

## Original Research

# The study of the situation of critical thinking emotional tendency of nursing teachers

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### Highlights

Nursing teachers had a positive performance towards critical thinking emotional tendency, but not strong positive.

### Editor's Summary

The managers of universities should lay stress on the importance of critical thinking, and provide the development space to enhance the nursing teachers' critical thinking ability.

Traits	≤ 10 years	11 - 19years	≥ 20 years	F	P
Truth-seeking	36.71±5.20	40.81±2.97	44.28±3.50	4.093	< 0.001
Open-mindedness	42.33±5.41	44.76±3.37	44.67±3.22	1.724	0.043
Analyticity	43.71±5.00	45.94±3.12	48.44±3.17	1.984	0.015
Systematicity	43.44±4.65	45.03±3.18	48.50±3.87	2.517	0.002
CT self-confidence	41.40±5.00	44.23±3.87	45.89±2.27	1.438	0.126
Inquisitiveness	43.56±3.68	45.25±2.87	48.33±3.74	2.266	0.005
Cognitive maturity	41.85±4.59	44.58±2.05	45.67±2.74	2.597	0.001
Traits scores	293.00±33.53	309.99±21.33	325.78±33.51	6.247	0.005

**Citation:** Zheng XJ, Huang WD, Li MY. The study of the situation of critical thinking emotional tendency of nursing teachers. TMR Integrative Nursing, 2017, 1(1): 19-24.

**DOI:** 10.12032/TMRIN20170905

**Submitted:** 10 March 2017, **Accepted:** April 2017, **Online:** 26 May 2017.

## Abstract

Critical thinking (CT) is an important content of nursing education. It is also the important symbol of the improvement of overall quality of nursing teachers. In recent years, educational circles pay more and more attention to the cultivation of students' CT ability, take CT and solve the problem as two basic skills of thinking. In the early 1980s, critical society theory was led into the nursing field. After years of development, CT has become one of research hotspots in today's international nursing. Numerous studies had confirmed that the CT played a significant role in nursing education, clinical practice and nursing scientific research. The paper studied the whole status and characteristics of CT emotional tendency of college nursing teachers, and analyzed potential cause and discussed deeply on the corresponding factors of how to improve college nursing teachers' teaching ability and scientific ability. This research adopted random sampling method, in which questionnaires were distributed among some nursing teachers in six universities and 97 nursing teachers. The statistical results indicated that nursing teachers had a positive performance towards CT emotional tendency, but not strong positive, and there were statistical significance among nursing teachers with different age, different length of service and reading habit (all  $P < 0.05$ ). In a conclusion, the managers of universities should lay stress on the importance of critical thinking, and provide the development space to enhance the nursing teachers' CT ability and offer better services for nursing student.

**Keywords:** Nursing teachers, Critical thinking, Study

## 摘要

评判性思维（CT）是护理教育的重要内容，也是护理教师整体素质提高的重要标志。近年来，教育界越来越重视学生 CT 能力的培养，已将 CT 与解决问题并列为思维的两大基本技能。20 世纪 80 年代初关于评判性社会的理论被人们引入护理领域，经过了多年的发展，CT 已经成为当今国际护理中的研究热点之一。大量研究证实，CT 在护理教育、临床实践及护理科研中具有重要的意义。本研究通过研究了解高校护理教师评判性思维情感倾向的总体特质表现，深入分析讨论关于高校护理教师评判性思维情感倾向的相关影响因素，以简单抽样的方法对 6 所医学高校中的 97 名护理教师利用问卷调查法进行现状研究。高校护理教师的评判性思维情感倾向总体为正性表现，由于距离评判性思维情感倾向较强的特质表现还有差距则仍要努力使之进一步加强。护理教师其评判性思维情感倾向总分及其各项特质的分数在不同年龄、不同工龄、阅读能力上差异均有统计学意义(均  $P < 0.05$ )。建议高校的相关职能部门把护理教师评判性思维情感倾向的培养与提高作为工作中的重中之重，为护理教师评判性思维能力的提升创造发展空间，以更好地促进学生的评判性思维能力。

**关键词:** 新的医疗改革；中医护理；专业化

**Abbreviations:** TCM, Traditional Chinese medicine; CT, Critical thinking.

**Competing interests:** The authors declare that there is no conflict of interests regarding the publication of this paper.

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**Executive Editor:** Jing Liang.

## Introduction

Critical thinking (CT) is the process of judge and the process of reflective reasoning about the purposeful and meaningful self-regulation of nursing decision-making. CT was the basis of the thinking of clinical decision making and problem solving, and was an important part of the ability of the nursing profession [1]. At present, many scholars at home and abroad do study on nursing students' CT from the perspective of nursing education [2-4], but the related research about nursing teachers is less. The studies had shown that the CT capacity of nursing students was positive overall [5]. In order to explore if the nursing teachers' CT capacity can accomplish the cultivation of students' education and help students improve their CT ability, this study collected 97 nursing teachers who are from 6 medical colleges to implement investigation. CT can improve the quality of nursing education, so that students can better adapt to the future study and the complex clinical work. Finally, teaching and clinical practice can be combined perfectly and the nursing students provide high quality nursing service for clients.

## Object and Method

### Object

From May to December in 2012, 102 nursing teachers of 6 medical colleges accepted this questionnaires. They are all female; Age 26 to 52 years old, the average age is (35.37±7.05) years old. Basic information about the respondents were seen in Table 1. Of these 102 questionnaires, 97 were the valid questionnaires.

### Methods

The study was carried out by using the CT emotional tendency questionnaire of Chinese version (CTDI-CV)

[6]. This scale is formulated by Meici Peng who is from polytechnic university of Hong Kong and other experts of nursing education who are from Macao, Hong Kong, Taiwan and Chinese Mainland. This scale includes truth-seeking, open-mindedness, analyticity, systematicity, CT self-confidence, inquisitiveness and cognitive maturity. There are seven traits in this scale. The questionnaire contains 70 entries. Each trait contains ten items and is totally 60 points. Each trait scored 40 or more belongs to positive; each trait scored 50 or more belongs to strong positive; seven traits are totally 420 points, 280 points or more show that the CT has a tendency to positive, and 350 points or more show that the CT has a strong tendency to positive. A convenient sampling method was adopted to select the subjects randomly, arrange and number the data; put the data into the Excel and use SPSS19.0 software to statistically analyze the data; % and  $\bar{X} \pm s$  were used for statistical description; *t* test and ANOVA were used for other related factors analysis and comparison.  $P < 0.05$  indicates statistical significance.

## Results

### The situation of CT emotional tendency of college nursing teachers

**The scores of CT emotional tendency of college nursing.** Nursing teachers' CT feelings tendency scored 303.59±26.03 points, with open-mindedness, analyticity, systematicity, CT self-confidence, inquisitiveness and cognitive maturity. Each of these traits scores greater than 40 points (Table 2).

**The percentage and the number of the positive and strong positive of CT emotional tendency of college nursing teachers.** The number of positive performance of CT emotional tendency of nursing college teachers was 69 (>280 points), the percentage was 71.1% and 4 teachers showed strong positive (>350 points), the percentage was 0.4% (Table 3).

Table 1 Basic information about the respondents

Groups	Items	No.	Percentage (%)
Sex	male	5	5.2
	female	92	94.8
Age (year)	26 - 30	31	32.0
	31 - 35	28	28.9
	36 - 40	11	11.3
	41 - 45	17	17.5
	≥ 46	10	10.3
Academic qualifications	junior college	6	6.2
	undergraduate college	30	30.9
	master degree candidate	57	58.8
	doctoral candidate	4	4.1
Academic title	junior	37	38.1
	medium grade	31	32.0

Table 1: Continued.

	sub-senior	17	17.5
	senior	12	12.4
length of service (year)	≤10	48	49.5
	11-19	24	24.7
	≥20	25	25.8
Refresher experience	yes	44	45.4
	no	53	54.6
reading habit	yes	63	64.9
	no	34	35.1

Table 2 The scores of college nursing teachers' CT emotional tendency  $\bar{x} \pm s$ 

Traits	Score range	Score
Truth-seeking	18 - 53	39.42±5.70
Open-mindedness	19 - 55	43.32±4.35
Analyticity	23 - 56	45.12±4.31
Systematicity	24 - 54	44.45±4.31
CT self-confidence	17 - 52	43.13±4.92
Inquisitiveness	22 - 55	44.70±4.10
Cognitive maturity	23 - 57	43.43±3.94
Traits scores	235 - 352	303.59±26.03

Table 3 The percentage and the number of the positive and strong positive of critical thinking emotional tendency of college nursing teachers

Traits	≥40 points	Percentage (%)	≥50 points	Percentage (%)
Truth-seeking	65	67.0	2	2.1
Open-mindedness	87	89.7	3	3.1
Analyticity	86	88.7	5	5.2
Systematicity	87	89.7	3	3.1
CT self-confidence	84	86.6	3	3.1
Inquisitiveness	88	90.7	1	1.0
Cognitive maturity	83	85.6	6	6.2
Traits scores	69	71.1	4	0.4

### The scores comparison of CT emotional tendency of college nursing teachers with different age

By the analysis of variance statistics, the scores of CT emotional tendency of college nursing teachers with different age were different. The total points of the group of more than 40 years old was highest; the group of 30 years old scored lowest. By the  $q$  test, the group of more than 40 years old scored more than other groups in truth-seeking, open-mindedness, analyticity, systematicity, CT self-confidence and cognitive maturity. The group of

more than 40 years old scored less than the group of 45 years old (Table 4).

### The scores comparison of CT emotional tendency of college nursing teachers with different length of service.

By the analysis of variance statistics, the scores of CT emotional tendency of college nursing teachers with different length of service were in Table 5. By the  $q$  test, the group of more than or equal to 10 years working experience scored less than the other two groups in total

points and each traits points; the analyticity of the group of 11-19 years working experience scored highest; the group of more than or equal to 20 years working experience scored less than the group of 11-19 years working experience in open-mindedness, and its total scores and the other traits scores were more than the other two groups.

### The influence of reading habit made on CT emotional tendency of college nursing teachers

By the *t* test, the total scores of college nursing teachers of having reading habit was more than the college nursing teachers without reading habit; the other six traits scores of the teachers who had reading habit was also more than the teachers without reading habit excepted CT self-confidence. The difference has statistic significance (Table 6).

**Table 4 The scores comparison of critical thinking emotional tendency of college nursing teachers with different age**

Traits	26-30 years	31-35 years	36-40 years	41-45 years	≥46 yaers	F	P
Truth-seeking	34.68±6.35	40.07±3.96	41.55±1.69	42.41±2.72	44.90±3.67	5.139	<0.001
Open-mindedness	41.74±6.39	43.64±2.41	43.64±3.35	45.00±3.04	44.10±2.13	2.216	0.005
Analyticity	42.47±5.10	45.32±2.94	45.36±2.77	46.65±2.91	48.70±2.75	2.423	0.002
Systematicity	42.19±4.26	44.89±1.83	44.82±2.54	45.71±2.14	46.50±2.99	2.715	0.001
CT self-confidence	40.55±7.08	43.32±2.70	43.82±1.99	45.06±2.84	46.60±2.46	2.819	<0.001
Inquisitiveness	42.71±5.23	44.71±2.80	45.46±2.98	46.35±2.47	46.20±4.16	4.460	0.002
Cognitive maturity	40.58±5.15	44.36±2.09	44.27±1.68	45.06±1.82	46.00±3.40	2.690	0.001
Traits scores	265.7±41.36	306.31±18.73	308.92±16.00	316.54±17.94	323.00±21.56	8.002	0.001

**Table 5 The scores comparison of critical thinking emotional tendency of college nursing teachers with different length of service**

Traits	≤10 years	11-19years	≥20 years	F	P
Truth-seeking	36.71±5.20	40.81±2.97	44.28±3.50	4.093	<0.001
Open-mindedness	42.33±5.41	44.76±3.37	44.67±3.22	1.724	0.043
Analyticity	43.71±5.00	45.94±3.12	48.44±3.17	1.984	0.015
Systematicity	43.44±4.65	45.03±3.18	48.50±3.87	2.517	0.002
CT self-confidence	41.40±5.00	44.23±3.87	45.89±2.27	1.438	0.126
Inquisitiveness	43.56±3.68	45.25±2.87	48.33±3.74	2.266	0.005
Cognitive maturity	41.85±4.59	44.58±2.05	45.67±2.74	2.597	0.001
Traits scores	293.00±33.53	309.99±21.33	325.78±33.51	6.247	0.005

**Table 6 The influence of reading habit made on critical thinking emotional tendency of college nursing teachers**

Traits	Reading habit (n=63)	No reading habit (n=34)	t	P
Truth-seeking	40.23±4.76	36.83±6.55	9.429	0.003
Open-mindedness	44.07±3.47	40.91±5.37	10.298	0.032
Analyticity	46.49±2.67	42.30±5.95	8.039	0.006
Systematicity	44.88±4.74	43.09±5.94	5.298	0.024
CT self-confidence	43.91±3.22	40.65±7.91	3.795	0.054
Inquisitiveness	45.92±4.72	41.22±5.38	5.545	0.021
Cognitive maturity	44.23±3.84	40.87±5.67	7.957	0.006
Traits scores	309.72±19.89	285.87±39.34	10.226	0.008

## Discussion

Nursing teachers' score of the CT ability was  $(303.59 \pm 26.03)$  points, more than or equal to 280 points. This shows that, the CT emotional tendency of college nursing teachers is positive, the result is similar to the result of Hong Xu [7]. The level of CT emotional tendency of college nursing teachers is low by comparing with the result of Christy [8]. The seven traits scored more than 40 points except truth-seeking, fully embody that the overall nursing teachers' ability of CT is better. The truth-seeking scored a bit low, this indicates that teachers treat the truth and the objectivity of knowledge is not enough in teaching process, the fixed thinking mode restricts properties of teachers for teaching material and teaching method; Analyticity scored the highest, which indicates that teachers need the ability of facing and accepting all kinds of questions that students ask for in the teaching process at any time, this proposes a higher level requirement for the teachers ability to analyze the question, teachers only have the sensitivity to the potential problem, can they transmit wisdom, impart knowledge and solve doubts better for the students. The statistical results showed that 71.1% nursing teachers had a positive performance towards CT emotional tendency, 0.4% nursing teachers had a strong positive performance towards CT emotional tendency. These show that the level of CT emotional tendency of college nursing teachers should be improved.

The results showed that the ages was one of the influence factors of CT emotional tendency of college nursing teachers. The group of 46 years old scored highest. The main reason is with the increacing of age, a person can accumulate social experience and abundant life experience. It can make his/her own analyticity and cognitive maturity improve.

The results showed that nursing teachers with more than or equal to 20 years working experience scored  $(325.78 \pm 22.51)$  points. This indicates that the growing of the length of nursing teaching makes their woking experience abundant, and have a deep understanding about educational aim and educational mode. Moreover, the increasing of the length of woking can make teachers have more chance to do academic communication and study in depth. This learning process can also improve CT ability of the nursing teachers.

The college nursing teachers of having reading habit scored  $309.72 \pm 19.89$  points and the results of six traits (truth-seeking, open-mindedness, analyticity, systematicity, inquisitiveness, cognitive maturity) have statistic significance. This indicates that reading is very necessary to promote CT. Good reading habits make contribution to the ability of CT [9], and is helpful to develop thinking habit. One can get more information from reading books, improve analyticity and maturity and provide the basis for self-examination and reasoning. Reading habit can promote CT step by step.

One research showed that, the same course has the same influence on college students' CT, but the same

course taught by different teachers will have the different effects on students' CT [10]. one study found that, the changes of students' CT is closely related to the changes of teachers' teaching behavior [11]. These descriptions indicate that the CT ability of nursing teachers influences students directly. Strengthening nursing teachers' ability of logical thinking and thinking mode training can improve the quality of classroom teaching effectively and help students improve the ability of CT.

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