



Progression Trend of Critical Thinking among Nursing Students in Iran

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ABSTRACT

Critical thinking is defined as a basic skill for nurses which leads to the best performance based on the best existing evidence. Although acquisition of this skill is highly emphasized, still there is no single definition for it. Considering importance of critical thinking in performing nursing clinical care, current study was conducted aiming at investigating critical thinking progressive trend among nursing students in a nine-year period using library approach. **Methods:** This systematic research was conducted by search in Magiran, Iran Medex, and SID databases within 2001-2011. The author used critical thinking and nurse as key terms and found 15 research papers to critical thinking in nursing students and three review papers. Also, some papers on critical thinking in medical and paramedical students in Iran were also searched, examined, and compared. Other data bases such as Elsevier and PubMed were also used for enrichment of the discussion. **Discussion:** In terms of historical trend, critical thinking in nursing students has shown no progress within ten-year period (2001-2011) and generally no progress was observed in critical thinking based on standard tests (Watson Glaser test and California critical thinking skills test and Cornell critical thinking test) in the research works conducted in various Iranian universities. This trend is not specific to nursing students and it was also observed in other medical and paramedical fields. It seems that various factors are involved in this situation including lack of identical definition of critical thinking, lack of appropriate tools for evaluation of critical thinking needed in clinic, lack of regular, comprehensive, and purposeful plan in teaching critical thinking, and ambiguity in aspects of critical thinking in the view of clinical instructors and trainers. It seems that aspects of clinical critical thinking and its teaching and evaluation methods are not detailed and clear in Iran. It is suggested that clinical critical thinking and its aspects are investigated from the perspective of clinical instructors so that all nursing faculties teach critical thinking based on a specified and organized plan.

Keywords: Critical thinking, nursing education, students

INTRODUCTION

“Nurses should have critical thinking.” It is the statement which is often heard or read in nursing education or papers. It is generally accepted that critical thinking is a necessary quality for issuing work certificate. Critical thinking is a process of ability to identify problems and raise questions, gather, and collecting data and evidences to support answers and solutions, data interpreting and evaluate alternative solutions, and implement solutions for the best results [1]. The analysis for analysis, reasoning, and evaluation in health services is very important which meets the need for “care based on the best available evidence” and thus promoting care quality and output. Although critical thinking and critical competency still does not have a specific definition, Philosophers Association of America in a Delphi research concluded that the individual with critical thinking: is accustomed to curiosity, has real reasoning of the circumstances, has good information about the situation, has open mind, is flexible, has fair evaluation, is honest about his own errors, is cautious in judgment, is ready for review, acts regularly about complicated issues, is focused on search process, perseveres in search for information related to the subject. Also, Philosophers Association of America formally defines critical thinking as follows: it is purposeful thinking, self-regulatory judgment which leads to interpretation, analysis, evaluation, and inference. Also, this thinking leads to description of evidence, concept, methodology, or cases related to the subject, which judgment is done accordingly [2]. Considering the fact that critical thinking subject is not a new issue in Iran and various studies have been conducted in this regards, current study was conducted aiming at investigating progressive trend of critical thinking among nursing students using library studies.

METHODS

This systematic research was conducted by search in Magiran, Iran Medex, and SID databases within 2001-2011. Other data bases such as Elsevier and PubMed were also used for enrichment of the discussion. The author used critical thinking and nurse as key terms and found 15 research papers and three review papers. The author attempted to find primary references, and in some cases, where primary references were not accessible, secondary references were not used. However, considering time and data source limitation, it is probable that some of studies in this regards are not reviewed by the author.

DISCUSSION

Some research studies were intervention studies, that is, they examined impact of specific method or evaluation on critical thinking of students and the others were conducted aiming at describing or comparing critical thinking among students in different academic grades or different cities. In terms of historical trend, no growth was observed in critical thinking in nursing students within ten-year period (Table 1). Although in studies by Moattari, et al. [3], Khalili [4], Dehkordi and Heydarnejad [5] and Ranjba and Esmaili [6] some interventions caused promotion of critical thinking in students. In several studies, critical thinking level was evaluated below average total score even despite of intervention and increased in critical thinking score [3,4,6] (Table 1). It may suggest that educational system for acquiring critical thinking has not much changed over the time. However, there is other question: is critical thinking status the same in other medical sciences fields? Is this problem specific to nursing field or nursing instructors or it is observed in other fields too? Findings by different studies indicated that the score acquired from critical thinking test has been reported also as lower than average, poor or undesirable by students of other fields such as medical, paramedical, dentistry, pharmaceutical and health management and education of patients and their families may improve health promotion behaviors [7-11]. It seems that the low score of critical thinking is not just for nursing students and this problem exists in other fields as well.

However, the author did not find any research work which compares critical thinking in students and instructors in a specific field in Iran. Since higher educational level necessarily does not lead to improved critical thinking, investigation of critical thinking in instructors, their definition of critical thinking, the strategies which they use for enhancing critical thinking in students may fill the information gap regarding continuation of weakness in critical thinking in students. But in the studies conducted in other countries, critical thinking in students and instructors has been compared, and critical thinking in instructors was higher than students in all of them [12,13]. It can teach by social networks to students because social networks are worthy sources for learning but it can influence on educational performances of students [14].

The other question is that if critical thinking is properly measured in nursing students. Is it probable that critical thinking needed in the clinic is not properly measured? Considering that nursing profession has extensively changed during last two decades and the need for critical thinking and skill is one of the main characteristics needed by undergraduate students, some points should be taken into account in investigation of undergraduate nursing students' critical thinking:

First, even recently there is no consensus on definition of critical thinking in nurses. The definitions have been borrowed from other fields and they vary by research works.

Second, the most common tests which are used for investigating critical thinking in undergraduate students include Watson Glaser test and California critical thinking skills test which have no correlation with clinical behavioral and critical thinking skills taught by nursing instructors. There is no standard test for examining critical thinking specifically designed for the clinic.

Third, skills and behaviors related to critical thinking are taught and evaluated through various ways. For example, some universities hold courses for training critical thinking, while some other consider critical thinking teaching in the academic curriculum. There is no single standard criterion for evaluation of critical thinking [15].

In order to overcome this problem Scheffer and Rubenfeld [16] asked 55 nursing instructors to define aspects of critical thinking. In this study, instructors from 23 states and nine countries within three years in two rounds of Delphi study mentioned 17 characteristics for critical thinking including analysis (separating or breaking the totality components to explore the nature, function, or communications), application of standards (judgment on the basis of laws or social

norms), confidence (being sure of one's reasoning abilities), taking into account the context (considering the situation in general, including communications, environment, relationship of some events), creativity, differentiation (identifying differences and similarities), flexibility (the ability to adapt, cope, change behavior, beliefs), information browser, curiosities (being eager for searching knowledge through observation and questions for discovery probabilities, etc.), intellectual integrity (searching for reality far from lie and completely honestly), having sense of intuition (for finding reality without using conscious reasoning) logical reasoning of the issues, having an open mind, having the perseverance to overcome obstacles, divination (imagining a program and its results), a reflection of his thought (meditation on a subject, especially about their goals for a deeper understanding and self-evaluation of subjective assumptions), transformation of knowledge (changing conditions, the nature and the context in which the person is or where he is focused). The reason for mentioning this study was that it is among the primary studies which defined critical thinking aspects specific for nurses, and it seems that although teaching 17 mentioned aspects to undergraduate students is an ideal thinking and instructors may not be able to teach all of them in real conditions. Ultimately, it can be stated that critical thinking in nursing and respective aspects considered by nursing instructors is somehow clarified for teaching to nursing students, and nursing instructors expressed their intention about critical thinking in clinic in this study [16].

Given lack of considerable progress in measured scores of critical thinking in various studies in Iran, perhaps it is necessary that firstly critical thinking is defined from the perspective of nursing instructors and its aspects for clinical work are specified, and then it can be useful to specify level of skill of nursing instructors in these aspects from their perspective. Then, it can be taught and evaluated in nursing students within in a regular program.

Table 1 Research papers on critical thinking in nursing students during 2001-2011

Author	Research Sample	Measurement Tool	Critical Thinking Status
Moattari, et al. (2001) [3]	Fourth year students of Nursing and Midwifery, Tabriz city	California Critical Thinking Skills Test	Quasi-experimental study with two groups of non-randomized pretest-posttest experimental and control groups Increased critical thinking skills test scores after the intervention. The mean score of critical thinking is not mentioned.
Hoseini and Bahrami (2002) [17]	Freshmen and senior nursing and midwifery, management and medical information and rehabilitation students	Cornell Critical Thinking Test	The ability of critical thinking in freshmen and senior students was significantly different and ability to think critically was increased, but the freshmen and senior students' critical thinking level was lower than average.
Khalili, et al. (2004) [18]	Nursing students of Semnan University of Medical Sciences	California Critical Thinking Skills Test	Quasi-experimental study Raising the level of nursing students' critical thinking skills after learning critical thinking based strategies, but generally mean score of critical thinking was lower than average.
Mirmolaei, et al. (2004) [19]	Freshmen and senior midwifery students, Tehran University of Medical Sciences	California Critical Thinking Skills Test (b)	Comparative descriptive Total scores of critical thinking in freshmen and senior students of Tehran Universities of Medical Sciences were not significantly different. Students in all universities in the study gained about a third of the total points in the questionnaire.
Shafiei, et al. (2004) [20]	Students of Nursing and Midwifery, Zahedan University (First, second, third, fourth, sixth and eighth semester)	California Critical Thinking Skills Test	None of the students passed the test of critical thinking.
Islami, et al. (2004) [21]	Freshman and senior nursing students and nurses with at least 2 years of clinical experience working in hospitals affiliated to Iran, Tehran, and Shahid Beheshti Universities of Medical Sciences	Watson-Glaser Critical Thinking Skills Test	(Descriptive - correlation study) Critical thinking ability in senior nursing students and freshman nursing students and nurses working in hospitals was weak. Critical thinking ability in nurse group was lower than two other groups.
Khalili and Babamohamadi (2004) [18]	Freshmen and senior nursing students of Semnan University of Medical Sciences	California Critical Thinking Skills Test	Critical thinking was increased in last year compared to the first year, but its level was yet below average level.

Ranjbar and Esmaili (2006) [6]	Torbat Heydariye School of Nursing and Midwifery	Author-made	Descriptive-correlation study First-semester nursing students had higher critical thinking level compared to upper semester students Total score of questionnaire toward critical thinking was not mentioned.
Taheri, et al. (2007) [22]	Nursing students of School of Nursing, Abadan	Watson-Glaser Critical Thinking Skills Test	Mean score of critical thinking was higher than average level.
Javadi, (2008) [23]	Senior nursing students of School of Nursing and Midwifery, Guilan University of Medical Sciences	California Critical Thinking Skills Test	Mean score of critical thinking was lower than average level
Nafea, et al. (2008) [24]	Freshmen and senior nursing students, Tabriz	California Critical Thinking Skills Test	Critical thinking score was higher in last year compared to first year, but it was lower than average in both groups.
Vaghar Seyedin, et al. (2009) [25]	Six semester nursing students of Islamic Azad University Birjand branch	California Critical Thinking Disposition Inventory	Quasi-experimental study Comparing cross-guided questioning method and lecturing method The mean critical thinking skills of students in the experimental group (cross-guided questioning in peer group) had improved. But in the same group after the intervention, mean scores of critical thinking was less than average
Barkhordari, et al. (2009) [26]	Third and fourth year nursing students of Shaheed Sadoughi and Islamic Azad University of Medical Sciences, Yazd	California Critical Thinking Disposition Inventory	Most of the students have shaken critical thinking, and none had a strong and stable trend of critical thinking.
Latifi, et al. (2011) [27]	Fifth semester nursing students	Watson-Glaser Critical Thinking Skills Questionnaire	Quasi-experimental study Clinical evaluation through portfolio and conventional method Portfolio method was less effective than conventional method in improving critical thinking skills. Although after intervention in both methods, critical thinking skill was improved in both methods, both groups were weak even after intervention.
Babamohamadi, et al. (2011) [28]	Freshmen and senior nursing students of Semnan University of Medical Sciences, Nursing students of Tehran University of Medical Sciences and Shahid Beheshti and Iran universities of medical sciences	California Critical Thinking Skills Test	At Tehran University, critical thinking was reduced in senior students, while it was increased in Semnan and Iran University. No significant difference was observed in Shahid Beheshti University. Nursing students in Semnan university showed higher level of critical thinking skills compared to nursing students in Tehran University of Medical Sciences. But even in Semnan university students, mean scores of critical thinking assessment was less than average.

CONCLUSION

Critical thinking is one of the main skills for a nurse for having the best performance based on the best evidence. It has not changed within a ten-year period. It seems that it is useful to specify aspects of critical thinking in nursing field for solving this problem, and then it can be taught and evaluated using a regular and purposeful plan.

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