

The Factors Affecting Critical Thinking and Empathic Disposition of Nursing Students

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Abstract

Objective: The aim of this study was to determine the factors affecting critical thinking and empathic disposition of nursing students and the relationships between the empathy and critical thinking disposition in nursing education.

Methods: The study was carried out on undergraduate students at nursing school during 2011-2012 academic years. The sample consisted of 276 students who had agreed to participate in the research, 30.7% of them were the first year students (freshman), 27.4 % were the second year students (sophomore), 20.2% were the third year students (junior) and 20.9% were the fourth year students (senior) of nursing program. California Critical Thinking Disposition Inventory (CCTDI) designed by Kökdemir and Empathic Tendency Scale invented by Dökmen were used to assess the research data. Furthermore, an "Individual Information Form" questioning the grades, genders and parental education levels of the nursing students was prepared and applied by the researcher.

Results: The mean score for the Empathic Tendency Scale was 53.25 ± 6.57 , the mean score for the Critical Thinking Disposition Scale was 209.95 ± 25.26 . Correlation analysis revealed significant relationships between the students' scores of Empathic Tendency Scale and total score of Critical Thinking Disposition Scale ($r=0.186$ $p<0.05$). Significant differences were observed in total scores for the Critical Thinking Disposition Scale, Empathic Tendency Scale and Analytical Thinking Sub-scale of student groups ($p<0.01$). The differences were especially distinctive in fourth year students of nursing program. However, there was no relationship between the nursing students' critical thinking disposition sub-scales and empathic tendencies ($p>0.05$). It was detected that nursing students' critical thinking ability was not affected by their genders and parental education levels.

Conclusion: A significant relationship was observed between the Empathic Tendency and general Critical Thinking Disposition and Analytical Thinking skills. The differences were also observed between the class levels in terms of Empathic Tendency and Critical Thinking Disposition and it was also observed that nursing students' critical thinking disposition scores were considerably low. These findings suggest that these skills can be enhanced with education. Current findings revealed that emphasis should be placed on practical works to develop students' ability of empathy and critical thinking disposition in class levels.

Key words: Critical Thinking Disposition, Empathic Tendency, Nursing student

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Introduction

In recent years, one of the issues mostly discussed is not what people should think, it is rather how to think. The development of critical thinking (CT) skills has long been recognized as a prior issue in higher education. Critical thinking is described by the American Philosophical Association (APA) in the Landmark Delphi Study as purposeful and self-regulatory judgment which results in interpretation, analysis, evaluation and

inference (Facione, 1990).

Critical thinking is a crucial skill for nurses and other healthcare professionals and it is essential to effectively manage complex care situations in fast-paced environments that demand increasing accountability. The processes of clinical decision-making and problem-solving require advanced critical thinking skills (Carter et al., 2015).

The dynamic changes in socio-cultural and political form of society are also effective on healthcare system. Such dynamism increases the responsibilities of healthcare workers and nurses, requires the development of multidimensional care and critical thinking skills (Riddle, 2007; Dil and Öz, 2015). Various status and powers have been given from society to nursing profession with this process of change. It has been the cause of several expectations from the nursing profession such as people with dedication, loyal and unreliable, do the right thing, full-do, take responsibility for the decision, making the right decisions, self-direction. Besides, it is expected to have acquired modern professional qualifications of nurses to meet the community's expectations (Riddle, 2007; Senita, 2008). On the other hand, using problem solving strategies and strong knowledge of decision making ability are expected from the nurse. Understanding this process completely, correctly and use in patient care are based on the development of professional skills such as critical thinking skills (Birol, 2004). All national and international nursing organizations accept the critical thinking skills as basic elements of nursing practice and describe critical thinking skills as a universal behavior (Kataoka-Yahiro and Saylor, 1994).

When faced with uncertainty due to lack of adequate information and limited time to decide with this uncertainty, shortcuts are used and these shortcuts require decision-making ability and critical thinking skills (Emir, 2012). Also Kataoka-Yahiro and Saylor (1994) developed a model of critical thinking in making clinical decisions necessary for safe and effective nursing care. The purpose of the model was to give leadership to take clinical decisions when clinical experience of nurse begins in order to provide safe and effective nursing care and it is comprised of five dimensions (Perry and Potter 1997, Potter and Perry 2003). According to this model, five dimensions of critical thinking is as follows: Essential Nursing Career Information, Nursing Experience, Critical

Thinking Competency, General Qualifications (Specific Qualifications in Clinical Environment-Specific Qualifications for Nursing), Attitudes to Critical Thinking (Confidence – Independent Thinking – The Equality – Responsibility – Take Risks – Discipline – Low Volunteering – Wholeness – Perseverance-Wonder – Creativity), Critical Thinking Standards (Intellectual Standards: Open –Right – Honest – Specific – Exact-Important –Associated with the Subject – Significant – Enough – Consistent – Rational – General – Appropriate; Professional Standards: Ethical Criteria for Decision-making in nursing, Evaluation Criteria – Professional Liability (Perry and Potter 1997, Potter and Perry, 2003).

The nurse needs to synthesize and analyze all the knowledge and information while providing health care to individuals with impaired health. Multi-dimensional care understanding is forcing nurses to consider critically and flexible. Nurses with these features can establish cause-effect relationships. Professional career, autonomy and power affect the nurses positively (Banning, 2006; Riddell, 2007). The quality of nursing care depends on integration of critical thinking skills with implementation environment. National League for Nursing (1991) emphasized that the critical thinking was essential in nursing education, the critical thinking skills were important professional qualifications for nursing school graduates (Adams et al., 1999).

Empathy is also one of the basic qualities needed in order to identify patient and problems. Empathic tendency is a feature that can be developed through training (Hodges, 1991). Acquiring and maintain positive health behaviors, based on basic interpersonal empathy is significantly effective (Akgöz and Karavuş, 2005). Nursing is a profession that based on human relations. The effectiveness of the care process depends on the ability of nurses to communicate effectively with others. Nurses need to understand the experiences of individuals through both verbal and non-verbal communication, both should be able to express themselves correctly; the person must be able to communicate effectively with care as a caregiver. Also help-based relationship is the most fundamental component of empathy (Tutuk and Doğan, 2002). In the literature; it is observed that there were many studies on the nursing students' empathic skills. Most of these studies

show that education was effective on development of emphatic skills (Tutuk ve Doğan, 2002; Mete and Gerçek, 2005; Ançel, 2006; Avcı et al., 2013).

The objectives of nursing education at universities are; to ensure students' creativity, critical thinking skills and the continuation of the self-development. At the end of the educational process, the prospective nurse is expected to solve the patient's health problems; able to use scientific method of problem solving and possess the sufficient knowledge, attitudes and skills (Kang et al., 2009). Nursing training in the university level aims to solve the health problems of the patients by using the knowledge, attitude and skills of the individuals, yet it may be positive or stressful for the individual (Money, 2007; Kang et al., 2009). To teach students about professional values in nursing education, it is important to improve communication and helping skills and there is a direct relationship with empathic tendency of the nursing profession (Avcı et al., 2013). To what extent the empathic skills of nursing students can be developed is not known and to what extent they can show success and academic achievement is not also well known. The relationships between these variables and critical thinking are also poorly understood. Studies that are examining dispositions and critical thinking skills of nurses are very limited in Turkey. Nurses' critical thinking dispositions were reported to be in low- and medium-levels in a previous study (Dirimmeşe, 2006). The studies that are examining the relationships between the critical thinking disposition and empathy are also quite limited. The aim of this study was to identify critical thinking disposition and empathic tendency levels of nursing students and to examine the factors influencing these parameters.

Materials and Methods

Design

A descriptive design was adopted.

Setting and Sample

Sample was recruited from Ordu University, Department of Health in 2011-2012 academic year with 1st, 2nd, 3rd, and 4th year students who are attending the courses. The population of the study consisted of 315 students. The sample of the study who agreed to participate in the study comprised of 276 students.

Data Collection, Measurements

Data for the study was collected by using a questionnaire form, the California Critical

Thinking Tendency Scale (CCTDI) designed by Kökdemir (2003) and Empathic Tendency Scale invented by Dökmen (1998).

CCDTI was developed by Facione and validity-reliability works were performed in accordance with Kökdemir (2003).

This scale consists of six sub-scales and a total of 51 items. The CCTDI scores less than 240 are assessed as low and the scores over 300 are assessed as high (Kanbay et al., 2011). Total internal consistency coefficient of the original scale (Cronbach's alpha) was 0.90 and the internal consistency coefficients of the subscales (Cronbach's alpha) varied between 0.72 - 0.82.

Empathic Tendency Scale was developed by Dökmen (1988). The scale is rated in 1-5 likert scale and consisted of 20 questions. This scale was developed to measure the component of empathy and the potentials of empathy in everyday life (Duru, 2002). Total internal consistency coefficient of the original scale (Cronbach's alpha) was 0.82 and the internal consistency coefficients of the subscales (Cronbach's alpha) were around 0.72.

Data Analysis

Data analysis was performed by using "SPSS 15.0" and data were assessed through frequency, Pearson Correlation Test, variance, Kruskal-wallis tests.

Results

About 73.3% of participants were female, 30.7% were studying at the first year, 27.4 % in the second, 20.2% in the third and 20.9% in the fourth year. Considering the academic achievement of nursing students, general point average (GPA) was 2.57. About 43.5% of participant students had a GPA of between 2.00 - 2.50 and 42.8% had a GPA of between 2.50 - 2.99.

Mothers of 65%, and fathers of 41.9% of the participant students were primary school graduates and mothers of 90.6% of students were homemakers. The monthly family income of 50% of nursing students was between 0 and 1500 TL and 63.7% of families had 0-3 children (Table 1).

Table 1. Distribution of The Demographic Characteristics of Students

Demographic Characteristics	n	%
The Mother's Educational Status		
Illiterate	27	9.8
Primary School	180	65.2
Secondary and High School	53	19.2
University	16	5.8
The Father's Educational Status		
Illiterate	1	0.4
Primary School	117	42.4
Secondary and High School	112	40.6
University	46	16.7
Family Income		
0-1500 TL	138	50
1501-2500 TL	102	37
2501-3500 TL	29	10.5
>3501 TL	7	2.5
Number of Children in Family		
0-3	176	63.7
3-6	51	31.5
>7	13	4.7
The GPA of students		
<1.99	13	4.7
2.00-2.50	120	43.5
2.51-2.99	118	42.8
3.00-3.50	22	8.0
3.51-3.99	3	1.1

Almost 92.3% of the nursing students' critical thinking disposition levels were low and 7.7% were moderate. Total average CCTDI score of entire students was 209.95 ± 25.26 . The average score for analytic thinking subscale was 49.93 ± 8.95 ; the average score for self-confidence subscale was 28.26 ± 6.03 ; the average score for open-mindedness subscale was 48.09 ± 8.88 ; the average score for systematic thinking subscale was 25.59 ± 4.71 ; the average score for truth-seeking subscale was 24.77 ± 5.81 ; the average score for inquisitiveness subscale was 33.62 ± 7.07 and finally the average score for empathy was 53.25 ± 14.80 (Table 2).

The average score for total critical thinking disposition was 198.70 ± 21.72 for under the age of 20 and 210.05 ± 26.84 for ages between 20-31 years. There was a highly significant relationship between age and critical thinking disposition total score and empathic tendency ($p < 0.001$) (Table 3).

The average score for the total critical thinking disposition was 195.85 ± 17.76 for the first year students; 200.92 ± 24.39 for the second year students; 203.42 ± 25.19 for the third year students and 220.53 ± 26.31 for the fourth year students. There was again a highly significant relationship between classes and critical thinking disposition total score and empathic tendency ($p < 0.001$) (Table 3).

Table 2. The Average Score for Critical Thinking Disposition Level and Empathy of Students

	Median	The average	Standard Deviation
Critical Thinking Disposition Total Score	204	209.95	25.26
Analytic Thinking Sub-scale	51	49.93	8.95
Open-minded Thinking Sub-scale	48	48.09	8.88
Self-Confident Thinking Sub-scale	28	28.26	6.03
Truth-Seeking Thinking Sub-scale	25	24.77	5.81
Systematic Thinking Sub-scale	26	25.59	4.71
Inquisitive Thinking Sub-scale	34	33.62	7.07
Empathy	58	53.25	14.80

The average score for empathy was 46.52 ± 14.56 for the first year students; 52.81 ± 13.70 for the second year students; 51.50 ± 15.42 for the third year students and 65.39 ± 6.57 for the fourth year students ($p < 0.001$) (Table 3).

There was a positive relationship between the empathic tendency and critical thinking disposition total score ($r = 0.186$, $p < 0.05$) (Table 4).

In addition to there was also positive relationship between the class level and empathy ($r = 0.393$, $p < 0.01$), CCTDI ($r = 0.317$, $p < 0.01$).

Discussion

Nurses must often consider multiple options together and give quick decisions. Critical thinking is a vital issue for them. Thus, nursing education directed to develop critical thinking skills of students.

In the present study, 92.3% of the nursing students' critical thinking disposition levels were low and 7.7% were moderate. CCTDI total average score of entire student was 209 ± 25.26 . The present value is lower than the values reported in earlier studies. In previous studies, the average CCTDI total score was reported as 296.02 ± 4.30 (Shin et al, 2006); 284.93 ± 25.58 (Suliman & Halabi, 2007); 264.7 ± 24.01 (Ip et al, 2000). Despite different values in Turkey, the level of critical thinking disposition of nursing students was mostly reported as moderate (Kaya 1997; Dil & Coşkun 2001; Dil & Öz 2005; Dirimeşe 2006). Such findings were

Table 3. Relations between Demographic Variables, Empathy and Critical Thinking Disposition

		Total Score of CCTDI		p	Empathy		p
		Average	SD		Average	SD	
Age	<20	198.70	21.72	p<0.001	49.33	14.65	p<0.001
	21-30	210.05	26.84		57.17	13.94	
Gender	Male	205.37	26.48	p<0.001	53.81	14.57	p>0.05
	Female	203.83	21.89		51.69	15.42	
Class Level	First year	195.85	17.76	p<0.001	46.52	14.56	p<0.001
	Second year	200.92	24.39		52.81	13.70	
	Third Year	203.42	25.19		51.50	15.42	
	Fourth year	220.53	26.31		65.39	6.57	
Monthly Income	<500TL	195.93	23.96	p>0.05	46.80	13.61	p<0.05
	501-1500TL	204.62	23.60		53.64	15.28	
	1501-2500TL	204.09	25.09		54.27	14.35	
	2501-3500TL	216.92	28.94		50.48	14.97	
	>3500TL	195.57	30.61		62.57	9.62	
Father's Occupation	Officer	204.65	27.22	p>0.05	54.88	14.12	p<0.05
	Worker	206.68	22.72		54.16	15.34	
	Self-employ.	206.42	24.74		53.78	15.34	
	Artisan	205.45	26.73		51.26	13.93	
	Retired	197.35	25.92		47.15	14.35	
	Farmer	186	14.14		39.50	14.84	

Table 4. Results of Correlation Analysis

	Critical Thinking Disposition Total Score	Analytic Thinking Sub-scale	Open-minded Thinking Sub-scale	Self-Confident Thinking Sub-scale	Truth-Seeking Thinking Sub-scale	Systematic Thinking Sub-scale	Inquisitive Thinking Sub-scale
Empathic Tendency Scale	r=0.186 p<0.05	r=0.000 p>0.05	r=0.057 p>0.05	r=0.017 p>0.05	r=0.098 p>0.05	r=0.088 p>0.05	r=0.039 p>0.05

different from the current findings. The students of Foreign Languages Department had the greatest GPAs and they were followed by psychology, nursing, history, and education and business majors.

A large number of students had low critical thinking level in present study.

However, high critical thinking disposition levels were reported in some earlier studies (Profetto-Mc Grath, 2003; Dirimeşe, 2006). These findings are in contrast with the finding. In a study carried out by Bulut et al. (2009), critical thinking level of 90.7% of nursing students were reported as low (211.03 ± 22.72).

There was a positive relationship between the class level, age and critical thinking total score ($p<0.001$) and there was a negative relationship between the class level and analytic thinking subscale ($p<0.01$). There was also a positive relationship between the class level and systematic

thinking subscale ($p<0.05$).

Sulliman (2006) examined the critical thinking skills and disposition based on class levels and investigated if there is a difference in learning styles. The first year ($n = 80$) and the second year ($n= 50$) nursing students participated in that study and significant differences were observed between the critical thinking disposition, abilities and learning styles of nursing students. Kawashima and Petrini (2004) compared nursing students with the nurses working at hospitals in terms of critical thinking dispositions and indicated that critical thinking disposition levels of the nurses were lower than the student groups.

Bulut et al. (2009) reported significant differences between the class level and the mean scores for critical thinking disposition level ($t=6.779$, $p=0.000$). Öztürk and Ulusoy (2008) indicated increasing critical thinking skills in the

second, third and fourth years and the values reached to the highest levels in graduate students. Brooks and Sepherd (1990) in the US reported lower critical thinking levels for undergraduate nursing students. Shin (1998) investigated critical thinking of undergraduate and graduate nursing students and observed significant differences between critical thinking levels of nursing students at different level of education. Ip et al. (2000) assessed the critical thinking trends of 122 undergraduate nursing students in Hong Kong and reported significant differences in critical thinking scores of the first-year students. Walsh and Hardy (1999) compared the critical thinking scores of university students at different majors. Adams et al. (1999) indicated increasing critical thinking levels with the increasing years of experience in nursing profession. Banning (2006) found that only two out of 37 nurses were able to use of critical thinking in clinical decision making but others were quite limited in using critical thinking abilities. These findings are similar to current findings.

In present study, a significant relationship was observed between the analytic thinking an academic achievement and gender of nursing students ($p < 0.05$). No significant relationship was observed between the critical thinking total score and academic achievement trends ($p > 0.05$) and there was a significant relationship between the analytic thinking sub-scale, inquisitive thinking and academic achievement ($p < 0.05$).

Emir (2012) reported that critical thinking dispositions of the students didn't differ according to their academic achievements. These findings are in line with the current data. Fisher (1995) mentioned in their books that the critical thinking and dispositions increase the academic success of individuals. Stewart and Dempsey (2005) implemented case studies to develop critical thinking dispositions and skills of nursing students and identified an increase in academic achievement scores with critical thinking abilities. Ellermann et al. (2006) in a study with nursing students in 2004, used the concept maps in the course of teaching and observed increased academic achievement by the end of the period. These results are similar to current findings.

In present study, there was a relationship between the class level, age and empathy ($p < 0.01$). The average score of empathy was 53.25 ± 14.80 for nursing students. The average score of empathy was 46.52 ± 14.56 for the first

year students, 52.81 ± 13.70 for the second year students, 51.50 ± 15.42 for the third year students and 65.39 ± 6.57 for the fourth year students ($p < 0.001$). There was a positive relationship between the Critical Thinking Disposition Inventory (CCTDI) total score and Empathic Tendency Scale ($p < 0.05$). Tutuk et al. (2002) reported the average score of empathic tendency of nursing students as 69.55. In the same study, according to the empathic tendency average scores, a significant difference was not observed in empathic tendency of different age groups. Although the mean scores of empathy were higher than the present study, data were quite similar to current ones.

Akgöz and Karavuş (2005) reported the average score of empathic skills of working midwives as 128.2. Öz (1998) indicated the empathic tendency average score of nursing students as 70.25. Dizer & İyigün (2009) reported the highest empathic propensity score as 72.4 ± 9.3 for 20-25 years age group and 72 ± 8.6 for the ages 31 years and older, but there was no relationship between the empathic tendency and age groups ($p > 0.05$). According to current results, empathic tendency average scores of nursing students was found to be the lowest in the first year, the highest in the fourth year and increasing empathic tendencies were observed with increasing educational levels. Such results were due to lessons (interpersonal relations, communications) learned in nursing education and close contact with more patients. Empathic tendency of nurses increase with the increasing years of experience (Öz, 1998).

Conclusion

Critical thinking and empathic tendency are two significant tools used in patient care. Present results revealed that average critical thinking dispositions scores of nursing students were low. There was a relationship between the critical thinking dispositions total score and empathic tendencies. Age, gender and class level affected critical thinking disposition level of nursing students. Class level, age, monthly income and father's occupation affected the empathy. Academic achievement did not affect the critical thinking level. Increasing critical thinking disposition scores were observed with increasing class levels. It is believed that such an increase was because of increased age and level professional knowledge.

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