-dimensions was not significant. Similar to the research findings, Caliskan et al. (2020) found that the pre- and post-test mean scores taken from the open-mindedness sub-dimension were the highest and the pre- and post-test mean scores taken from the systematicity sub-dimension were the lowest. When similar studies on the subject were examined, it was determined that the open-mindedness scores were the highest and that the systematicity scores were the lowest compared to the other sub-dimension scores, which is consistent with the findings of the current study (Sözen and Karabulut, 2021; İskender and Karadağ, 2015). In the current study, it was found that the mean scores of nursing students in the analyticity, open-mindedness, self-confidence and inquisitiveness sub-dimensions of the CCTDI increased, whereas the systematicity sub-dimension score decreased. The difference between the pre- and post-test mean scores taken from the open-mindedness and inquisitiveness sub-dimensions was significant. Open-mindedness and inquisitiveness are characteristics that include being sensitive and objective to different opinions, approaches and

information and they are necessary skills for critical thinking. This result demonstrates the positive effect of critical thinking in nursing courses on students' critical thinking dispositions. When the relationship between some demographic variables of the students and the CCTDI was examined, the mean scores of the male students, whose parents had high school or above education and those of the students who voluntarily chose the nursing profession were found to be significantly higher. Similar to the results of this study, Caliskan et al. (2020) found that the pre-education CCTDI scores of students whose mothers had high school or above education were significantly higher. Contrary to our findings, Çelik et al. (2015) found in their study of nursing students that female students had higher critical thinking dispositions. In the current study, it was determined that there was a statistically significant difference between students' critical thinking dispositions depending on the education level of fathers and their choice of profession willingly or unwillingly. A review of the literature indicated that there were studies showing similarities and differences with our findings (Ciftci et al., 2021; Özdil et al., 2019; Sözen and Karabulut, 2021; Çalışkan et al., 2020; Çelik et al., 2015; Zhang and Chen, 2021; Kaya et al., 2017). As a result, it can be said that the "critical thinking in nursing" course eliminates the differences arising from individual characteristics of the students, and that critical thinking can be learned and developed.

### **Conclusion and Recommendations**

In this study, it was determined that the "critical thinking in nursing" course, which is included in the nursing undergraduate curriculum, positively affected the students' critical thinking dispositions. The spread of courses such as "critical thinking in nursing" at a national level, which help students acquire thinking, questioning and problem-solving skills, is very important. It may be practical to use the applications that will develop critical thinking in nursing students effectively in all the courses without limiting it only to the critical thinking course. In addition, it may be recommended to conduct qualitative research to determine the factors that prevent nursing students from acquiring, developing and using critical thinking skills.

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### **Ethics Committee Approval Information**

To collect the data, necessary permissions were obtained from the Health Sciences Scientific Research and Publication Ethics Committee of a University in Turkey (IRB: 2021/07-09) and the university where the research would be conducted (16.06.2021). The aim of this study was stated and participation was conditioned on a voluntary basis on the questionnaire form shared on the online platform (Microsoft Teams) via the Google forms link. Individuals who confirmed that they agreed to participate in the research were able to access the questions via the next tab of the questionnaire. The research was

conducted in accordance with the principles of the Declaration of Helsinki. Necessary permissions were obtained from the authors for the scale used in the study. Students in the study were informed that participation in the study would not affect their scores from the course they took. They were also informed that they could leave the study whenever they wanted and that their data would be kept confidential.

**Limitation**

Since this study was conducted with nursing students at a single university in Turkey, the study data cannot be generalized. The lack of a control group in this study is a limitation of the study. Although the positive effect of the course was seen in our study, it is recommended to conduct randomized controlled studies.



GENİŞLETİLMİŞ ÖZET

İNCELEME/ARAŞTIRMA

# Hemşirelikte Eleştirel Düşünme Dersinin Öğrencilerinin Eleştirel Düşünme Eğilimlerine Etkisi

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## Giriş

Tıp ve biyoteknoloji alanında yaşanan gelişmeler hastaların tanı, tedavi süreçlerinin daha kısa sürede sonuçlanmasına, daha hızlı taburcu olmalarını sağlamaktadır. Bunun yanında hastaya ait süreçlerin ve klinik koşulların daha karmaşıklaşmasına sebep olmuştur. Farklı alanlarda sunulan hizmetin karmaşıklığı, değişen klinik koşullara uyum sağlayabilen, hastaların yaşadıkları problemlere ve ihtiyaçlarına karşılık verebilen, hızlı etkili kararlar alabilen ve eleştirel düşünebilen hemşire ihtiyacını arttırmaktadır.

Uygulamalı bir disiplin olan hemşirelikte araştırmacının amacı, teorik bilgiyi artırırken beraberinde hemşirelik uygulamaları için güçlü bir bilimsel zemin hazırlamaktır. Hemşireliğin, hizmet ve uygulamaları bilimsel düzeyde sürekli geliştirmeleri gerekmektedir. Bilimsel gelişmelere yanıt verebilmek için araştırmacının temel ilkelerine başvurulması ve etkin bir şekilde araştırmalarda rol alınması gerekmektedir. Hemşireler planlı ve sistemli olarak verilerin toplanmasından rapor edilmesine kadar araştırma sürecinin tamamında etkin rol alarak bilimsel gelişmelere uyum sağlayabilmekte ve problemlere güvenilir çözümler arayabilmektedirler. Hemşirelikte eleştirel düşünme hasta bakımının kalitesini etkilemekte, klinik karar vermede yardımcı olmaktadır.

## Kavramsal Çerçeve

Sağlık profesyonelleri için eleştirel düşünme; hasta/sağlıklı bireye ait ulaşılan tüm bilgiler incelendikten sonra, bu veriler ışığında gereksinimlerin belirlenmesi, soru sorma, veri toplama, sorunları tanımlama, değerlendirme ve sonuca ulaştırmayı amaçlayan bir düşünme sürecidir. Son yıllarda hemşirelik eğitiminde multidisipliner bir eğitim şekli olarak tanımlanan eleştirel düşünme, hemşirelerin mesleki olarak üstlendikleri rol ve sorumlulukları yerine getirebilmesi için edinmesi gereken önemli yeteneklerden biri olmuştur.

Hemşirelikte eleştirel düşünme hasta bakımının kalitesini etkilemekte, klinik karar vermede yardımcı olmaktadır. Ayrıca eleştirel düşünme mesleki gelişim, hemşirelik uygulamalarının geliştirilmesi, halk sağlığını koruma ve geliştirme, yaşam kalitesini artırma, meslekte profesyonellik, otonomi ve güç sahibi olma üzerinde de önemli

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etkiye sahiptir. Ancak, yapılan çalışmalarda, hemşireler araştırma yapmak ve okumak için zamanları olmadığını, araştırma bulgularını uygulamaya koymaya yetkili olmadıklarını, araştırma ile ilgili yeterli bilgi ve tecrübeye sahip olmadıklarını, araştırma kaynakları konusunda sınırlı bir farkındalık olduğunu, araştırmanın iş yükünü artırdığı ve hemşire yöneticilerinin araştırma tasarımı ve yürütmesi ile ilgilenmediğini belirtmişlerdir.

### Veri Toplama ve Örneklem

Bu araştırma, ön- test son- test tek gruplu yarı deneysel olarak, hemşirelikte eleştirel düşünme dersinin öğrencilerin eleştirel düşünme eğilimlerine etkisini belirlemek amacıyla yapılmıştır. Araştırma, 2020-2021 eğitim-öğretim yılı güz döneminde bir üniversitenin Sağlık Bilimleri Fakültesi Hemşirelik Bölümünde öğrenim gören ve seçmeli derslerden hemşirelikte eleştirel düşünme dersini seçen 58 öğrenci araştırma grubuna dahil edilmiştir. Veriler, Öğrenci Bilgi Formu ve Kaliforniya Eleştirel Düşünme Eğilimleri Ölçeği kullanılarak toplanmıştır.

### Bulgular

Araştırmaya katılan öğrencilerin 44 (%75.9)'ünün kadın ve yaş ortalamalarının 21.20±0.8 yıl olduğu belirlenmiştir. Öğrencilerin 30 (%51.7)'unun annesi, 29 (%50.0)'unun ise babası ilköğretim mezunudur. Öğrencilerin 37 (%63.8)'sinin mesleği isteyerek seçtiği, 41 (%70.7)'inin sosyal etkinliklere katılmadığı ve 51 (%87.9)'inin dernek üyeliği bulunduğu belirlenmiştir. Öğrencilerin 37 (%63.8)'sinin akademik başarılarının orta düzeyde ve akademik ortalamalarının yüzdelerinin benzer olduğu saptanmıştır.

Hemşirelik öğrencilerinin KEDE Ölçeği'nden aldıkları puanlar incelendiğinde, eğitim öncesi toplam puan (220.36±24.72), eğitim sonrası toplam puan ise (311.74±32.06) olup eğitim öncesi düşük düzeyde olan eleştirel düşünme eğiliminin eğitim sonrası yüksek düzeyde olduğu belirlenmiştir. Ayrıca öğrencilerin eğitim öncesi ve sonrası puan farklarının istatistiksel olarak ileri düzeyde anlamlı olduğu bulunmuştur (p <.001).

Araştırmada eğitim öncesi ve sonrasında yapılan analizlerde cinsiyet (p <.001), anne (p <.05) ve baba eğitim düzeyi (p <.05) ve mesleği isteyerek seçme durumunun (p <.001) öğrencilerin eleştirel düşünme eğilimleri üzerinde etkili olduğu bulunmuştur.

### Sonuç ve Değerlendirme

Bu çalışmada hemşirelik lisans müfredatında yer alan hemşirelikte eleştirel düşünme dersinin öğrencilerin eleştirel düşünme eğilimlerini olumlu yönde etkilediği saptanmıştır. Hemşirelikte eleştirel düşünme dersi gibi öğrenciyi düşünmeye, sorgulamaya, problem çözme becerileri kazandırmaya yönelik derslerin ulusal düzeyde yaygınlaşması mezuniyet öncesi çok önem taşımaktadır. Hemşirelikte eleştirel düşünmeyi geliştirecek uygulamaların, sadece eleştirel düşünme dersi ile sınırlandırılmadan tüm eğitim içeriğinde etkili şekilde kullanılması faydalı olabilir. Ayrıca hemşirelik öğrencilerin eleştirel düşünme becerisini kazanmalarını, geliştirmelerini ve kullanmalarını engelleyen etkenlerin belirlenmesine yönelik nitel araştırmaların da yapılması önerilebilir.

### Kaynakça/References

- Alfaro-LeFevre, R. (2013). Critical thinking, clinical reasoning, and clinical judgment: A practical approach. 5th ed. St. Louis, MO, USA: Saunders/Elsevier.
- Azizi-Fini, I., Hajibagheri, A., & Adib-Hajbaghery, M. (2015). Critical thinking skills in Nursing Students: A comparison between freshmen and senior students. *Nursing and Midwifery Studies*, 4(1), e25721.
- Bingöl, G., Görgen, Ö., & Özdelikara, A. (2012). Hemşirelik öğrencilerinin eleştirel düşünme eğilimleri ve bunu etkileyen faktörler. *Florence Nightingale Journal of Nursing*, 20(3), 219-226
- Carter, A. G., Creedy, D. K., & Sidebotham, M. (2015). Evaluation of tools used to measure critical thinking development in nursing and midwifery undergraduate students: A systematic review. *Nurse Education Today*, 35(7), 864-874.

- Çalışkan, N., Karadağ, M., Durmuş İskender, M., Aydoğan, S., & Gündüz, C. S. (2020). Eleştirel düşünme dersinin Hemşirelik öğrencilerinin eleştirel düşünme eğilimleri ve eleştirel düşünme motivasyonlarına etkisi. *Türkiye Klinikleri Journal of Nursing Sciences*, 12(4), 544-551.
- Çelik, S., Yılmaz, F., Karataş, F., Betül, A. L., & Karakaş, N. S. (2015). Hemşirelik öğrencilerinin eleştirel düşünme eğilimleri ve etkileyen faktörler. *Sağlık Bilimleri ve Meslekleri Dergisi*, 2(1), 74-85.
- Çiftçi, B., Oktay, A. A., Erden, Y., & Kaşıkçı, M. (2021). Comparison of critical thinking levels of nursing students at two universities and the influencing factors. *International Journal of Caring Sciences*, 14(1), 664.
- Dikmen Demir, Y., & Usta Yıldırım, Y. (2013). Hemşirelikte eleştirel düşünme. *Süleyman Demirel Üniversitesi Sağlık Bilimleri Dergisi*, 4(1), 31-38.
- Everett-Thomas, R., Joseph, L., & Trujillo, G. (2021). Using virtual simulation and electronic health records to assess student nurses' documentation and critical thinking skills. *Nurse Education Today*, 99, 104770.
- Facione, P. (1900). *California critical thinking skills test-- college level. Technical report 1. Experimental validation and content validity*. Millbrae: California Academic Press.
- International Council of Nurses (ICN). (2012). International nurses' day kit, closing the gap: From evidence to action. Access Address: <https://www.nursingworld.org/~4aff6a/globalassets/practiceandpolicy/innovation--evidence/ind-kit-2012-for-nnas.pdf>, Access Date: 23 Eylül 2021.
- İskender Durmuş, M., & Karadağ, A. (2015). hemşirelik son sınıf öğrencilerinin eleştirel düşünme düzeylerinin belirlenmesi. *Dokuz Eylül Üniversitesi Hemşirelik Fakültesi Elektronik Dergisi*, 8(1), 3-11.
- Kanbay, Y., & Okanlı, A. (2017). The effect of critical thinking education on nursing students' problem solving skills. *Contemporay Nurse*, 53(3), 313-321.
- Kanbay, Y., Aslan, Ö., Işık, E., & Kılıç, N. (2013). Hemşirelik lisans öğrencilerinin problem çözme ve eleştirel düşünme becerileri. *Yükseköğretim ve Bilim Dergisi*, (3), 244-251.
- Kanbay, Y., Işık, E., Aslan, Ö., Tektaş, P., & Kılıç, N. (2017). Critical thinking skill and academic achievement development in nursing students: four-year longitudinal study. *American Journal of Educational Research and Reviews*, 2(1), 12.
- Karadağ, M., Alparlan, Ö., & İşeri, Ö.P. (2018). Ebelik ve Hemşirelik öğrencilerinin eleştirel düşünme eğilimleri ve öğrenme stilleri. *Cukurova Medical Journal*, 43(1), 13-21.
- Kaya, H., Şenyuva, E., & Bodur, G. (2017). Developing critical thinking disposition and emotional intelligence of nursing students: A longitudinal research. *Nurse Education Today*, 48, 72-77.
- Kökdemir, D. (2013). *Belirsizlik durumlarında karar verme ve problem çözme* [Yayınlanmamış doktora tezi]. Ankara Üniversitesi.
- Lee, W., Chiang, C.H., Liao, I.C., Lee, M.L., Chen, S.L., & Liang, T. (2013). The longitudinal effect of concept map teaching on critical thinking of nursing students. *Nurse Education Today*, 33(10), 1219-1223.
- Oktay, A.A., Taş, F., Doğaner, A., Gülpak, M., & Avnioğlu, S. (2019). Sağlık Yüksekokulu öğrencilerinin eleştirel düşünme eğilimleri. *Cukurova Medical Journal*, 44(1), 33-43.
- Özdiş, K., Özcan, A., Muz, G., & Turaç, N. (2019). Hemşirelik öğrencilerinin araştırma ve gelişmelere karşı farkındalık tutumları ve eleştirel düşünme becerileri. *Türkiye Klinikleri Journal of Nursing Sciences*, 11(2), 109-119.
- Potter, P.A. (2009). Critical Thinking in Nursing Practice. In Potter PA, Perry AG. (Ed), *Fundamentals of Nursing* (7th ed. pp. 215-230). St.Louis: Mosby incorporation.
- Shin, K. R., Lee, J. H., Ha, J. Y., & Kim, K. H. (2006). Critical thinking dispositions in Baccalaureate Nursing students. *Journal of Advanced Nursing*, 56(2), 182-189.
- Sözen, K. K., & Karabulut, N. (2021). Determining the relation between critical thinking tendencies and clinical decision-making skills of Nursing students. *Adıyaman Üniversitesi Sağlık Bilimleri Dergisi*, 7(1), 71-79.
- Twiari A, Lai P, So M, Yeun KA. (2006). Comparison of the effects of problem-based learning and lecturing on the development of students critical thinking. *Medical Education*, 40(6), 547-554.
- Wilde-Larsson, B., Aiyub, I., Hermansyah, H., Hov, R., Høye, S., Valen Gillund, M., Kiwing, K., Suwarni, A., & Nordström, G. (2018). Critical thinking, research utilization and barriers to this among Nursing students in Scandinavia and Indonesia. *Nordic Journal of Nursing Research*, 38(1), 28-37.
- Zhang, J., & Chen, B. (2021). The Effect of cooperative learning on critical thinking of Nursing students in clinical practicum: A quasi-experimental study. *Journal of Professional Nursing*, 37(1), 177-183.