

A STUDY ON THE KNOWLEDGE, ATTITUDE, CONFIDENCE IN PERFORMANCE AND PRACTICE OF NURSING COLLEGE STUDENTS ON PATIENT SAFETY MANAGEMENT

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Abstract— This descriptive study was conducted to investigate on nursing college students' level of patient safety management during the pediatric nursing clinical practice courses. This study aimed to provide a baseline data for developing systematic nursing educational curriculum for the enhancement of competence in nursing college students' fundamental patient safety nursing intervention.

The participants consisted of 372 senior nursing college students who have had clinical practice at a nursing college in Gwang-ju metropolitan city. The data was collected from December 1st to 28th in 2019 at the end-point of their clinical training education in nursing college, and convenience sampling was the method of investigation for this research. For the assessment of knowledge about patient safety management (PSM-K), instrument modified by Choi & Lee (2015) from Park & Park (2014) was used. The instrument for attitude towards patient safety management (PSM-A) assessment was by Chenot & Daniel (2007), for confidence when in performance towards patient safety management (PSM-CP) by Park (2011), and in practice for protection towards patient safety management (PSM-P) by Yoo & Lee (2014). The collected data was analyzed with SPSS 19.0 using descriptive statistics, t-test, One-way ANOVA, and Scheffé test.

The results of this study indicated that the ratio of correct answers of PSM-K was 7.30 out of 10, PSM-A was 3.76, PSM-CP was 3.92, and PSM-P was 4.21 out of 5 points. And also in terms of the correlations between PSM-K, PSM-A, PSM-CP, and PSM-P, significant positive correlations existed between PSM-K and PSM-A ($r=.28$, $p<.001$), PSM-CP and PSM-K ($r=.19$, $p<.001$), PSM-CP and PSM-A ($r=.48$, $p<.001$), PSM-P and PSM-A ($r=.37$, $p<.001$), and PSM-CP and PSM-P ($r=.36$, $p<.001$).

Therefore, in order to enhance nursing college students' competence in patient safety nursing intervention, nursing college students must experience various exercises and training for patient safety management during the clinical practicum as well as with scenario-based simulation. And nursing education facilities should develop educational contents about patient safety for nursing college students.

Keywords— Patient Safety, Safety Management, Nursing College Student

1. INTRODUCTION

A medical institution is obliged to provide its patients medical services of the highest level of safety and quality [1]. However, because of increased change during the progress

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of medical service and complexity, superfluous health care information, patients' increasing expectations of a perfect treatment result, increased medical severity and vulnerability of the patients visiting health care facilities, patient safety is being threatened during the process of being provided with medical service [2].

Patient safety accidents occurring in hospitals include, regardless of the damage on the patient, all sorts of errors, mistakes, accidents, eventually leading to considerable expenses, such as decrease in healthcare quality and financial loss [3]. In this context, patient safety is, first of all, chosen as a basic and indispensable element for a nursing care of high quality [4]. Recently, for the settlement of patient safety culture, not only technical aspects, such as regulations, guidelines, or structured system programming regarding patient safety management, but also reinforcing the awareness about patient safety of healthcare providers through a fundamental change on perception are increasingly required [5]. Patient safety management is a responsibility of not only healthcare facilities, but also of all people associated with patient safety management in the institution, where nurses are of big importance [6]. Nurses take care of patients for a whole day in hospitals, and as an expert who sensitively perceive problems associated with patient safety management, interest and awareness plays an important role on improving patient safety [7].

A nursing education institution ensures students to receive alongside with theoretical education, practical education, which enables students to be in actual contact with patients in order to produce nursing college students who has competency in clinical practice [8]. Nursing college students are directly concerned with patient safety, since they perform not only interviewing the patients, supporting transfer, and monitoring vital sign check during clinical practice training, but also fundamental nursing practice under the supervision of an experienced nurse[2]. Therefore it is necessary to reinforce patient safety management knowledge and attitude, and to enhance confidence when in performance related to patient safety management knowledge practice of nursing college students [6].

Through this, nursing college students are expected to perform nursing care safely during the clinical practice training for 2 years, and, after graduating, by habituating themselves to patient safety management, they will grow up being a healthcare provider who performs patient safety management practice appropriately, putting patient safety management at the forefront [9]. The knowledge about patient safety management is a knowledge which nurses must acquaint themselves in order to protect patients from harmful dangers [10], and this knowledge affects patient safety management performance [11]. In particular, confidence in performance an individual nursing college student has promotes the learning process of the individual by improving problem solving ability of the student, and also by assisting the acquisition of knowledge, attitude and skill necessary in clinical fields [12, 13]. Therefore, in order to enhance patient safety management practice, it seems vital to learn the right knowledge about patient safety management, to form a positive attitude towards patient safety management, and to enhance confidence in performance so as to promote the above written process [9].

Accordingly, this research aims to confirm the knowledge about patient safety management, the attitude towards this subject, the confidence when in performance of nursing college students, the behaviors for patient safety management, and to grasp the relevance between them, therefore to provide the basic evidences to develop a curriculum for the enhancement of patient safety management capability of nursing college students.

Therefore this research conducted investigates the knowledge about patient safety management, the attitude towards the subject, confidence when in performance, and behaviors for patient safety management; the specific objectives are as follows.

- 1) Investigation of knowledge about patient safety management, the attitude towards this subject, confidence when in performance and the degree of patient safety management behaviors.

2) Investigation of the difference between knowledge about patient safety management, the attitude towards this subject, confidence when in performance and the degree of patient safety management behaviors by general and characteristics of safety management.

3) Analyzation of correlations among knowledge about patient safety management, the attitude towards the subject, confidence when in performance and the degree of patient safety management behaviors.

2. METHOD

2.1. RESEARCH DESIGN

The study is a descriptive survey aimed to measure nursing college students' degree of knowledge, attitude towards this subject, confidence when in performance and practice on patient safety during pediatrics nursing practice clinical courses.

2.2. DATA COLLECTION

Using G*Power 3.1.2 for power analysis, the power was .85 for linear multiple regression analysis, a medium effect size of .20, and a significance level of .05. The sample size of 218 was satisfactory to identify the affecting factors.

The study sample consisted of 372 senior nursing college students who have had pediatrics nursing practice clinical courses in nursing schools(A, B, C, D) in G metropolitan city. The subjects were selected by convenience sampling and volunteered to participate.

2.3. RESEARCH INSTRUMENT

2.3.1. PSM-K (KNOWLEDGE ABOUT PATIENT SAFETY MANAGEMENT): The questionnaire was designed to measure degree of nursing college students' knowledge about patient safety management. The PSM-K refers to the measured score with the tool, which was reorganized to suit nursing college students by Choi & Lee [14], based on the nursing college student's knowledge measurement tool developed by Park & Park [2], taking reference from researches by IPSG(International Patient Safety goal) and Flin et al [15]. The tool consists of 10 items, and the answerer is asked to respond Yes, No, or No idea. Yes answers count for 1 point, No and No idea count for 0, and the points from 10 items are summed up.

2.3.2. PSM-A (ATTITUDE TOWARDS PATIENT SAFETY MANAGEMENT): PSM-A was developed by Chenot & Daniel [16]. The PSM-A consists of 16 items based on awareness, attitude, method when coping with medical errors, which are rated on 5-point Likert scale (1=absolutely not, 5= absolutely yes), and average scores were used. A higher average scores indicated a higher PSM-A. The questionnaires were found to have a Cronbach's α of .66, thus confirming the reliability and homogeneity of the questionnaire.

2.3.3. PSM-CP (CONFIDENCE WHEN IN PERFORMANCE TOWARDS PATIENT SAFETY MANAGEMENT): PSM-CP is a tool revised and complemented by Park and Park [2], taking reference from Patient Safety/Medical Fallibility Assessment Curriculum Survey and IPSG(International Patient Safety Goal) developed by Madgisky *et al.*, [17] for the assessment of knowledge about patient safety management, the attitude towards the subject, and medical affiliated college students' ability during performance.

The 10 questions asked the nursing college students about response to medical errors, accurate patient identification during clinical practice, reducing healthcare associated infections, and nursing interventions for a lower fall risk.

The reliability of the tool was, according to Cronbach's α , of .85 by Park & park [2], and Cronbach's α .87 in this study.

2.3.4. PSM-P (PRACTICE FOR PROTECTION TOWARDS PATIENT SAFETY MANAGEMENT): The questionnaire was designed to measure the degree of nursing college students' practice for protection of patient safety from medical accidents or errors. The questionnaire was developed to measure the extent of nursing college students' PSM-P, Kim et al [18] tool for measuring patient safety management practice and the elements of the international patient safety goals outlined by JCI (Joint Commission International). And PSM-P means the scores measured by Yoo & Lee [19] using a tool that has been reorganized to measure the degree of patient safety management practice for nursing college students based on tool of Kim et al[18]. The PSM-P consists of 15 items which are rated with 5-point Likert scale (1=absolutely not, 5= absolutely yes), and average scores were used. A higher average scores indicated a higher practice of PSM. The questionnaires were found to have a Cronbach's α of .91, thus confirming the reliability and homogeneity of the questionnaire.

2.4. DATA COLLECTION PROCEDURES

The data were collected from December 1st to 28th, 2019. Before starting the study, approval was obtained from the institutional review board of nursing college of G University. For data collection, researchers visited each nursing education institution, explained the objectives of the study, received his/her permission to collect data, and obtained data.

2.5. DATA ANALYSIS

The collected data were analyzed using SPSS statistics version 19.0. Descriptive statistics (frequency & percentile) were used to report participants' general characteristics. And nursing college students' knowledge, attitude, confidence in performance, and practice of patient safety management was calculated by mean score and standard deviations. Knowledge, attitude, confidence in performance, and practice of patient safety management depending of characteristics of the participant were analyzed t-test or one-way ANOVA. Post - test of different groups was followed by Scheffé test.

2.6. ETHICAL CONSIDERATIONS

The researcher contacted A, B, C, and D nursing college and obtained permission to recruit participants. The participants were informed about the purposed of the survey and asked to sign a written consent form. The survey was then completed anonymously. Participants' personal information were coded and encrypted for statistical analysis, and only the researcher had access to the data.

3. RESULTS

PSM-K (Knowledge about Patient Safety Management) showed significant quantitative correlation with PSM-A (Attitude towards Patient Safety Management)($r=.28$, $p<.001$), PSM-CP(Confidence when in Performance towards Patient Safety Management)($r=.19$, $p<.001$), and PSM-P(Practice for protection towards Patient Safety Management)($r=.22$, $p<.001$).

PSM-A (Attitude towards Patient Safety Management) showed a significant correlation between confidence in PSM-CP (Confidence when in Performance towards Patient Safety Management) ($r=.48$, $p<.001$) and PSM-P (Practice for protection towards Patient Safety Management) ($r=.37$, $p<.001$).

In addition, PSM-CP (Confidence when in Performance towards Patient Safety Management) had a significant correlation with PSM-P (Practice for protection towards Patient Safety Management) ($r=.36, p<.001$)[Table I].

Table I. Correlation between PSM-K, PSM-A, PSM-CP, and PSM-P (N=372)

Variables	PSM-K r(p)	PSM-A r(p)	PSM-CP r(p)	PSM-P r(p)
PSM-K	1			
PSM-A	.28(<.001)	1		
PSM-CP	.19(<.001)	.48(<.001)	1	
PSM-P	.22(<.001)	.37(<.001)	.36(<.001)	1

PSM-K (Knowledge about Patient Safety Management)

PSM-A (Attitude towards Patient Safety Management)

PSM-CP (Confidence when in Performance towards Patient Safety Management)

PSM-P (Practice for protection towards Patient Safety Management)

4. DISCUSSION

This study attempted to determine patient safety management knowledge, attitude, confidence in performance, practice among the nursing college students.

According to the study results, patient safety management knowledge (PSM-K) was 7.30 out of 10, or higher than average. Compared to the results of the study by Choi & Lee [5] and Park [12] toward the third and fourth graders, this study was highly limited to the fourth grade students at nursing college students.

In this study, questions with a correct answer rate of more than 90% in patient safety management knowledge were ‘fall prevention’, ‘oral or phone prescriptions’, ‘glove & hand hygiene’, ‘inputting instructions into a computer’, and ‘error report’, and this was consistent with the findings by Choi & Lee [5] and Park [12]. The result of this studies was considered to have been learned sufficiently in the nursing education curriculum not only fundamental nursing practice training and Simulation labs in the college but also clinical practice in the thorough practical training.

On the other hand, the lowest answer was ‘patient identification’. For accurate patient identification, at least two of the patient names, date of birth, and hospital registration number should be used, and the patient’s room number and location should not be used as indicators. Repeated training should be conducted throughout the clinical exercise to ensure accurate patient identification reflecting the results of this study.

The patient safety management attitude was 3.76 out of 5, higher than average. This was a similar result, with a score of 3.83 in Hyun [20] and a score of 3.59 Choi & Lee [5]. Choi & Lee [5] was in the 3rd and 4th grade, and in this study it was a different grade for 4th grade, but had a similar score in their patient safety management attitudes. It is considered that the nursing college students did not influence the patient safety management attitude during the clinical trial period. In the results of this study, administrative aspects of patient safety management attitude were assessed to be low, including guidelines for patient safety management, expertise of personnel, and consumption of associated costs. Therefore, there is a need to strengthen theoretical education to complement these problems. The confidence in performance of patient safety management of nursing college students was 3.92 out of 5, higher than the score of patient safety management attitude. In particular, the results of this study was showed high scores relating to ‘secure the foot switch’, ‘importance of side-rails’, ‘proper hand hygiene’, and ‘contaminated waste separation’. On the other hand, the

items ‘description of an accident report in case of medical error’, ‘situation analysis for investigating the cause of medical error’, and ‘report on medical errors and support from colleagues’ were showed low confidence in performance of patient safety management level, were consistent with the result of Park [21]. It is believed that this results was mainly because of clinical nursing practice conducted by nursing college students. Therefore, since nursing college students lack experience in responding to medical errors and in the reporting system, orientation should be provided before clinical practice to report and respond to medical errors.

This results is significant in the way that it accumulated empirical evidence of the patient safety management, and suggested the basis for practical spread. In addition, it is meaningful in the way that this study expanded the concept of the patient safety management in nursing, strengthened the preparing the ground for clinical practicum by providing information about clinical environment to nursing college students who were about to take clinical practicum on knowledge, attitude, confidence in performance and practice of patient safety management. In the future, it is expected that the integrated safety education program developed by the researcher would be widely used for not only nursing students but also nurses’ education. In addition, it is suggested that develop a program should be conducted in different region to accumulate empirical evidence on the effectiveness of this education program.

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