

Critical thinking disposition, problem solving process, and empathy among Nursing Students

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Abstract The purpose of this study was to examine the relationships between nursing students' empathy and their critical thinking disposition and problem solving process. For this purpose, 246 nursing students were surveyed using a structured questionnaire on their empathy, critical thinking disposition, and problem solving process. According to the results of data analyses, the subjects' critical thinking disposition was in a positive correlation with their fantasy, perspective taking, and empathetic concern, and in a negative correlation with personal distress among the sub-categories of empathy. In addition, their problem solving process was in a positive correlation with fantasy, perspective taking, empathetic concern, and critical thinking disposition, and in a negative correlation with personal distress. For nursing students with a high level of personal distress, it is necessary to guide their critical thinking and problem solving process during their clinical practice.

Keywords: Nursing students, Critical thinking, Problem solving, Empathy

1 Introduction

One obvious objective of nursing education is to foster professionals with the ability to solve health related problems. Nursing students should collect data that is meaningful with regard to health related problem and train their ability to solve problems using the scientific method. The situation experienced by nurses in the field is complex and is mainly associated with the patients' health. Therefore, critical thinking or problem solving ability to solve the encountered problems is critically important in nursing practice.

Critical thinking involves making a judgement when determining to receive or accept an opinion for problem solving and decision making [1]. In a previous study, the critical thinking disposition of nursing students showed positive correlation with problem solving ability [2], and the critical thinking tendency was reported as influence factor of clinical practice competency [3]. Therefore, critical thinking, clinical practice competency, and problem solving ability should be considered all together in nursing education.

On the other hand, empathy is mainly addressed in nursing. Empathy is the ability

to understand another person's feelings, thoughts, and situation from the other person's viewpoint and position [4]. It is obvious that empathy plays a key role in communication and interpersonal relations [5]. It was reported that empathy critically affects people's internal responses and decision-making such as stress management strategy [4] or interpersonal relationship [6].

For critical thinking disposition, it should be communicated with others in the process of finding the best solution. Interpersonal relationship also is considered a crucial variable in clinical practice competency or problem solving [3]. Empathy can affect the critical thinking disposition or problem solving process in complex situations, but such a study that confirms this finding is rare

The purpose of this study is to determine the relationship between empathy, critical thinking tendency, and problem solving process in nursing students

2 Method

2.1 Study population

The data were collected using structured questionnaires for 246 nursing students from April 1, 2015 to May 31, 2015.

2.2 Measurements

2.2.1 Empathy

Empathy was examined using the Korean version of IRI (Interpersonal Reactivity Index) which had been originally developed by Davis (1980), and revised by Kang et al. [7]. Korean version IRI consists of 28 questions, 4 sub-categories including Perspective Taking (PT), Fantasy (FS), Empathic Concern (EC), and Personal Distress (PD); each question has a 5 point Likert scale. In development of a Korean version of IRI [7], Cronbach's alpha for Perspective Taking was .61, Fantasy .81, Empathic Concern .73, and Personal Distress .71; those values were .71, .74, .60, and .77 by these categories in this study.

2.2.2 Critical thinking disposition

Critical thinking disposition was measured using a critical thinking tendency measuring tool in nursing developed by Yoon [8]. This tool has a 5 point Likert scale consisting of 27 questions. Reliability and validity were verified in the process of developing instrument. Cronbach's alpha was .86 in this study.

2.2.3 Problem solving process

Problem solving process was measured using problem solving process measurement tools for adults developed by Lee et al. [9]. This tool has a 5 point Likert scale consisting of 30 questions. The reliability of tool had been .93 of Cronbach's alpha during development, was .94 in this study.

2.3 Analysis

Descriptive statistics, t-test, ANOVA (Duncan), and Pearson Correlation Coefficient were used for data analysis. The reliability of instruments was shown by Cronbach's alpha.

3 Results

3.1 Critical thinking disposition, problem solving process and empathy among subjects

Critical thinking disposition and problem solving process were, 3.41 and 3.45 respectively. Empathy of subjects for Perspective Taking was 3.50, Fantasy 2.63, Empathic Concern 3.63, and Personal Distress 3.03.

3.2 Correlation among critical thinking disposition, problem solving and empathy

Critical thinking disposition of subjects showed positive correlation with Perspective Taking ($r=.482, p<.001$), Fantasy ($r=.227, p<.001$), and Empathic Concern ($r=.195, p=.002$) and negative correlation with Personal Distress ($r=-.331, p<.001$). Problem solving process showed positive correlation with Perspective Taking ($r=.481, p<.001$), Fantasy ($r=.253, p<.001$), and Empathic Concern ($r=.695, p=.001$) and negative correlation with Personal Distress ($r=-.286, p<.001$) [Table 1].

Table 1. Correlation among empathy, critical thinking predisposition, and problem solving process of nursing students (N=246)

	Fantasy	Perspective taking	Empathic concern	Personal distress	Critical thinking disposition
Perspective taking	.232 (.000)				

Empathic concern	.421 (.000)	.462 (.000)			
Personal distress	.163 (.010)	-.150 (.019)	.155 (.015)		
Critical thinking disposition	.227 (.000)	.482 (.000)	.195 (.002)	-.331 (.000)	
Problem solving process	.253 (.000)	.481 (.000)	.231 (.000)	-.286 (.000)	.695 (.000)

4 Discussion

Empathy of subjects was 3.50 for perspective taking, 2.63 for fantasy, 3.63 for empathic concern, and 3.03 for personal distress, and turned out similar in comparison with previous study which had measured by the same instrument for nursing students [5],[10]. Critical thinking disposition of nursing students was 3.41 in general, which was similar compared with the value reported by Yang [2], investigated with the same instrument for nursing students and lower than the previous result of 3.67 [11]. On the other hand, problem solving process was lower, showing 3.45, compared with the result of Kim et al.[11] showing 3.76. There was a positive correlation between critical thinking disposition and problem solving process [12]. The reason this study result was lower than the one reported by Kim et al. seems that critical thinking disposition was lower than the result reported by Kim et al. [11]

Critical thinking disposition of subjects showed positive correlation with perspective taking, fantasy, and empathic concern, and negative correlation with personal distress in empathy. The problem solving process showed positive correlation with perspective taking, fantasy, empathic concern, and negative correlation with personal distress. Critical thinking disposition and problem solving process were consistent with the previous study results showing positive correlation [11],[12].

Interpersonal Reactivity Index, instrument for examining levels of empathy is a multidimensional measurement. It includes cognitive empathy (perspective taking, fantasy) and affective empathy (empathic concern, personal distress). As a result of previous study, sub-categories of IRI have a different effect on diverse variables such as interpersonal relations, stress perception/management, and smartphone addiction [4],[5],[13].

In addition, students who have high level of perspective taking select active coping strategy, while, if empathic concern and personal distress was high, they had wishful thinking coping strategy [4]. In other words, if cognitive empathy is high, thinking and coping with the problem is active; on the other hand, it can be considered that the higher affective empathy, showed the relatively passive coping strategy or tendency not to face the problem. In results of this study, personal distress showed negative correlation with critical thinking disposition and problem solving process as well.

Although direct comparison is difficult due to the insufficient investigation of the previous study regarding empathy, critical thinking, and problem solving process, it can be identified that there are different impacts according to sub-categories of empathy on critical thinking and problem solving process. Subsequent study should include investigation of the pathway empathy impacting critical thinking and problem solving process. Furthermore some guiding instructions are needed to be given to assist critical thinking and problem solving process when nursing students are in high level of personal distress.

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