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The relationship between emotional intelligence and critical thinking skills in Iranian nursing students

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Abstract

Background: Critical thinking skills are one of the most important competencies in successful clinical performance of nursing students. Emotional intelligence is also one of the concepts related to critical thinking and can play an important role in the ability to think. Thus, this study was conducted to investigate the relationship between emotional intelligence and critical thinking in nursing students.

Methods: This was a quantitative, descriptive–correlative Study. Participants were nursing students in different levels. To collect data, California Critical Thinking Test (form B) and Bar-On Emotional Intelligence Questionnaire were used. Then, data were analyzed with descriptive and inferential statistics using SPSS 16 software.

Results: Pearson correlation test showed no significant correlation between the total score of critical thinking skills and each of its components with the total score of emotional intelligence and its component, except for empathy (p=0.001), in nursing students.

Conclusion: The findings revealed a significant relationship between empathy and critical thinking skills in nursing students. Using these elements as teaching techniques for nursing education courses can be very helpful in developing good nurse-patient relationships and improving patient care.

Keywords: Critical Thinking, Emotional Intelligence, Nursing Students, Iran

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Introduction

Thinking and the skill of how to think are important concepts that have attracted the attention of many scholars for several years, and nowadays improving thinking skills is one of the fundamental goals of education systems. Critical thinking is one method of thinking (1). Also, it is one of the most important principles of education in every country, and each country needs people with high critical thinking ability for its development (2). Critical thinking has complex mental process and activity. Thus, there is no single definition for it, and the numbers of definitions of critical thinking are as equal as those of experts in this area (3, 4). Many efforts have been made to reach a consensus for concepts present in the definitions of critical thinking, such as the effort of American Psychological Association (APA) that conducted a Delphi study under the supervision of Facione in 1990, whose results led to the following definition of critical thinking (5):

"Purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which judgments are based."(6).

Studies have indicated that in response to rapid changes of health settings, nurses should have critical thinking skills to provide effective care to the patients and prepare themselves for accepting roles and tasks of health care systems (7). However, several studies revealed low critical thinking skills among nursing students (8-11).

Critical thinking in nursing has at least 2 emotional and cognitive dimensions (12). According to Elder (1996), critical thinking is the key to emotional intelligence. She believed that, "critical thinking is the only plausible vehicle by which we could bring intelligence to bear upon our emotional life." (13). Emotional intelligence is an important concept in nursing and is defined as "the ability to perceive emotions, access and generate emotions to assist thought,

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↑What is "already known" in this topic:
Critical thinking and emotional intelligence are acquirable and measurable.

→What this article adds:
According to the results, empathy and critical thinking skills should be incorporated into the nursing curriculum to enhance nurse-patient relationship and patient care.

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understand emotions and emotional knowledge, and reflectively regulate emotions to promote emotional and intellectual growth."(14). Evidence has shown that emotional intelligence associates with individual success or failure in different areas of life (15). Based on the view of Bar-On, emotional intelligence is a set of capacities, beliefs, and non-cognitive skills and increases individual capabilities to successfully face challenges and environmental pressures (16). Several studies on emotional intelligence have indicated that individuals with higher emotional intelligence have more spiritual well-being(17), lower mental disorders (18), lower possibility of suicide (19), higher self-efficacy (20), higher motivation (21), better problem-solving (22), and higher socio emotional adjustment (23). Also, several studies have been conducted on the relationship between emotional intelligence and critical thinking in baccalaureate nursing students and nurses, and some indicated a positive correlation between these 2 variables (24-27). Other studies found no relationship between critical thinking and emotional intelligence (28, 29). Thus, considering the importance of these 2 fundamental concepts and their positive effects on the care provided by nursing students and nurses and taking into account the contradictory findings, we aimed at studying the relationship between these 2 variables. We conducted this study to emphasize the importance of simultaneous growth of emotional intelligence and critical thinking skills in nursing and improve social health and performance of nurses.

Methods

This was a descriptive-correlative study. Permission to conduct the study was obtained from Isfahan University of Medical Sciences. Then, participants were selected among B.S. students using systematic random sampling and among M.S and Ph.D students using convenience sampling due to lack of availability. Students who had physical and mental capabilities to answer the questions were allowed to enter the study, and exclusion criterion was having an educational failure in the past educational semester. Sample size was determined to be 150 using the formula with 95% confidence level. In total, 169 nursing students participated in the study. After explaining the aim of the study to the participants and obtaining their informed consent, they were asked to complete the questionnaires.

Data gathering instruments included a questionnaire with 3 parts: The first part was related to demographic characteristics, the second to questions of California Critical Thinking Skills Test (form B), and the third included items on Bar-On Emotional Intelligence Questionnaire. The second part was related to items of California Critical Thinking Skills Test (form B), which included 34 itemsin5cognitive skills, such as evaluation, inference, inductive reasoning, and deductive reasoning. In this test, 9 items were related to analysis subscale, 14 to evaluation, and11toinference. Each item has4 or5options, among which 1 is the correct answer. Score 1 is given to each correct option. In this study, the mean scores of subscales have been stated as percentage to facilitate reporting results. Therefore, the lowest score for this test is 0 and the highest 34. Maximum time to complete the test was 45 minutes. The 34-item test was extracted from 200 items and arranged considering the complexity and discipline of critical thinking(3). The test was normalized in different countries and had good validity and reliability. The test has been validated and arranged based on our culture. In the study by Khodamoradi (2006), content and face validity of the test was confirmed. To determine the reliability of the test, internal and external consistencies were used. The internal correlation coefficient for the subtests was between 0.71 and 0.77, showing that the subscales had a significant positive correlation with the total score of the test (r = 0.86). Also, results of test-retest showed the correlation coefficient of 90% and Kappa coefficient of 0.81(30).

The third part was associated with items of Emotional Intelligence Questionnaire, which includes 90 items that measures emotional intelligence by 15 subscales, including problem-solving, pleasure, independence, resistance against mental pressure, self-actualization, emotional self-awareness, realism, interpersonal relationship, optimism, self-esteem, impulse control, resiliency, responsibility, empathy, and self-expression. Total score of each subscale is equal to sum of scores of all items of the subscale. Moreover, the total score of the questionnaire is equal to sum of the scores of 15 subscales. Items were scored by 5-point Likert scale as follow: completely agree (5), agree (4), often (3), disagree (2), and completely disagree (1). Scoring was done inversely for some questions with negative contents, ranging from completely agree (score of 1) to completely disagree (score of 5). The maximum total score of the questionnaire was 450 and the minimum was 90; and in each subscale, the maximum score was 30 and the minimum was 6. Primary Emotional Intelligence Questionnaire, which has been standardized in Iran, includes 117 items. It has an acceptable content validity, and its reliability has been reported to be 0.93 using Cornbrash's alpha coefficient (31).

Data were analyzed using SPSS Version16 and descriptive statistical methods (mean, standard deviation, frequency, percentage) and inferential statistics (Pearson correlation coefficient).

Results

In the present study, 124 B.S students, 24 M.S students, and 21 Ph.D. students participated, of whom 64.5% were female and 35.5% were male, with the mean± SD age of 24.58±55.6 years (age range: 18-50 years). Also, 127 (75%) participants were single and 42 (25%) were married.

The results revealed that the mean score of critical thinking skills of nursing students was 11.15(SD=3.46). Also, the mean total score of emotional intelligence was reported to be 336.53(SD=33.08).The results showed no significant correlation between critical thinking skills and emotional intelligence using Pearson correlation test (p=0.62, r=0.038).

Also, Table 1 demonstrates the relationship between scores of emotional intelligence and critical thinking skills of nursing students. Using Pearson test, a significant relationship was found between critical thinking skills and empathy as a component of emotional intelligence (p=0.001).

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*Table 1.*Correlation between nursing students' critical thinking and components of emotional intelligence (n = 169)

Parameter	Correlation Coefficient	p
CT/ ES	0.08	0.30
CT/A	0.02	0.80
CT/S-R	0.007	0.93
CT/SA	0.01	0.88
CT/I	0.05	0.45
CT/E	0.24	0.001*
CT/SR	0.13	0.09
CT/IR	0.002	0.98
CT/RT	0.02	0.78
CT/F	0.01	0.86
CT/PS	0.98	0.20
CT/ST	0.04	0.52
CT/IC	0.04	0.54
CT/O	0.005	0.94
CT/H	0.01	0.85

*P-value< 0.05 is significant. ES: Emotional Self-awareness, A: Assertiveness, S-R: Self-regard, SA: Self-actualization, I: Independence, E: Empathy, SR: Social responsibility, IR: Interpersonal relationship, RT: Reality testing, F: Flexibility, PS: Problem- solving, ST: Stress tolerance, IC: Impulse control, O: Optimism, H: Happiness

Discussion

This study revealed that the mean total score of critical thinking skills was less than half of the maximums core, indicating weakness of these skills in nursing students. However, the average total score of emotional intelligence was higher than half of the maximum questionnaire score. Thus, it can be inferred that emotional intelligence is relatively favorable or that the overestimation of the score of emotional intelligence is due to the self-report nature of the questionnaire. The results of critical thinking in the present study agreed with those obtained from studies on nursing students with B.S degree (10, 11, 25, 32). Furthermore, the score of critical thinking skills in this study was low. Thus, it is highly important to enhance critical thinking skills in nursing students through active teaching methods, such as concept mapping, simulation, and clinical research (33). Therefore, it is proposed to revise teaching methods for nursing students.

With respect to the mean total score of emotional intelligence, the results of studies conducted by Salehi et al.(2012) (34) and Namdar et al.(2008) (35)on nursing students were similar to this study.

This study found no significant relationship between emotional intelligence and critical thinking skills of nursing students(r=0.038, p=0.62). This finding is congruent with that of the study of Haghani et al. (2011)(36), but it is incongruent with findings of several other studies (13, 25, 27, 28). Also, the findings indicated that among the components of emotional intelligence, there was only a significant relationship between critical thinking skills and empathy. Such differences can be attributed to the methodological differences between the studies, including the type of sample, sampling method, and the tools used for measuring the variables.

The present study had some limitations. First, in this study, data collection merely relied on nursing students (self-report). This may have produced socially desirable responses because the researchers used the Bar-On Questionnaire as a self-report tool. Second, the design of this study was correlational, and thus causal relationship could not be established. We hope that the results of this study could provide a basis for those studies that aim at determining a causal relationship between emotional intelligence and critical thinking skills in Iranian nursing students.

Conclusion

In this study, the total score of critical thinking was lower than the average score, and the total score of emotional intelligence was relatively good. Also, there was a weak relationship between the components of emotional intelligence and critical thinking skills. There was only a significant correlation between critical thinking skills and empathy component of emotional intelligence. Emotional intelligence skills and critical thinking skills can be learned, so other components of emotional intelligence and subscales of critical thinking should be improved by active learning-teaching methods and new student-centered methods, such as brain-storming, concept mapping, mind map, and team teaching, self-learning, Socratic questioning and answering, problem-solving, and role modeling of teachers in nursing education. Finally, by training thoughtful and critical thinker nurses with high emotional intelligence, it is hoped to develop core concepts in nursing, i.e., proper communication with patients and provide optimal care resulting in improved community health.

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Conflict of Interests

The authors declare that they have no competing interests.

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