## **Original Article**

# **Critical Thinking and Caring in Nursing Students**

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#### **Abstract**

**Background:** The literature shows us the nursing students can improve this ability in undergraduate clinical education and they should learn how to think critically for giving better care.

Objective: This study identifies the relationship between disposition toward critical thinking and caring behaviour of nursing students.

**Methodology:** This cross-sectional study used a convenience sample that comprised 167 undergraduate nursing students enrolled in a four-year nursing course in Eastern Turkey. The data was obtained through a sociodemographic characteristics form, the Caring Nurse–Patient Interaction Scale (CNPI-Long Scale) and the California Critical Thinking Disposition Inventory (CCTDI).

**Results:** We determined that there was a positive relationship between overall critical thinking dispositions and caring behaviours (r = 0.470, p < 0.01). The simple linear regression analysis result was analysed and it was observed that 22% of the Caring Nurse Patient Interactions were predicted by critical thinking disposition ( $R^2 = 0.221$ , p < 0.01).

**Conclusions:** The findings indicate that caring behaviours relate to critical thinking disposition. We suggest critical thinking which promote the development of the intellectual capacities of student nurses as independent critical thinkers so that critical thinking should be in all nursing curriculum. Therefore, quality client care will be better

**Keywords:** Critical Thinking Disposition, Caring Behaviour, Nursing Students

## Introduction

Critical thinking skills are now an expected outcome of nursing education programmes. The American Association of Colleges of Nursing (1998), the National League for Nursing (1992), and the National League for Nursing Accrediting Commission (2002) identified critical thinking as an essential component of baccalaureate nursing education. Schools of nursing are required to produce outcome assessments of students' competence in critical thinking as accreditation criteria. As nursing is a practice profession, it is

important for the faculty to know the cognitive process characteristics of expert nurses, lead by example and impart critical thinking in clinical settings. The current healthcare environment reflects societal patterns of constant change and complexity. The rapid growth of knowledge and technology related to health and illness requires nurses who are able to solve problems and make crucial decisions in clinical situations. Nurse educators must address the challenge of preparing nurses who can think critically (Twibell et al., 2005).

## **Background**

Nursing is an aid-oriented profession and its main role is caring. Nursing is a profession that requires complex behavioural practices. The responsibilities of practitioners include physical, psychological, mental and spiritual care for a variety of clients. A nurse affects the patient and is affected them through positive communication and planned nursing initiatives (Tutuk et al., 2002; Ozcan, 2006).

advocated Watson (2005)patient-nurse interaction-based nursing care, and developed Caring Theory from a humanistic and holistic point of view. It is essential to improve knowledge regarding caring, which is the basis for nursing (Watson, 1990; Ozer et al., 2006; Yurtsever and Altiok, 2006; Yildirim and Tasci 2013). According to Watson, a nurse must develop and sustain a helping-trusting, authentic caring relationship with their patient in order to promote healing and health. Moreover, in Watson's theory, the nurse-patient caring relationship protects, enhances and preserves the patient's dignity, humanity and wholeness. Therefore, Watson's theory—focusing mainly on the nurse-patient relationship as a variable central to nursing-serves as a guide for developing a scale that captures the core of nursing practice. Watson suggests ten carative factors for nurses engaging in caring. The guidelines do not attempt to describe specific clinical activities, but simply highlight essential elements at the core of caring nursing practice. They identify the elements of humanism in nursing care in therapeutic relationships and clinical activities. The ten carative factors are as follows: (1) humanistic-altruistic value system; (2) faith-hope; (3) sensitivity to self and others; (4) helping–trusting, human care relationship; (5) expressing positive and negative feelings; (6) creative problem-solving caring processes; teaching-learning; (7)transpersonal supportive, protective and/or corrective mental, physical, societal and spiritual environment; (9) human needs assistance; and (10) existentialphenomenological-spiritual forces (Watson, 1988; Cossette et al., 2005).

It is well-known that occupational knowledge, experience, critical thinking skills and critical thinking processes are very important in the nursing profession. That is why, while managing the caring process, nurses are obliged to assess the problems of the patient and decide on the

method of caring according to the data obtained. Most of the time, nurses must assess a number of options concurrently and make quick decisions. Sometimes the right decision made by the nurse plays a vital role in a patient's life. This is why critical thinking is crucial in nursing (Ozdelikara et al., 2012).

In this modern healthcare environment, with its complex technology and patient interventions, nurses require critical thinking skills. Therefore, many studies have emphasised the need for critical thinking (Cho, 2005; Zygmont and Schaefer, 2006; Hoffman, 2008; Vacek, 2009; Wood and Toronto, 2012).

Critical thinking ensures that the nurse reflects the basic nursing training they have received, their occupational experiences and research results which they had assessed logically, when caring for patients. A lack of critical thinking skills can negatively affect the quality, sufficiency and efficiency of service and the professionalism, autonomy and authority in profession. The more effective the nurses are in critical thinking, the better their services become in increasing quality of life and protecting and improving public health. That is why it is highly important to provide students with an insight into critical thinking (Ozturk and Ulusoy, 2008).

Consequently, nursing can be defined as the science and art of caring, whereas caring can be defined as an interpersonal process/interaction. Moreover. in this modern healthcare environment—with its complex technology and patient interventions—nurses require critical thinking skills. Therefore, many studies have emphasised the need for critical thinking; however, there is a gap in our understanding of the dimensions of critical thinking as related to certain behaviours, especially caring, which is the core of nursing. This study thus analyses the relationship between critical thinking disposition and caring behaviour of nursing students, and it sought to answer the following question: 'What is the relationship between caring behaviour and disposition toward critical thinking?'

#### Methods

#### Design

This study was a cross-sectional study.

## Participants and sampling methods

The participants were a convenience sample of nursing students from a four-year nursing course in Eastern Turkey. The final sample comprised 167 nursing students (95 males and 72 females). The sample age range was from 18 to 28 years (M = 22.28). The participants of the research were in the first, third and fourth years of the Nursing Department of the Health School: we had no second-year students because the university did not admit any students for one year because of a shortage of lecturers. Moreover, all the students were practicing in clinics from their first year so had clinical experience. All participants reported having no education on critical thinking.

#### **Data collection**

Data collection for this study took place at a university in Turkey. The data was collected between May and June of 2015. A convenience sample of nursing students was invited to participate in the study to be held in a classroom, and the students were asked to sign on a consent form. The students completed the questionnaire, which was written in Turkish.

#### **Instruments**

#### Socio-Demographic Characteristics Form

The Socio-Demographic Characteristics Form was developed by the authors. Demographic data collected included a participant's year of study, age and gender.

# The Caring Nurse-Patient Interaction Scale (CNPI-70)

The Caring Nurse-Patient Interaction Scale (CNPI-Long Scale) was developed by Cosette in 2005 to assess attitudes and behaviours which were related to the Watson's Care Theory. The scale comprised 70 items in 10 subscales: humanism, sensitivity, hope, helping relationship, expression of feelings, problem solving, teaching, environment, needs and spirituality. The scale has the dimensions of importance, competence and feasibility. The lowest score that can be obtained in the three dimensions of the scale is 70 and the highest is 350.

The students rated their addressing perceptions about how realistic attitudes or behaviours on a scale of 1 to 5, with 1 being 'not at all' and 5 being 'extremely'. The Turkish version validity and reliability were conducted by Atar and Astı (Atar and Astı, 2012). The Turkish version of the scale was used in this study and permission was obtained from the scale's authors. For internal

consistency, the scale's item-total correlations were 0.56–0.81 and Cronbach's alphas were 0.99, 0.98 and 0.99, respectively, for the three dimensions.

When participants' scores increased on the scale, their nurse–patient interaction value related to attitudes and behaviours increased positively (Cossette et al., 2006).

Cossette, along with Pepin, Cote' and De Courval, also developed a shorter version of the scale (CNP-Short Scale) in 2008; however, they suggested using the 70-item long version for evaluating nursing students' attitudes and behaviours related to caring nurse—patient interaction (Cossette et al., 2008).

Two things led them to abridge their original scale into a more concise version (CNPI-Short Scale). First, many of their subscales were moderately to highly correlated: this is an empirical reflection of the theoretical non-independence of the carative factors. Secondly, the lengthy 70-item questionnaire was problematic in the clinical research setting, particularly with severely ill patients. This shortened scale was based on three *a priori* caring domains that were synthesised from the original ten carative factors (Cossette et al., 2006).

# The California Critical Thinking Disposition Inventory (CCTDI)

This inventory was developed based on the results of the Delphi Report, in which critical thinking and disposition toward it were conceptualised by a group of critical thinking experts (Facione, 1990). The original CCTDI includes 75 items loaded on seven constructs: inquisitiveness, open-mindedness, systematicity, analyticity, truth-seeking, critical thinking self-confidence and maturity.

Kokdemir (2003) carried out an adaptation study to transform this inventory into a Turkish version because of cultural concerns. After all items were translated into Turkish by eight experts—six psychologists, a simultaneous translator and Kokdemir himself—it was given out to 913 students in the Faculty of Economic and Administrative Sciences.

First, item-total score correlations were estimated and 19 items whose correlation was under 0.20 were eliminated from the scale. Factor analysis was performed on the reduced scale. Kokdemir's

study revealed that five items had factor loadings lower than 0.32 and that items under the constructs of open-mindedness and maturity were loaded on one construct. Finally, 51 items with six constructs were kept in the scale. Reliability of the whole scale was found to be 0.88. Reliability coefficients of each subscale ranged from 0.61 to 0.78 (Kokdemir, 2003).

## Statistical analysis

The SPSS Statistics Packet Program was used in the data analysis for the descriptive statistics such as one-way ANOVA, Pearson correlation and simple linear regression analysis. The significance level was set at p < 0.05 for all statistical tests.

#### **Ethical consideration**

Ethical approval was obtained from a university in Turkey, where the study took place. The Ethics Approval Number is 11002.

#### Results

# **Participants and Descriptive statistics**

Socio-demographic characteristics of the nursing students were determined. From 167 students participating in the study, 56.9% were males and 50.9% out of those were in their fourth year of study. When the Nurse–Patient Interaction Scale average was analysed in accordance with factors such as gender and year of study, no significant difference was found.

# The Total Scores of the California Critical Thinking Disposition Inventory and the Caring Nurse-Patient Interaction Scale

The critical thinking disposition scale average of the group was  $254.39 \pm 26.69$  and the Caring Nurse–Patient Interaction Scale average was  $283.36 \pm 41.27$ .

However, a significant decrease was found in the critical thinking scale average when the year of study decreased. The difference was found to be caused by freshmen and seniors with the help of a Post Hoc Tukey HSD test (Table 2).

# The Simple Linear Regression Result in Terms of Predictive Factors of the Caring Nurse-Patient Interaction

When analysed in accordance with a Pearson correlation, a positive link was found between critical thinking disposition scale results and the Caring Nurse–Patient Interaction Scale results (R = 0.470, p < 0.01). The simple linear regression

analysis result was analysed and it was observed that 22% of the caring nurse–patient interactions were predicted by critical thinking disposition ( $R^2 = 0.221$ , p < 0.01) (Table 3).

#### **Discussion**

Information and experiences provided in a clinical atmosphere play an essential role along with the theoretical information when providing critical thinking insight to nurses. Clinical practice is a training process that provides the student with an opportunity to put theory into use and become a professional. Clinical skills play a key role in nursing training. At the same time, clinical skills allow students to interact with the patient, giving them the opportunity to improve and utilise their occupational know-how and skills regarding nursing, make correct decisions, solve problems, improve their ability to understand themselves and think critically (Eskimez et al., 2005).

Critical thinking allows a nurse to utilise their nursing training and occupational experience and provides an opportunity to assess the search results logically and reflect them in patient care. Lack of critical thinking skills can negatively affect quality, sufficiency service; it efficiency in also professionalism, autonomy and authority in profession. The more effective the nurse is in critical thinking, the better their services become in increasing quality of life, protecting and improving public health. Thus, it is highly important to provide students with insights into critical thinking (Ozturk and Ulusoy, 2008).

Some studies revealed that university students in Turkey have a relatively low capacity of critical thinking (Dil and Oz, 2005; Ozturk and Ulusoy, 2008; Bulut et al., 2009; Beser and Kıssal, 2009; Akkus et al., 2010). In this study, the average score of the nursing students for the critical thinking disposition scale was  $254.39 \pm 26.69$ . According to the results of CCTDI, scores less than 240 are low, between 240 and 300 are average and above 300 are accepted to reflect a high critical thinking capacity (Dil and Oz, 2005). This scale showed that our group had an average level of critical thinking skills. According to Colucciello, 'critical thinking dispositions are essential for the development of higher-order critical thinking and learning'. As such, these students need more training in critical thinking (Colucciello, 1999).

Table 1. The Total Scores of the California Critical Thinking Disposition Inventory and the Caring Nurse-Patient Interaction Scale

Scale	$\overline{X}$ ±SD	Min	Max	Median
The California Critical Thinking	$254.39 \pm 26.69$	199	340	251.88
Disposition Inventory The Caring Nurse-Patient	283.36± 41.27	180	368	286
Interaction Scale	203.30± 41.27	100	300	200

**Table 2. Distribution of the Students Critical Thinking Scores and The Caring Nurse-Patient Interaction Scale Scores According to the Year of Study** 

The Year of Study	N	The California Critical Thinking Disposition Inventory	The Caring Nurse-Patient Interaction Scale		
		$\overline{X}$ ±SD	$\overline{X}$ ±SD		
First	18	$266.17 \pm 27.1$	$283.06 \pm 45.9$		
Third	64	$257.70 \pm 28.0$	$290.31 \pm 41.1$		
Fourth	85	$249.40 \pm 24.7$	$278.19 \pm 40.1$		
		F 3.856*	F 1.587		

<sup>\*</sup>p<0.05

**Table 3. The Simple Linear Regression Result in Terms of Predictive Factors of the Caring Nurse-Patient Interaction** 

Variable	β	SD <sub>B</sub>	R	$\mathbb{R}^2$	Standardized	t	F
					beta		
The California	0.727	0.106	0.470	0.221	0.470	6.848*	46.889*
<b>Critical Thinking</b>							
Disposition							
Inventory							

<sup>\*</sup>p<0.01

A number of studies have shown that the more training the students receive the higher their critical thinking capacity becomes (Shin, 1998; Adams et al., 1999; Gunes and Kocaman, 2005; Dil and Oz. 2005: Ozturk and Ulusov. 2008). As the number of years of study increases, the knowledge capacity increases, resulting in a higher capacity of critical thinking (McGovern and Valiga, 1997). However, in this study a significant decrease was found in the critical thinking capacity average when the number of years of study was lower. With the help of a Post Hoc Tukey HSD test, this decrease was identified between freshmen and seniors (Table 2). This result is considered to be obtained because of factors such as the lack of trained staff in the analysis/synthesis and interpretation fields, tendency of the students to avoid critical thinking as they gain experience, insufficiency of practice fields in quality and event or the lack of training in their schedule regarding critical thinking. According to the study carried out by Akkus, Kaplan and Kacar in 2010, third year students have a lower average score on the critical thinking disposition scale. However, because they face many events that require problem solving, independent decision-making and multidimensional thinking, the capacity of critical thinking of nursing students is expected to increase as they participate in the higher classes (Bulut and Ertem, 2009; Akkus, 2010).

The Caring Nurse-Patient Interaction Scale average of nursing students in this study was found to be  $283.36 \pm 41.27$  (Table 2). In the three dimensions of the scale, the highest score that can be obtained is 350 and the lowest is 70. As the score increases, the behaviours and attitudes of students regarding caring nurse-patient interaction improves. In this study, a moderately positive improvement was observed in the behaviours and attitudes of students regarding caring nurse-patient interaction. Thus, students with greater caring behaviours reported more positive critical thinking dispositions (Pai and Eng, 2013). These results support the view of Watson (1990) that caring is at the core of nursing practice, and they are consistent with the research that demonstrates the important role of caring in critical thinking (Zimmerman and Phillips, 2000; Pai and Eng, 2013). This implies that caring motivates students to listen to and consider patient demands, which provides a foundation for critical thinking and the provision of high-quality care. This finding is also supported by the perspective of Redding, who described caring as involving the integration of internal and external sources of information and taking valid action through holistic critical thinking (Redding, 2001).

In improving the clinical decision-making skills of health care professionals, critical thinking allows better and independent decision-making regarding patients. Critical thinking efficiency, attitudes necessary for critical thinking and thinking standards, fundamental critical occupational knowledge and experience are important in the decision-making process. thinking skills are affected Critical occupational training and clinical experience (Hicks et al., 2003; Ay, 2011).

# Implications for nursing practice and education

In nursing, critical thinking for clinical decisionmaking is the ability to think in a systematic and logical manner with openness to question and reflect on the reasoning process used to ensure safe nursing practice and quality care (Paul and Heaslip, 1997). Critical thinking when developed in the practitioner includes adherence to intellectual standards, proficiency in using reasoning, a commitment to develop and maintain intellectual traits of the mind and habits of thought and the competent use of thinking skills and abilities for sound clinical judgments and safe decision-making. We suggest critical thinking which promote the development of the intellectual capacities of student nurses as independent critical thinkers so that critical thinking should be in all nursing curriculum. Therefore, quality client care will be better.

#### **Conclusions**

It is essential to examine the factors that improve critical thinking skills and select the methods that encourage students to search and think. Moreover, clinical practices positively affect critical thinking. Clinical practice fields should be amended to improve caring nurse—patient interaction; thus, the efficiency and productivity of practices should be ensured. These types of studies should be carried out for nurses and nursing students in larger groups. Consequently, future research should use a random sample or wider geographic region to obtain participants and utilise a longitudinal design.

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