The Safety Management Activity of Nurses which Nursing Students Perceived during Clinical Practice

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Abstract
This study was aimed to examine the safety management activity of nurses which nursing students perceived during clinical practice, provide basic data for arranging for the systematic curriculum which could enhance the awareness on the patient safety of nursing students and to provide data useful for the safety management activity of nurses and the quality of nursing. As a survey research of correlation, data was collected from Sep, 2014 to Oct, 2014. The survey was implemented for 187 nursing students in the junior and senior classes who had an experience of clinical practice among the students in the department of nursing science in a university in M city. The collected data was analyzed with Frequency, Percentage, Average and Standard Deviation, t-test and ANOVA, and Pearson’s correlation coefficient by using SPSS 20.00. The results of this study showed that the safety management activity of nurses which nursing students perceived during clinical practice was 4.32 points in average out of 5 perfect points. Examining it by realms, they were as follows: fall prevention (4.38) which was highest, followed by patient identification (4.36), communication (4.19), medication management (4.34), procedure identification (4.33), and infection prevention (4.34), all of which appeared more than 4 points. As a result of the study above, it is considered that the curriculum by realms of safety management which can inspire the awareness on the patient safety of nursing students and establish the confidence in conducting the safety management activity for patients should be arranged.

Keywords: Nursing Students, Perceived Safety Management Activity

1. Introduction
All the patients and families who visit a hospital expect the safe protection and care while they are hospitalized and receive treatment, and it is a basic right for a patient to receive aid in a safe environment. A medical institution has responsibility and duty to provide a safe, high-quality medical service for a patient1, however, the continuous and dramatic changes of medical system, such as changes in the process of medical service and increase in the complexity of it, the oversupply of medical information, increase in medical severity and vulnerability of the patient who visits the medical institution, make it difficult to maintain patient safety in the process of providing medical service2. According to “To Err Is Human: Building a Safer Health System”, a report published in 1999 by National Medical Institute in America, 44,000~98,000 people died of errors while they were treated in a hospital every year. Moreover, it was revealed that security mishaps were more common cause of death than AIDS, so trust in patient safety is being seriously threatened3. In Korea, it appeared that there were the accidents which happened due to the negligence of safety management, which was highest (52.7%), ones due to that of medicine management (5.2%)4, and the nosocomial Infection of inpatients (about 10%)5. The security mishaps which happen in a hospital include all kinds of errors, mistakes, and accidents which happen in a hospital regardless of whether there is damage affecting patients or not due to them6, and as a result, they bring about much cost such as decline in medical quality and
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2. Methods

2.1 Subjects and Data Collection

This study was conducted for 187 students in the department of nursing science of a university located in M city. The data was collected from Sep 1, 2014 to Oct 30, 2014. To collect data, researchers visited the university for themselves and the subjects with the approval of the dean or the head of a department. After explaining the object and method of this study, a questionnaire was distributed to the subjects who agreed to participate in the study, and cautions and responding methods were explained to them. And then, the survey was conducted.

2.2 Survey Tools

The tool made by Park Hyun Hee was used as a study tool, which coincided to 6 international patient safety goals among evaluation items for medical institutions developed by KHIDI. It was composed 24 questions in total, which were composed of sub-scales such as exact patient identification (4), communication between medical teams (5), high-alert medication management (2), exact operation and procedure identification (3), infection prevention activity (7) and fall prevention activity (3). Each question was evaluated with 5-point Likert Scale where ‘Always Not’ was 1 point and ‘Yes’ was 5 points. It means that the higher the points were, the higher the safety management activity was.

2.3 Data Analysis

The collected data was analyzed with frequency, percentage mean and standard deviation, t-test and ANOVA, and Pearson’s correlation coefficient by using SPSS 20.00.

3. Results of Study

3.1 General Characteristics of Subjects

In the general characteristics of nursing students, there were 166 females (88.3%) and 22 males (11.7%), and 186 students (98.95%) were in a four-year-course. In practice period, there were 61 students (36.1%) who had over 2 years, 61 students (33.1%) who were under 1–2 year, and 52 students (30.8%) who were under 1 year. In a question of satisfaction with a major, there were 98 students (52.4%) who answered normal, in that of satisfaction with practice, there were 92 students (49.2%) who answered normal, which was highest, and in that of whether they received a safety education or not, there were 140 students (74.9%) who answered Yes, and 47 students (25.1%) who answered No.

3.2 Safety Management Activity of Nurses which Nursing Students Perceived

The safety management activity of nurses which nursing students perceived during clinical practice was 4.32
points in average out of 5 perfect points. Examined by sub-realms, they were as follows: fall prevention (4.38) which was highest, exact patient identification (4.36), communication between medical teams (4.19), high-alert medication management (4.34), and exact operation and procedure identification (4.33), and infection prevention activity (4.34), all of which were more than 4 points.

### 3.3 Correlation Among Sub-Realms of the Safety Management Activity of Nurses which Nursing Students Perceived

Examining correlation among the sub-realms of the safety management activity which nursing students perceived, it is like Table 3. The exact patient identification showed a static correlation with communication between medical teams, high-alert medication management, exact operation and procedure identification, infection prevention activity, and fall prevention activity, high-alert medication management showed a static correlation with exact operation and procedure identification, infection prevention activity, and fall prevention activity, exact operation and procedure identification showed a static correlation with astatic correlation with infection prevention activity and fall prevention activity, and infection prevention activity showed a static correlation with fall prevention activity.

### 4. Discussion

Examining study results, the safety management activity of nurses which nursing students perceived during clinical practice was 4.32 points in average out of 5 perfect points. Examined by sub-realms, they were as follows: fall prevention (4.38), which was highest, exact patient identification (4.36), communication between medical teams (4.19), high-alert medication management (4.34), and exact operation and procedure identification (4.33), and infection prevention (4.34), all of which were more than 4 points. As there were no preceding studies which examined nursing students, it was difficult to compare these results with others; however, in a study by Park Hyun

### Table 1. General Characteristics of Subjects

| Characteristics       | Category       | Frequency | Percent |
|-----------------------|----------------|-----------|---------|
| Gender                | Male           | 22        | 11.7    |
|                       | Female         | 166       | 88.3    |
| School System         | Three Year Course | 2       | 1.1     |
|                       | Four Year Course | 186   | 98.9    |
| Practice Period       | < 1 Year       | 52        | 30.8    |
|                       | Under 1 - 2 Year | 56   | 33.1    |
|                       | Over 2 Year    | 61        | 36.1    |
| Major Satisfaction    | Satisfied      | 82        | 43.9    |
|                       | Normal         | 98        | 52.4    |
|                       | Unsatisfied    | 7         | 3.7     |
| Practice Satisfaction | Satisfied      | 87        | 46.5    |
|                       | Normal         | 92        | 49.2    |
|                       | Unsatisfied    | 8         | 4.3     |
| Yes or No of Safety Education | Yes | 140 | 74.9 |
|                        | No             | 47        | 25.1    |

### Table 2. The Safety Management Activity of Nurses Perceived by Nursing Students

| Safety Management Activity                  | Minimum Value | Maximum Value | Mean  | Standard Deviation |
|---------------------------------------------|---------------|---------------|-------|--------------------|
| Exact Patient Identification                | 2.75          | 5.00          | 4.36  | 0.56               |
| Communication Between Medical Teams         | 2.20          | 5.00          | 4.19  | 0.63               |
| High-Alert Medication Management            | 1.00          | 5.00          | 4.34  | 0.71               |
| Exact Operation and Procedure Identification| 1.67          | 5.00          | 4.33  | 0.69               |
| Infection Prevention Activity               | 1.86          | 5.00          | 4.34  | 0.65               |
| Fall Prevention Activity                    | 2.00          | 5.00          | 4.38  | 0.66               |
| Total                                       | 2.43          | 5.00          | 4.32  | 0.54               |
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Hee for the nurses, patient safety management activity was 4.38 points out of 5 perfect points. Examined by sub-realms, they were as follows: high-alert medication management (4.58), which was highest, fall prevention (4.46), exact patient identification (4.45), exact operation and procedure identification (4.45), and infection prevention activity (4.34), all of which were over 4 points. Communication between medical teams (4.19) was 3.96 points, which was similar to the results of this study. It is considered that the reason why the safety management activity perceived by nursing students was high, that is, 4.32 points out of 5 perfect points was that they often encountered it through a basic science of nursing class at a school before they did clinical practice and that it was a part that was emphasized a lot. This study above, it was indicated that nursing students perceived that nurses had a good safety-related perception of the safety management activity and performed the patients safety activity well. It is necessary to establish customized management for personal factors and make an organizational support policy to reduce job requirements and enhance job autonomy with the objective of promoting nurses’ patient safety management activities. It is also necessary to reinforce safety education and policies, environmental support, and weak factors, which can improve safety-related recognition and patient safety culture, and establish a support system to promote nurses’ patient safety management activities. The safety management activity for patients is a measure and activity which is taken by medical institution and practitioners to prevent the disasters and accidents which may happen to the patients. In addition, as it is a systematic activity to reduce, remove and prevent the danger which occurs and can do inside the medical institution, it is considered that the curriculum by realms of safety management which can inspire the awareness on the patient safety of nursing students and establish the confidence in conducting the safety management activity for patients should be arranged. Safety must be interests of all of the nurses, public, and community, however, when patient security mishaps happen in a hospital, as their influence is directly connected with the life of a patient, it can be suggested that patient safety be an important principle in determining the quality of medical service. Also, patient safety management activity is a measure or action which a medical institution and its workers take to prevent the disaster and accident which might happen to patients, and the systematic activity which reduces, removes and prevents the risks which might happen within a medical institution. Joint Commission International (JCI), an international evaluation institution for medical institutions, hangs out a slogan, “Every patient has a right to receive an effective, safe medical treatment

| Table 3. Correlation by the Sub-Realms of the Safety Management Activity Perceived by Nursing Students |
|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
| Exact Patient Identification                                | Communication Between Medical Teams                           | High-Alert Medication Management                              | Exact Operation and Procedure Identification                   | Infection Prevention Activity                                 | Fall Prevention Activity                                      |
| Exact Patient Identification                                | 1.000                                                        |                                                              |                                                              |                                                              |                                                              |
| Communication Between Medical Teams                         | .733** (p=.000)                                              | 1.000                                                        |                                                              |                                                              |                                                              |
| High-Alert Medication Management                             | .623*** (p=.000)                                             | .688*** (p=.000)                                             | 1.000                                                        |                                                              |                                                              |
| Exact Operation and Procedure Identification                | .680*** (p=.000)                                             | .736*** (p=.000)                                             | .763*** (p=.000)                                             | 1.000                                                        |                                                              |
| Infection Prevention Activity                               | .598*** (p=.000)                                             | .650*** (p=.000)                                             | .553*** (p=.000)                                             | .538*** (p=.000)                                             | 1.000                                                        |
| Fall Prevention Activity                                    | .600*** (p=.000)                                             | .572*** (p=.000)                                             | .484*** (p=.000)                                             | .505*** (p=.000)                                             | .760*** (p=.000)                                             | 1.000                                                        |
all the time,” and focuses the direction of every evaluation on the improvement of patient safety, considering the improvement of patient safety the foremost task. Introducing international patient safety goals in 2008, JCI has been providing 6 evaluation standards focusing on the contents of the accident which might frequently happen in a medical institution and which might cause the serious results when it would happen. The contents of evaluation standards are as follows: first, it is to identify the patient exactly. To enhance the exactness of patient identification, it is recommended that over 2 methods among several methods, such as patient name, patient registration number, ID card number, date of birth or the barcode of a patient bracelet be used. Second, it is to deliver the exact, complete and explicit information within assigned time with effective communication so that the other can understand it. In JCI, as a rule, except for the emergency, prescription and medical service through verbal or a phone are prohibited, and it is recommended that complete records be left on paper or information system within assigned time after verbal or phone prescription is made. Third, it is to improve the safety of high-alert medication. The typical medication is concentrated electrolyte. To prevent the accident due to concentrated electrolyte, it is recommended that the exact procedures for every process, such as storage, prescription, preparation, notice, delivery, administer, and monitoring after administer be prepared. Fourth, it is to ensure the exact region, the exact procedure, the exact operation of a patient. It is recommended that the surgical site be marked as a clear method in the presence of the patient before operation, the patient be identified before operation, and time out be implemented before beginning operation. Fifth, it is to reduce the infection related with health and medical treatment, so hand hygiene is emphasized. Finally, it is to reduce fall risk. It is recommended that healthcare providers assess a degree of fall risk, create an environment for reducing fall risk, and take positive actions to minimize the damage when fall happens. In Korea, beginning with medical institution assessment in 2004, the medical institutions which try to acquire JCI authentication are increasing recently, and the continuous and dramatic changes in medical system increased the interest in patient safety, which brought about the increase in the weight which a nurse accounts for in the realm of safety management within a hospital and the improvement of perception as an expert who takes charge of an important role in increasing patient safety. Nurses, as an expert group which can sensitively recognize the problems related with patient safety, can play an important role in increasing patient safety with their interest and perception, Nam and Lim said, Nurses with higher perceived level of patient-safety performed more safety-care-activities and Shin said, patient safety to ensure a complete job satisfaction of hospital staffs in the Hospital Accreditation program further improve the evaluation process of hospital care. Possessing knowledge, attitude and capability as a nurse to improve patient safety is essential to care for the patient safely and to reduce the risk due to medical errors. Nursing students, as a group which comes to take charge of practice in a medical field as nurses after graduating from nursing college, may have a direct effect on the patients, treating them near and should do a role which can maximize the patient safety which is being threatened in a medical field by receiving a systemic education from their school days and possessing a correct knowledge and attitude on patient safety. Therefore, it can be said that the patient safety management activity of nurses who practically take charge of clinical field education during clinical practice, and do a role of a mentor is very important to nursing students. Therefore, it is considered that to increase the patient safety management activity of nurses in a clinical field, the strategies, such as safety education and training which can improve the perception related with patient safety and the establishment of patient safety culture, and a concrete educational program about patient safety is necessary in the curriculum of nursing college. That is, it is necessary to make sure that they are aware of international patient safety goals, which are foundation when conducting education of patient safety to nursing students, and the plans for practicing it, the classification and concept of medical errors and the process of reporting them, and the contents of the patient safety which can improve through that. Further, the education of the patient safety should be conducted throughout hospitals and schools, and it is considered that it is necessary to seek the plans that the students can participate in patient safety campaign within a hospital as well.

Like this, nursing students will receive the education on patient safety in the curriculum of nursing college, be encouraged for the consciousness of safety management and possess the ability to reduce medical errors through nurses who increase patient safety and provide a safe service in a clinical field. Because of that, it is considered that they will possess a quality as a nurse who can provide a safe, high-quality medical service for a patient. It can be
concluded as follows based on the results certified in this study. Nursing students, as a group which comes to take charge of practice in a medical field as nurses after graduating from nursing college and may have a direct effect on the patients, treating them near, should do a role which can maximize the patient safety which is being threatened in a medical field by receiving a systemic education from their school days and possessing a correct knowledge and desirable attitude on patient safety. That’s why it can be said that the patient safety management activity of nurses who actually take charge of a clinical field education and do a role of a mentor during clinical practice is very important to nursing students. Therefore, to increase the patient safety management activity of nurses in a clinical field, the strategies, such as safety education and training which can improve the perception related with patient safety and the establishment of patient safety culture, are necessary, and it is considered that a concrete educational program about patient safety is necessary to the students before they conduct clinical practice as the desirable attitude on patient safety may lead to the performance which keeps patient safety.

Suggestions for a follow-up study are as follows:
First, there is a limit in making the study results generalize in that the subjects were only the students in the department of nursing science of a university located in M city, so replication study and systematic comparative analysis for the nursing students who had a various background of various regions are necessary. Second, by developing and applying the programs which can improve patient safety in a clinical practice and a hospital, it is suggested that there will be studies which can examine the attitude of patient safety and confidence in performance.

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