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CRITICAL THINKING DISPOSITIONS AMONG STUDENT OF MOSUL'S NURSING COLLEGE

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ABSTRACT

Background: The aim of the study was to measure critical thinking dispositions among nursing student at college of Nursing, University of Mosul, Republic of Iraq, and to determine relationship between student's gender and academic level with critical thinking dispositions.

Methods: A cross sectional design was applied in the present study which was conducted at the College of Nursing, University of Mosul, Iraq. The subjects of this study consisted of 50% of the total number of students of each academic level comprising (300) students. The data were collected between January and March 2014 using the California Critical Thinking Disposition Inventory.

Results: The mean age of the Mosul Nursing Students were (28.2) years. The mean value of the total CCTDI score was 287, showing a positive inclination towards critical thinking. Four of the seven subscale mean scores were above 40, the recommended cut-off score, also showing a positive inclination.

Recommendation: Based on the findings of the present study, it is recommended that Nurse Educators should be stimulated to use student-active learning models and be alert of the correlation between teaching strategies and critical thinking.

Keywords : Critical thinking, nursing students, nursing college

INTRODUCTION:

Learning styles are central paradigms in educational psychology within any discipline, representing typical cognitive and affective behaviors which control the cooperation of each individual in learning locations or settings (Cassidy, 2004; Armstrong *et al.,* 2012). A diversity of theoretical models have presented learning styles and their psychometric aspects. A large body of research provides evidence that college students can involve significant gains in critical thinking. College students have higher critical thinking skills than non-college students. It is the capability of the college itself that has presented to growth of critical thinking (McMillan, 1987). Critical thinking also improves with education level (Onwuegbuzie, 2001). Findings have verified that critical thinking is considerably and clearly linked with academic achievement (Jenkins, 1998; Facione *et al*., 1998; Collins and Onwuegbuzie, 2000). However, critical thinking is often perceived as a common goal of higher education but is rarely set as an outcome. Therefore, not many studies can be found to relate other variables as predictors of critical thinking skills in educational setting because most studies used academic achievement or GPA as student outcome. However, the positive and substantial relationship between critical thinking skills and achievement can be considered as an indirect indication of both critical thinking and academic achievement taking the role of student outcomes. There are three sets of factors that may affect students' dispositions toward critical thinking; characteristics of teachers, characteristics of learners and the educational strategies that both teachers and learners apply. Critical thinking is a desirable educational outcome. So to develop and practice CT, educators need to re-consider course content and curricular strategies used to develop CT. (Lee *et al.,* 2000; Girot, 2000; Kawashima and Petrini, 2004). So, this study aimed to measure the critical thinking dispositions among the nursing students.

MATERIAL AND METHODS

A cross sectional study was applied in the present study which was conducted at the College of Nursing, University of Mosul, Iraq. The subjects of this study consisted of approximately half of the total number of students of each academic level comprising (300) students. First stage, n=80; Second stage, n=70; Third stage, n=60; Forth stage, n=90. The students were selected using the systematic random sampling method. The California Critical Thinking Disposition Inventory (CCTDI) (Facione and Facione, 1992) was used to determine students' critical thinking dispositions or habits of the mind. The CCTDI is a 75 items likert format tool, each subscale assesses one of the seven dispositions of critical thinking, namely; truth seeking (12 items), open-mindedness (12 items), analyticity (11 items), systematicity (11 items), self-confidence (9 items), inquisitiveness (10 items) and cognitive maturity (10 items). For each of the seven subscales a student's score on the CCTDI may range from a minimum of 10 points to a maximum of 60 points.

Scores are interpreted utilizing the following guidelines. A score of 40 points or higher indicates a positive inclination or affirmation of the characteristic; a score of 30 or less indicates opposition, disinclination towards the same characteristic. A score in the range of 31-39 points indicates ambivalence towards the characteristic. An overall score on the CCTDI can be computed by summing the seven subscale scores. Overall CCTDI scores may range from a minimum of 70 points to a maximum of 420 points. Similar interpretative guidelines are used when looking at overall CCTDI scores: a total score of 280 points or higher indicates a positive overall disposition towards critical thinking, whereas a total score of 210 or lower indicates the negative disposition towards critical thinking. A score in the range of 211-279 indicates ambivalence toward critical thinking. Each of the 75 items includes a forced choice six point likert scale ranging from strongly agree (1) to strongly disagree (6). A reversed scoring is allotted to negative statements. Permission to conduct the study was obtained from the College of Nursing, University of Mosul. California Critical Thinking Disposition Inventory (tool I) was translated into Arabic and adopted to suit the Iraqi culture by the researcher. The Tool was submitted to a panel (10 members) composed of experts in the field of nursing from the faculty of nursing staff members. They were asked to judge completeness and accuracy of the content of the tools. Reliability of the tool was tested for their internal consistency using Cronbach Alpha reliability test. The coefficient values were 0.83. Subjects were selected using the systematic random sampling method by selecting the fourth name from random lists that were previously prepared by the students' affairs department. Pilot study was conducted by the researcher to test the clarity and applicability of the tools on 80 students (20 students from each academic level). Tools were reconstructed and put in its final form. The researchers explained the purpose of the study, and then assured them that their responses would be kept confidential. Student's consent to respond to the questionnaire was obtained. Data was collected by the researcher, using the questionnaire method over a period of 3 months from the beginning of January to 20th of March 2014. Data was coded and computerized and statistical analysis was conducted using SPSS version 18. Descriptive statistics were done using numbers, percentages, arithmetic means and standard deviations. Analytical statistics was conducted.

RESULT

The mean age of the Mosul Nursing Students were 28.2 years. Critical thinking dispositions in the study subject are presented in (Table 1). The mean value of the total CCTDI score was 287, showing a positive inclination towards critical thinking. Four of the seven subscale mean scores were above 40, the recommended cut-off score, also showing a positive inclination. The highest-rated mean score was found on the open-mindedness subscale (44.4), characterizing an intellectual curiosity and desire for learning, and the lowest-rated mean score on the Truth-seeking subscale (33.2), indicating ambivalence related to seeking the best knowledge and courage to ask questions. When comparing critical thinking dispositions between males and females a statistically significant greater proportion of the former group reported high values on the Analyticity subscale and total scores. (Table 2). A statistically significant greater proportion of students in 4th stage than 1st and 2nd stages reported high CCTDI total scores (Table 3). This was also the case for the CCTDI subscales Truth-seeking, Systematicity and Inquisitiveness.

Table 1: Critical thinking dispositions (CCTDI total- and subscale scores)

CCTDI scores	Mean	SD	*r*
Truth-seeking	33.2	0.4	0.70
Open-mindedness	44.4	1.2	0.86
Analyticity	42.1	0.6	0.84
Systematicity	33.8	0.1	0.68
Self-confidence	41.1	0.9	0.79
Inquisitiveness	34.2	0.3	0.67
Maturity	41.6	0.7	0.77
Total score	287	2.1	0.81

Table 2: Mean scores of CTDs of Nursing students in relation to their gender

CCTDI scores	Male		Female		T	P
	Mean	SD	Mean	SD		
Truth-seeking	33.1	0.9	33.2	0.1	0.4	0.2
Open-mindedness	44.4	1.1	44.1	1.4	1.1	0.1
Analyticity_	42.5	0.9	44.3	0.4	3.2	0.5
Systematicity	33.2	0.3	33.5	0.4	0.9	0.01
CT self-confidence	40.1	0.2	40.3	0.7	0.3	0.3
inquisitiveness	34.2	0.5	34.2	0.1	0.8	0.3
Maturity	40.6	0.4	42.2	0.2	1.5	0.2
Total score	282	1.3	285	1.7	4.1	0.5

Table 3: Mean scores of CTDs of Nursing students in relation to their academic stages

CCTDI scores	1st	2nd	3rd	4th
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Truth-seeking	30.3 (0.1)	32.2(1.4)	33.6 (1.6)	35.4 (0.4)
Open-mindedness	41.1(1.1)	42.5(0.8)	45.1(0.3)	49.6(0.2)
Analyticity_	39.3(0.9)	40.2(0.6)	43.6(1.2)	47.1(0.7)
Systematicity	31.8(0.2)	33.3(1.3)	35.9(1.4)	38.8(0.1)
CT self-confidence	38.1(0.6)	39 (0.2)	40.2(0.7)	44.1(0.4)
Inquisitiveness	30.1(1.4)	34.4(0.9)	34.9(0.5)	37.2(0.8)
Maturity	33.2(0.4)	34.6(0.8)	46.1(0.1)	47.8(0.3)
Total score	281(1.1)	283(1.3)	283(0.4)	285(1.5)

DISCUSSION:

This study concentrated on critical thinking dispositions among nursing students. Improvement of critical thinking dispositions is vital to enable nursing students to be as professional nurses in future (Thorpe and Loo, 2003), and an ideal critical thinker has been described as inquisitive, well informed, open-minded, willing to reconsider and orderly in complex matters (Facione 1990). This description might well be a description of the 'ideal' nurse. When the results regarding students' critical thinking disposition distributions are deliberated, mean scores indicated that the critical thinking dimensions of Open-mindedness and Analyticity are the top two criteria. Low critical thinking dispositions are Inquisitiveness and Systematicity. According to these findings, it can be assumed that the student in the study have the tendencies of being alert towards circumstances that lead to possible problems, using logic and objective evidence in problematic conditions (Analyticity), and also have the tendencies of being open-minded i.e., open-minded to different approaches and sensitive towards own faults (Open-mindedness). The fact that Inquisitiveness and Systematicity dimensions were found low in terms of exhibiting the required behaviours, it can be believed that nursing student are hesitant to show intellectual inquisitiveness behaviours such as acquiring and learning new things without expectations regarding benefits, and behaviours related to systematic, organized, planned and cautious researching. These findings are consistent with Mc Carthy, 2001; El Hessewi, 2003. These indicated that the nursing students have the disposition of being alert to potentially problematic situations, anticipating possible results or consequences, prizing the application of reasons and the use of evidence if the problem in hand turns out to be challenge or difficult. Furthermore, when comparing the results of present study to previous studies including nursing students, our students scored lower than US, Canadian nursing students (May *et al*. 1999, Profetto-McGrath 2003), Hong Kong, Australia (Tiwari *et al*. 2003) and Turkey (Ozturk *et al*. 2008). Total CCTDI score in the present study was lower than that reported in Japanese study (Kawashima and Petrini, 2004), and US nurses (Facione and Facione 1997, Smith-Blair and Neighbors 2000). These findings might reflect the cultural differences. Low scores on the Truth-seeking subscale may be seen in students who are unwilling to re-evaluate new information, and who base their nursing on 'how things always have been done' (Smith-Blair and Neighbors 2000). Other authors have also reported the lowest mean scores for this subscale (May *et al*. 1999; Smith-Blair and Neighbors 2000, Profetto-McGrath *et al*. 2003, Tiwari *et al*., 2003). Further, Walsh and Hardy (1999), who studied students on six academic programs, reported the lowest mean score (below 40) for the Truth-seeking subscale. Remarkably, the results also revealed that, the nursing

students mean scores were positive in inquisitiveness, which refers to the person's intellectual interest and desire for learning. The inquisitive person is willing to learn more, he/she is one who desires to see how things work and values learning even if the immediate pay off are not directly evident. These results were supported by Redding, 1999 who deliberated up-to-date knowledge as an important component of critical thinking . The nursing students interest to increase their knowledge base becomes a must when evidence based practice based on standards is applied. Another reason that motivates the nursing students to look for knowledge and to strengthen their scientific base is their intense need to improve their image in the health care field as the knowledge base provides the students with sense of empowerment. Walsh and Hardy (1999) reported no statistically significant gender differences with respect to CCTDI total score or subscale scores. In contrast to findings in some other studies that women scored statistically significant higher than men on the Open-mindedness and Maturity subscales (Facione and Facione1997, Giancarlo and Facione 2001), no such gender differences were found in the present study. However, there were statistically significant more males than females with high scores on the Analyticity subscale, which is a finding in line with that of Giancarlo and Facione (2001). Despite the gender differences reported, Giancarlo and Facione (2001) claim that males and females are notably similar with respect to critical thinking. Regarding the CTDs of the nursing students in relation to their academic level; as, regards to truth seeking, which is the courageous desire for the best knowledge even if such knowledge fails to support or determine one's preconceptions is beliefs or self-interest. The mean score of this dispositional characteristic was the highest among the fourth year students. This finding is consistent with the finding of Lee and Young, 2006, in their study to examine critical thinking disposition in baccalaureate nursing students. Findings of this study were supported by those of Mc Carthy *et al*., 1999; Bartlett and Cox, 2000, Tiwari *et al*., 2003; Profetts-McGrowth, 2005; Shin *et al*., 2006. These findings revealed that the seniors got the significantly highest mean of the overall CCTDI. In contrast, the findings of El Hessewi, 2003; Brunt, 2005; Ward, 2006 revealed that the senior level students got the lowest mean of total score of CTDs.

RECOMMENDATION

Based on the findings of the present study, it is recommended that, Nurse Educators should stimulated to use student-active learning models and be alert of the correlation between teaching strategies and critical thinking. Annual assessment of students' CTDs using the CCTDI is submitted for the choice of educational strategies that reinforce the positive dispositions and modification of the undesirable and indecisive ones towards the positive inclination. Also, a longitudinal study that evaluates students' critical thinking dispositions throughout the four years of the nursing program should be conducted to determine the developmental process of CTDs.

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