

Original article

Comparison of critical thinking skills between continuous licentiate and bachelor- licentiate nursing students of Abadan nursing faculty in 2008.

Nourolla Tahery^{1*}, Bahman Cheraghian², Tahareh Esmaili³, Hoda Mohammadi⁴, Jalile Aboodi⁴

1 MS.c of nursing, Abadan nursing faculty, Ahvaz Jundishapour University of Medical sciences

2 PhD student of Epidemiology, Abadan nursing faculty, Ahvaz Jundishapour University of Medical sciences

3 Ms of nursing, Valiasr Khorramshahr hospital

4 Nursing student, Abadan nursing faculty, Ahvaz Jundishapour University of Medical sciences

Abstract

Introduction: Critical thinking skills as thinking and judging self-regulation are purposeful and result in solving problems and making appropriate decisions. Therefore, the importance of this subject and its role in the nursing profession and the clinical decision, this study was done to compare critical thinking skills of nursing students in continuous licentiate and bachelor- licentiate admissions.

Methods: This study was the analytical method that all continuous and discontinuous nursing students(70) were assessed using a standard questionnaire form Watson and Glaser. Data were analyzed using statistical software SPSS.13.00.

Results: The results showed that the difference between the scores of critical thinking skills among continuous licentiate (42.29) and bachelor- licentiate (49) nursing students were statistically significant (P-value < 0.001). With an increase in semesters, there was increase in students critical thinking skills score consistently, but not statistically significant (P-value = 0.6). Between the average and marital status with critical thinking skills, no statistically significant relationship was found.

Conclusion: Poor scores in critical thinking of nursing students in this study and other studies represent the need to review teacher's clinical teaching methods, evaluation and how to delegate tasks to the student. According to study results, the need to review how to spend course and select of clinical educators for these courses seem evident.

Key word: Critical thinking, Clinical decision making, Criticism thinking, Thinking skill

***Correspondence.** *M.Sc of nursing, Abadan nursing faculty, Ahvaz Jundishapour University of Medical sciences
Email.nttahery@gmail.com*

Introduction

Nurturing thinking skills of students has long been a challenge faced by educational systems. Nowadays, however, it is becoming increasingly critical since the society's information output has overwhelmed the power of critical thinking about this information. Recently, Pedagogues have

been becoming more and more worried about students ability to think critically (1). Although the critical thinking philosophical frame traces its roots in analytic philosophy and pragmatist constructivism which dates back over 2 500 years, it was not until early 20th century were it was given a substantial

attention(2). Critical thinking has been described in more detail as the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action (1, 3). Using critical thinking in clinical situation is extremely valuable. Making right decision in clinic mandates practical clinical knowledge, skillful gathering of information, and knowing how to utilize appropriate strategies to help the patient (4). Therefore, critical thinking skills are a necessity for health care providers, and should be integrated into all educational courses and levels(5). Since nurses are expected to make prudent decisions with respect to their patients' clinical condition, critical can help them make right choice (3).

Critical thinking can help nurses improve their capabilities in understanding patients' critical needs and promote their ability in taking appropriate methods of nursing. Currently, in Iran, apparently, critical thinking has not been given due attention by nursing educational systems. It is therefore, important to consider this short-come while planning modifications to educational systems (6). The critical thinking is a sine qua non to the nursing (7). The critical thinking should be utilized in nurturing nurses' and midwives' educational and professional skills(4).

Previous studies that examined the critical thinking with respect to nursing did so in terms of difference among students of varying educational levels or difference between working nurses and nursing students. Results of these studies showed that critical thinking capabilities is stronger among working nurses than it is among nursing student and that among students, the higher the educational level the stronger the critical thinking skills (3, 5, 8). The results, however, has not been conclusive; Kawashima et al have observed that working nurses doubted some aspects of critical thinking and in average scored less than students in terms of

critical thinking skills (9). It is not clear if nursing experiences is responsible for superiority of experiences nurses as compared to novice nurses or superiority of senior students as compared to apprentices; or is it simply because they are older and are more socially skilled.

Nurses are trained in two different educational conduits in Iran with different educational level. This provides the unique opportunity to test the hypothesis that nursing experience can increase the critical thinking capabilities since student of the two educational systems are of relative same age while provided with different levels of nursing education.

We therefore, designed and conducted a study to compare the critical thinking abilities of the bachelors and licentiate nursing students of the Abadan and Korramshahr.

Materials and Methods

This cross-sectional study was performed a convenient sample of all nursing students of the Abadan and Korramshahr who were in their spring semester of 2007-2008. Students of bachelor in nursing (4-semester or 2-year course nursing study) were recruited if they were taking their 3rd semester (22 students). Students of licentiate were recruited had they been in their 4th, 6th, or 8th semester (48 students). For measuring the critical thinking abilities of the participants, we used the Watson-Glaser Critical Thinking Test I that has been previously translated to Persian and demonstrated to be transportable to cultural, social, and clinical settings in Iran (10). Cronbach's alpha was 0.74 for drawing inferences, 0.85 for recognition of assumptions, 0.79 for deductive reasoning, 0.88 for logical interpretation, and 0.81 for evaluation of arguments. The corresponding figure for total appraisal was 0.83. The Short Form is composed of 16 scenarios and 40 items selected from the 80-item Form A. The Watson-Glaser Critical Thinking Appraisal contains 80 item questions across a series of five test exercises each containing test 16 items. A one score is assigned to each correct

answer and a zero score to each incorrect answer. As such, the total point score will be between zero and 80. Participants were assigned to three levels of weak (0-53), moderate (54-59), and strong (60-80) critical thinking abilities according to the score they achieved in their test. Data were secured by two trained interviewers. Data were analyzed using independent samples t-test, one-way analysis of variance (ANOVA), and chi-squared test, or exact fisher test, where appropriate. p-values <0.05 were considered to be statistically significant.

Findings

Participation rate was 100%, with all 70 distributed questionnaires being completed. The mean age of the participants was 231 years, with their diploma average score being 18.1. The corresponding figure for educational level in which they were studying at the time of the current study was 17.1. For student who started their licentiate levels after being granted a bachelor's degree the average score for their bachelor's degree was 17.6. Among participants, 48 (%68.8) were in licentiate level and 62 (%88.6) were single.

As shown in table 1, mean critical thinking ability score of students of bachelor (49) was higher than that of students of licentiate (42) nursing (P-value <0.001). Both groups of students have their lowest scores in drawing inferences. The highest scores observed for evaluating arguments among licentiates and for recognizing presumptions among bachelors. Mean critical thinking abilities scores of both groups were weak, although few students scored in the as high as moderate level. Majority of students' score fall into weak category. As shown in table 2, the prevalence of the weak critical thinking abilities was higher among licentiates than among bachelors (P-value <0.001).

No statistically significant difference was observed between single (44.6) and married (48.6) student with respect to their critical thinking abilities score (P-value =0.06). The distribution of different levels of critical

thinking abilities were also the same among single and married students (P-value = 0.08). As depicted in figure 1, critical thinking abilities increased with the number of semesters studied (P for trends <0.001). The mean critical thinking abilities score did differ by the educational score.

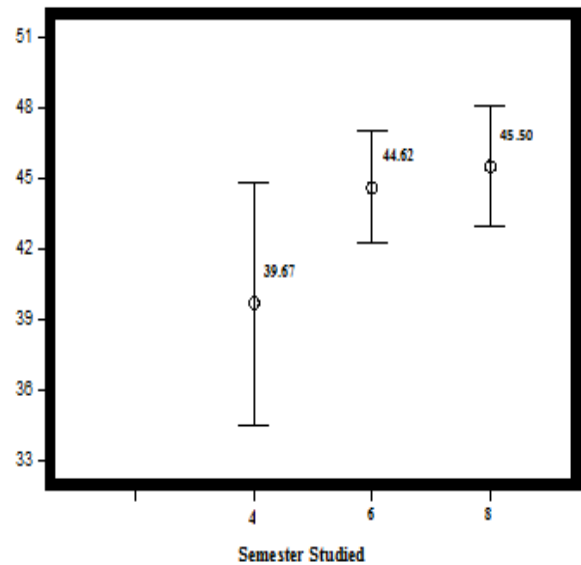


Figure 1: Critical thinking abilities with the number of semesters studied

Table 1. Comparing critical thinking abilities between continuous licentiate and bachelor-licentiate nursing students.

Critical thinking components	Continuous licentiate		Bachelor-licentiate		P value
	Average score	SD	Average score	SD	
Drawing inferences	5.12	2.16	6.45	1.30	0.010*
Recognizing presumptions	8.81	2.52	11.54	1.71	<0.001**
Deductive reasoning	8.96	2.76	9.64	2.03	0.31
Logical interpretation	9.67	2.34	11.0	1.23	0.003*
Evaluating arguments	9.73	2.47	10.36	0.64	0.210
Total	42.29	7.64	49.0	3.13	<0.001**

SD= Standard Deviation
 *Significant at 0.05 level
 ** Significant at 0.001 level

Table 2. Comparing different levels of strength of the critical thinking ability between continuous licentiate and bachelor-licentiate nursing students.

Critical thinking components	Continuous licentiate		Bachelor-licentiate		p-Value
	Frequency	%	Frequency	%	
0-53	47	97.9	21	95.5	<0.001*
54-59	1	2.1	1	4.5	0.5
60-80	0	0.0	0	0.0	-

* Significant at 0.001 level

Discussion

We documented a high prevalence of weak critical thinking abilities among students of both bachelors and licentiate nursing. The weakest area of the critical thinking was observed to be drawing of inferences among students of both bachelor and licentiate nursing. The strongest area of critical thinking was evaluating arguments for licentiate nursing students and recognizing presumptions for bachelors nursing students. As the numbers of courses and semesters taken increased so did the ability to critical thinking. Marital status and average educational score were not found to affect the critical thinking abilities.

The finding of the current study in line with those of previous studies, which reported high prevalence of weak critical thinking abilities or low mean critical thinking abilities score (2, 5, 9-11). It has been shown that weak critical thinking ability is not confined to the nursing students. Critical thinking abilities of the students of radiology and basic sciences have also been shown to be weak (2, 11).

As opposed to Babamohammadi et al, we failed to show any difference made by varying levels of educational achievements (8), the same finding has been reported by Ranjbar et al (6). It is not surprising since when education in an education system is not based on the critical thinking neither would be the examinations. Current medical science education systems are possibly based on memorizing too great deal of theoretical knowledge and retrieving then from memory for examinations, rather than based on strategies

for nurturing and cultivating the thinking process.

Salehi et al. have also reported that the more recently the student were graduated the stronger the critical thinking abilities of them (3). Whether, more recent educational systems are more compatible with critical thinking remains to be elucidated.

In contrast to previous studies (8), which used California form B for assessment of critical thinking abilities, we found that that bachelor nursing student score in average higher than did licentiate nursing students. The finding was consistent across different components of the critical thinking abilities. The distribution of the two groups were similar across differ courses and semesters of education. Therefore, different in numbers of semesters studied is unlikely to explain the difference observed between bachelor and licentiate nursing students. It has been shown that nurses with higher nursing experience are stronger in critical thinking (12, 13). Bachelor nursing students have possibly professionally practiced nursing in hospitals before starting their licentiate education. This may at least in part explain they scored higher than students who accepted from diploma to continuously study courses to licentiate nursing without ever having the opportunity to practice nursing professionally (3, 8). It is noteworthy that reports of relationship between experience and critical thinking abilities are not consistent across different studies. Both direct and inverse associations between experience and critical thinking have been previously reported (14). What makes settings in which previous studies, which found inverse association, have been conducted from ours is that previous studies' sample consisted of nurses with varying degrees of experience (14) whereas our sample included a group of student with no experience. The inverse association has been refuted by several studies. For example Salehi et al have shown than age and job experience positively affect the critical thinking abilities (3). However, Bahrami et al. have shown that as years of studying nursing increase so do the students'

strength of critical thinking ability (5). We hypothesize, therefore, that nursing educational programs might have affected the critical thinking abilities of the nursing students.

Conclusion

In conclusion, we observed that the critical thinking ability of the both direct licentiate and bachelor-licentiate nursing students is weak and that bachelor-licentiate students were stronger than their direct licentiate counterparts; the latter to be possibly due more clinical experience. It is thus, recommended that nurses with more clinical experience should be assigned to positions where critical thinking matters.

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