

## Perception of Safety Attitude and Priority and Progress of Safe Practices of Nurses in Emergency Room

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### Abstract

*The purpose of this study was to examine the relationship between safety attitude and practices of nurses at emergency departments in hospitals. A total of 251 nurses working in the emergency department at 18 hospitals, which have over 300-beds in K-do and C-do (province) from May to July, 2014, were used for the study. A descriptive research study using a survey questionnaire on safety attitude scale safe practices was used. Data was analyzed using descriptive statistics, Pearson correlation, t-test, one-way ANOVA, and Scheffe test. There were significant differences in the level of perception of safety attitude and priority and progress of safe practices according to the nurses' age and number of safety education sessions. There were positive correlations between priority and progress of safe practices. However, there were no correlations between priority and safety attitude. The nurses' perception of attitude toward safety practice was positively affected by the progress of safe practices in the emergency department. Therefore, it is important for hospitals to develop effective programs that can enhance the nurses' attitude towards patient safety to ensure safety practices in the emergency departments to provide safe patient care.*

**Keywords:** *Emergency Service, Hospital, Safety*

### 1. Introduction

In the emergency department (ER), patients' lives depend on the medical personnel's quick identification of issues and appropriate interventions using critical thinking skills [1]. Therefore, in the ER, qualified and experienced medical personnel are required to provide immediate and appropriate interventions to patients in need of emergency care [2]. In a study focusing on medical errors in hospitalized patients, it was revealed that an average of 9.2 % of 5,744,566 in-patients had experienced an Incidence of medical error and an estimated death rate among those who had an incident of medical error was 7.4% in 2010. Majority of those errors were preventable medical errors and more than 80% of those errors occurred in the emergency department [3]. An increasing number of critically ill patients requiring immediate attention in the ER, despite the lack of available beds for these patients, resulted in increased patients' length of stay in the ER while decreasing nurses or healthcare professionals' time spent for direct patient care.

Increased patient's length of stay in the ER due to limited inpatient units, without increasing the number of care providers, has resulted in overcrowding the emergency department with patients and placed ERs to face challenges in managing and using resources efficiently [4]. Despite the demands for increased time and effort to care for critically ill patients who require immediate medical attention in the emergency department, nurses' direct care time for individuals was decreased significantly. These changes in the medical environment have affected a medical personnel's progress in emergency departments, thus increasing vulnerability in providing safe and quality patient care. As risk of malpractice or medical error increases, threats to patient safety also increased [5].

According to a study [5], on average, 18 cases of medical errors occur in every 100 patients visiting the emergency department [5]. For example, in one local emergency medical center, 177 cases of medical errors occurred in 160 patients who visited [6]. Study findings revealed that 75.1% of all medical errors were caused by doctors, 13% by nurses, and 8% from the other disciplines. Based on these results, the issues of medical malpractice and medical errors in the emergency department can never be overlooked by nursing as issues related to the discipline of nursing cannot be separated nor an exception from the issues related in the medical workforce.

Nurses take an important role in hospital safety. Nurses have close relationships with their patients and interact with them 24 hours a day, seven days a week. Needless to say, nurses' workloads and patient safety are closely related. Therefore, it is imperative for the ER nurses to identify various risk factors threatening patients' safety in emergency departments to reduce, eliminate, or prevent medical errors by creating a systematic safety culture, thus providing efficient and safe nursing care to patients. However, despite the heightened awareness to the culture of patient safety due to increased certification of healthcare organizations that practice the culture of safety, assessments of safety management are still in the early stages and have not yet established a firm and solid foundation. One of the reasons for this problem is that many healthcare organizations perform safe nursing practice superficially for short time frames until they obtain safety certification for the healthcare organization. To resolve this issue, well-planned research is needed to investigate healthcare professionals' awareness, perception, and attitudes of the hospital and unit's environment, communication methods during and after the medical error to establish a culture of safety by building a safe hospital environment that allows healthcare professionals to discuss openly about the medical error [7]. Above all, organizational members' heightened awareness and positive attitude towards culture of safety are needed to achieve this safety goal.

Culture of safety reflects organizational culture. In a study of [7], it was reported that the culture of safety is a product of an organization's health, structure and proficiency of safety management system, value, attitude, awareness, ability, and behavioral patterns of individual members' and the organization as a whole. Therefore, [7] communicated that attitude toward patients' safety was a measurement of conceptualization of organizational members' awareness about the culture of safety at some point. In addition, the culture of patients' safety means combined individual/organizational patterns, beliefs, values, and continuous efforts to decrease potential patient safety issues during provision of medical services [8]. Promotion of patient safety can be successfully achieved by implementing and using the culture of safety during delivery of medical services [9]. Attitude toward patients' safety can easily affect not only awareness of patient safety, but also one's working environment such as an individual member's communication, teamwork, and organizational culture. Therefore, it is imperative to explore attitudes toward patients' safety on subjects working for specific units. Many previous research studies revealed clinicians' attitude and awareness of patient safety is significantly lower than hospital staff. Furthermore, the researcher reported that nurses' safety awareness is lower than physicians'. In a study conducted by [10], it was emphasized that nurses have a tendency to have a higher awareness of patient safety on what they have experienced, but lacked overall safety awareness. In addition, an individual's attitude toward patient safety as well as one's awareness about the importance of safety activity directly affects the proficiency of safety activity to maintain patient safety [11]. Nurses take important roles in identifying and dealing with issues related to patient safety because nurses' interest and awareness of culture of safety is important in promoting patient safety [12]. Elements of evaluation related to nursing activities are directly and indirectly related to safe nursing activity, therefore measuring proficiency of and developing methods to improve safe nursing practice is needed. In-hospital safety errors include a variety of errors, mistakes, and accidents regardless of the presence or absence of physical harm to the patients.

Among them, safety errors related to inappropriate nursing activity rates take 50% of the total errors, which was also the highest percentage [13]. Presently, in S. Korea, hospital evaluations have been performed since 2004, and through this evaluation process, interest in promoting patient safety by preventing incidence of safety accidents is maintained [14]. Specifically, in 2010, the healthcare accreditation system adopted and implemented ways to evaluate patient safety. In the evaluation of nursing service areas, safe nursing activity includes fall rates, medication errors, (hospital acquired) infection rates, and errors related to equipment failure. Patient safety assurance is emphasized based on the promotion of patient safety and quality of medical service [15].

Despite implementation of various safety care activities, errors related to patient safety are still high in the emergency department [16]. Since the emergency department is especially vulnerable for patient safety, it is important for the ER nurses to seek ways to improve the safety of patients in their care. Until recently, many researches focusing on the safety of the ER patients have been done identifying the risk factors threatening patients' safety in the emergency department [5, 17], ER nurses' safety awareness and management activities to promote the culture of patient safety [18-19], and proposal of safety measures to promote patient safety [20]. Although many previous studies focusing on the intensifying patient safety management activities exist, research studies focusing on the extent of safety of nursing care activities or analysis of nurses' perception of the importance of safe nursing care practices are hard to find.

This study was aimed to identify the emergency nurses' attitudes and perception toward culture of safety, priority of safe nursing practices, and progression of the safety practices in the emergency department. By identifying these factors related to nurses' attitude toward and nursing priority of safe nursing care activities, this study will present the basis for future program development and enhance safety management activities.

## **Purpose of the Study**

The purpose of this study is to:

1. Identify the ER nurses' attitudes toward patient safety.
2. Identify ER nurses' perception in the priority and importance of safe nursing activities.
3. Identify the degree of progression of the ER nurses' safe nursing practice (in their daily activities).
4. Identify the relationship between ER nurses' attitude, the priority of importance, and degree of progression of safe nursing activities

## **2. Methods**

### **2.1. Study Design**

This study is a descriptive research focusing on identifying the effects of the ER nurses' attitude toward patient safety on the priority and degree of progression of safe nursing practice.

### **2.2. Study Sample**

Samples of this study were 262 nurses working in the emergency department in 18 general hospitals in K-do and C-do province in S. Korea. Each hospital has more than 300-beds. All of the study participants were explained the purpose of the study and agreed to participate in the study. To estimate proper sample size, statistical power analysis program G \* Power version 3.1.2 was used. The level of significance was calculated ( $p=0.05$ , 0.95 power of the test). The minimum sample size 184 was calculated (the effect size of 0.15). The actual sample size of 251 for this study met the appropriate sample size. Data was collected from 300 samples. However, 49 responses containing insufficient data

were excluded. 251 samples were selected for the final analysis.

### **2.3. Instrument**

#### **Perception of Safety Attitude**

Attitude towards patient safety is a measurement tool developed by [7] using the Safety Attitude Questionnaire Short Form. This tool was translated and used by [12] and permission to use the tool was obtained from the researcher [12]. In this study, six-sub categories: (a) the culture of teamwork, (b) culture of safety, (c) job satisfaction, (d) awareness of stress awareness, (e) awareness of management, and (f) work environment will be measured using a total of 31 questions. Each question uses a five-point Likert scale, with 1 being strongly disagree (not very true) and 5 being strongly agree (very true). The high score means a positive attitude toward patient safety. Cronbach's alpha in the study of [14] was .81( $\alpha=.81$ ) and Cronbach's alpha for this study was .84 ( $\alpha=.84$ ).

#### **Priority and Progress of Safe Practices**

To measure the level of priority and progression of patient safety activities, 34 safety practices, which were updated in 2006 from the 30-safety practice data practices developed by the American quality forums (NQF) in 2003, were used. The approval for translate and use was obtained by two S. Korean professors from the NQF. The tool was translated by two nursing professors individually and re-translated five times until they agreed that the translation was accurate and reached consensus for the accuracy of the tools. The translated tool was sent along with the original tool to a Korean professor who has been living in the United States longer than 20 years and an American professor who has been residing in S. Korea more than 15 years for verification of accuracy of the translation. Both professors affirmed that there was no significant difference between the original and translated tools.

In this study, to measure the degree of importance, the same order of items was used as it was on the original tool in the research [21]. On measuring the degree of progress of patient safety activities, the list of priority level was placed in the opposite order of items on the original tool. The degree of importance was measured using the 5-point Likert scale scores ranging from "not important" (1 point) to "very important" (5 points), where the higher score indicates a higher level of importance. The degree of progress was also measured using the 5-point Likert scale scores ranging from the "Strongly disagree" (1 point) to "Strongly agree" (5-point), where a higher score indicates a higher level of progress.

### **2.4. Data Collection Procedures**

Upon approval from the S-University's institutional review board (IRB No: SMU-2014-04-001-01) where this researcher is affiliated with, this researcher visited the nursing department of the study settings (18 general hospitals) to obtain permission to collect data from their nurses working in the emergency department. Permission was obtained for the study from the nursing department after submitting the letter of requests for access to study samples and data collection, data collection strategies, and data collection tools. Once permission was granted, the survey questionnaires and the envelopes with return address and postage were distributed to the personnel at nursing departments. In consideration of ethical principles, the study samples were informed of the objectives and methods of the study, approximate time to complete the survey which was 30 minutes, assurance of the confidentiality and anonymity of the study participants, and if participants decide to cancel participating in the study or decide not to answer any specific questions, the decision will be respected without any prejudice. Data collection was initiated after obtaining written informed consent using the survey questionnaires.

The data was collected between May and July 2014. A total of 300 surveys were collected by mail and among them, 49 surveys were discarded due to insufficient answers to the questionnaires. A total of 251 surveys were chosen for final analysis.

## 2.5. Data Analysis

For data analysis, SPSS Window 19.0 program was used. (a) The general characteristics of the subjects, attitudes toward patient safety, and the priority and progress of the safety were analyzed and frequency, percentage, mean, and standard deviation were calculated. (b) General characteristics related to the attitude toward patient safety, the level of priority and progression about safety practice was analyzed using *t*-test and one-way ANOVA. (c) The attitude toward patient safety and priority and progression about safety practice was analyzed using Pearson *r* (Correlation Coefficient).

## 3. Result

### 3.1. General Characteristics of Subjects

Majority 156 (62.2%) of the study samples' age were below age 29. Ninety six percent of the samples were female and among them, 91.6% were nurses. In the education section, 155 (61.8%) of samples' highest education level was junior college (community college). In the working characteristics, 59.7% of study samples were from local emergency medical institutions, 40.2 % of samples have between one and four years of hospital work experience, and 63.3% of samples' work experience in the current ER was between one and four. About safety education, 49.4% of study samples had received one to three safety education sessions within the past two years. 71.3% of samples had a one to 10 number of near-miss experiences and 73.3 % of the samples had one to 10 number of near-miss witness (Table 1).

### Perception of Safety Attitude, Priority and Progress of Safety Activity

The mean score of the study samples of attitude toward the safety was 3.27point (.31). Itemized list of the patient safety, mean (a) stress recognition was 3.93 (SD .54), which was the highest, (b) teamwork climate was 3.29 (SD .44), (c) job satisfaction was 3.27 (SD .31), (d) working condition was 3.24 (SD .79), (e) safety climate was 3.19 (SD .41), and (f) perception of management was 2.93 (SD .51), was the lowest point. Overall samples' mean score of the priority of safety activity was 4.42 (SD .62). Prevention of healthcare-associated infections scored the highest 4.53 (SD .61), followed by creating and sustaining a culture of safety: 4.5 (SD .70), informed consent, life-sustaining treatment, disclosure, and care of the care-giver was 4.47 (SD .65), facilitating information transfer and clear communication was 4.41 (SD .59, medication management 4.40 (SD .66), matching healthcare needs with service delivery capability: 4.39 (SD .62), condition- and site-specific practices 4.27 (SD .27) scored the lowest.

**Table 1. General Characteristics of Subjects (N=251)**

Characteristics	Category	N ( % )
Age(year)	25-29	156 (62.2)
	30-34	48 (19.1)
	35-39	17 (6.8)
	≥ 40	30 (12.0)
Gender	Female	242 (96.4)
	Male	9 (3.6)

Education	Associate's degree	155 (61.8)
	Bachelor's degree	81 (32.3)
	Graduate's degree	15 (6.0)
Position	Registered nurse	230 (91.6)
	Charge nurse	10 (4.0)
	Head nurse	11 (4.4)
Types of hospital	Regional emergency medical center	82 (32.6)
	Local emergency medical center	150 (59.7)
	Local emergency medical facility	19 (7.7)
Total work experiences (year)	1-4	101 (40.2)
	4-7	59 (23.5)
	7-10	37 (14.7)
	≥ 10	54 (21.4)
Experiences of current work units (year)	1-4	159 (63.3)
	4-7	51 (20.3)
	7-10	21 (8.3)
	≥ 10	18 (7.1)
Number of safety education sessions (past 2yrs)	1-3	124 (49.4)
	4-6	100 (39.8)
	≥ 7	24 (10.8)
Number of Near-miss experiences	None	18 (7.2)
	1-10	179 (71.3)
	11-20	30 (12.0)
	≥ 21	24 (9.5)
Number of Near-miss witness	None	16 (6.4)
	1-10	184 (73.3)
	11-20	30 (12.0)
	≥ 21	21 (8.3)

The mean score of the samples' progress of safety activity was 3.48. Prevention of healthcare-associated infections was scored 3.79, which was the highest, followed by condition- and site-specific practices: 3.46, medication management was 3.64, creating and sustaining a culture of safety was 3.40, facilitating information transfer and clear communication was 3.35, matching healthcare needs with service delivery capability 3.35, and informed consent, life-sustaining treatment, disclosure, and care of the caregiver was 3.15, which was the lowest <Table 2>.

### **Perception of Safety Attitude, Priority and Progress of Safety Activity by General Characteristics of Subjects**

In the attitude toward safety related to study samples' general characteristics, there were significant differences based on the samples' age ( $F=3.596$ ,  $p=.014$ ), number of safety education sessions ( $F=4.525$ ,  $p=.015$ ), and number of near-miss witness ( $F=3.590$ ,  $p=.014$ ) (Table 3). In the result of the Scheffe analysis, there was a positive relationship between the attitude toward safety and the age of samples, number of safety education sessions, and near-miss witness. In this study, if there was an increase in sample's age,

number of safety education sessions, and number of near-miss witness, the higher safety attitude score was. In the general and safety related characteristics of the samples, age ( $F=3.842, p=.010$ ) and number of safety education sessions ( $F=3.400, p=.035$ ) have a significant relationship between priority and progress of the safe nursing activity (practice). Based on the Scheffe analysis, the higher the participants' age, the higher priority safe nursing practice and the higher in the number of safety education sessions, the higher progress in safe nursing practice were noted Table 3.

**Table 2. Priority, Progress and Safety Attitude**

		(N=251)
	Items	Mean (SD)
Safety Attitude	Teamwork climate	3.29 (.44)
Safety Attitude	Safety climate	3.19 (.41)
Safety Attitude	Job satisfaction	3.27 (.31)
Safety Attitude	Stress recognition	3.93 (.54)
Safety Attitude	Perception of management	2.93 (.51)
Safety Attitude	Working condition	3.24 (.79)
Safety Attitude	Overall	3.27 (.31)
Priority	Creating and Sustaining a Culture of Safety	4.50 (.70)
Priority	Informed Consent, Life-Sustaining Treatment, Disclosure, and Care of the Care-giver	4.47 (.65)
Priority	Matching Healthcare Needs with Service Delivery Capability	4.39 (.62)
Priority	Facilitating Information Transfer and Clear Communication	4.41 (.59)
Priority	Medication Management	4.40 (.66)
Priority	Prevention of Healthcare-Associated Infections	4.53 (.61)
Priority	Condition- and Site-Specific Practices	4.27 (.48)
Priority	Overall	4.42 (.62)
Progress	Creating and Sustaining a Culture of Safety	3.40 (.71)
Progress	Informed Consent, Life-Sustaining Treatment, Disclosure, and Care of the Caregiver	3.15 (.57)
Progress	Matching Healthcare Needs with Service Delivery Capability	3.35 (.43)
Progress	Facilitating Information Transfer and Clear Communication	3.55 (.49)
Progress	Medication Management	3.64 (.58)
Progress	Prevention of Healthcare-Associated Infections	3.79 (.58)
Progress	Condition- and Site-Specific Practices	3.46 (.54)
Progress	Overall	3.48 (.56)

**Table 3. Priority, Progress and Safety Attitude by General Characteristics of Subjects**

(N=251)

Characteristics	Category	N (%)	Priority			Progress			Safety Attitude			
			M(SD)	t/F	p	M(SD)	t/F	p	M(SD)	t/F	p	
Age(year)	25-29 <sup>a</sup>	156 (62.2)	4.40 (.61)	3.842	.010	b>d	3.43 (.433)	.973	.406	3.21 (.28)	3.596	.014
	30-34 <sup>b</sup>	48 (19.1)	4.63 (.35)				3.28 (.38)			3.28 (.39)		
	35-39 <sup>c</sup>	17 (6.8)	4.38 (.54)				3.20 (.29)			3.20 (.29)		
	40 <sup>d</sup>	30 (12.0)	4.18 (.63)				3.40 (.26)			3.40 (.46)		
Gender	Female	242 (96.4)	4.19 (.55)	1.133	.258	3.42 (.42)	-.694	.488	3.27 (.31)	3.23	.656	
	Male	9 (3.6)	4.42 (.58)			3.32 (.39)			3.23 (.24)			
Education	Associate's degree	155 (61.8)	4.44 (.60)	.908	.405	3.45 (.40)	.001	.999	3.24 (.28)	2.331	.099	
	Bachelor's degree	81 (32.3)	4.35 (.56)			3.45 (.47)			3.22 (.30)			
	Graduate's degree	15 (6.0)	4.53 (.378)			3.45 (.38)			3.41 (.51)			
Position	Registered nurse	230 (91.6)	4.42 (.58)	.174	.841	3.45 (.42)	1.395	.250	3.23(.31)	3.36(.17)	2.004	.137
	Charge nurse	10 (4.0)	4.32 (.38)			3.66(.53)			3.36(.17)			
	Head nurse	11 (4.4)	4.38 (.70)			3.37 (.35)			3.38(.27)			
Types of hospital	Regional emergency medical center	82 (32.6)	4.43 (.53)	.509	.602	3.45 (.41)	.016	.984	3.24 (.30)	3.26 (.31)	.687	.504
	Local emergency medical center	150 (59.7)	4.40 (.60)			3.45 (.43)			3.26 (.31)			
	Local emergency medical facility	19 (7.7)	4.56 (.59)			3.43 (.43)			3.17 (.22)			
Total work experiences (year)	1-4	101 (40.2)	4.45 (.58)	.501	.682	3.42 (.37)	1.305	.273	3.20 (.29)	1.896	.131	
	4-7	59 (23.5)	4.37 (.62)			3.52 (.53)			3.25 (.28)			
	7-10	37 (14.7)	4.47 (.50)			3.37 (.39)			3.25(.37)			
	≥10	54 (21.4)	4.36 (.57)			3.49 (.41)			3.33 (.29)			
Experiences of current work units (year)	1-4	159 (63.3)	4.45 (.57)	1.269	.286	3.46 (.40)	1.461	.226	3.25 (.29)	.396	.756	
	4-7	51	4.27			3.42			3.26			

		(20.3)	(.61)		(.45)			(.35)	
	7-10	21	4.48		3.45			3.17	
		(8.3)	(.60)		(.47)			(.33)	
	≥10	18	4.43		4.05			3.34	
		(7.1)	(.02)		(.47)			(.56)	
Number of safety education sessions (past 2yrs)	1-3 <sup>a</sup>	124	4.35		3.23			3.12	
		(49.4)	(.35)		(.34)			(.33)	
	4-6 <sup>b</sup>	100	4.36	1.812	3.47	3.400	.035	3.25	4.525
		(39.8)	(.47)	.166	(.39)		a<b=c	(.28)	a<c
	≥7 <sup>c</sup>	24	4.50		3.48			3.32	
		(10.8)	(.47)		(.47)			(.33)	
Number of Near-miss experiences	None	18	4.64		3.38			3.24	
		(7.2)	(.27)		(.43)			(.25)	
	1-10	179	4.41		3.47			3.45	
		(71.3)	(.57)	1.241	(.42)	.350	.789	(.27)	.300
	11-20	30	4.33	.296	3.43			3.21	.825
		(12.0)	(.70)		(.45)			(.34)	
	≥21	24	4.36		3.41			3.29	
		(9.5)	(.61)		(.38)			(.50)	
Number of Near-miss witness	None <sup>a</sup>	16	4.30		3.35			3.13	
		(6.4)	(.69)		(.40)			(.27)	
	1-10 <sup>b</sup>	184	4.41		3.45			3.24	
		(73.3)	(.57)	.937	(.41)	.719	.541	(.26)	.014
	11-20 <sup>c</sup>	30	4.52	.424	3.42			3.23	
		(12.0)	(.56)		(.41)			(.47)	
	≥21 <sup>d</sup>	21	4.55		3.45			3.44	
		(8.3)	(.51)		(.54)			(.47)	

### Relationship between Attitude toward Safety and Priority and Progress of Safe Nursing Practice

There are significant correlations between the study samples' priority and progress of safety activity ( $r=.290$ ,  $p=.003$ ), and attitude toward patient safety and progress of safety activity ( $r=.498$ ,  $p=.000$ ). However, there was no significant relationship between attitude toward patient safety and priority of safety activity. There was a positive correlation in all lower regions, except the recognition of stress, of the attitude toward patient safety, while teamwork especially showed the strongest correlation ( $r = .476$ ,  $p = .000$ ) with the attitude toward patient safety Table 4.

**Table 4. Correlation between Priority, Progress and Safety Attitude**

(N=251)

	Priority	Progress	TC	SC	JB	SR	PM	WC	SA (overall)
Priority	1	.290** (.003)	.055	102	-.007	-.012	-.007	.039	.090
Progress	.290** (.003)	1	.476** (.000)	.469** (.000)	.423** (.000)	.119	.270** (.000)	.231** (.000)	.498** (.000)

TC: Teamwork climate, SC: Safety climate, JB: Job satisfaction,

SR: Stress recognition, PM: Perception of management, WC: Working condition

## Discussion

The result of this study revealed that the mean score of the ER nurses' attitude toward patient safety was 3.27, the attitude of the stress recognition among the lower region being the highest and awareness of management being the lowest. In one similar study [24] conducted on a maternity unit, overall average of maternity unit nurses' attitude toward patient safety was 3.38 points, maternity ward nurse, job satisfaction being the highest and attitudes to stress recognition being the lowest. In addition, in a study [12] conducted on one hospital unit, nurses' attitude toward patient safety was scored 2.89 points, the attitude of the working environment being the highest score and stress recognition being the lowest score, and these results were different from this study. The reason for this is that the concept of a safety culture reflects one's organizational culture [7] and it was measured at a specific time when frontline members' of the organization were aware and conceptualized their attitude toward patient safety, thus measurement can vary from one unit to another because it was sensitive to the environmental factors. Therefore, further repeated research on nurses working on various units are needed.

The mean score of the priority of safety activities of the research subjects was 4.42, the prevention of infection scored the highest and the activity of the special circumstances was scored the lowest. Progress of safety activities of the subjects was an average of 3.48, infection prevention being the highest and informed consent and care of the caregiver being the lowest. In the research study of [20], the result revealed that priority of safety activity was 4.23, with having the matching healthcare needs with service delivery capability the lowest score. In this study, progress of safety activity was 3.86. Medication management scored the highest and matching healthcare needs with service delivery capability was the lowest, which was different from this study result.

In a study [16] targeted to ER nurses, subjects showed a high degree of progress of safety nursing activities was scored high at 3.47 points, revealing nursing activities related to prevention of transfusion and medication error appeared to be the most active activity. Since there is no research done using the same tool used in this study, it is thus impossible to directly compare this result to other research studies; one can know that ER nurses' awareness of priority and progress of safe nursing activity is very high. Particularly in this study, the ER nurses thought that infection prevention were the most important among other safety activities. This is due to (a) characteristics of the nursing service: direct patient contact, handling blood and body fluid, (b) nurses are positioned to prevent spreading infection in hospitals, and (c) nurses awareness of vulnerability of patients' for hospital acquired infection in emergency situations, and (d) implementation of active infection prevention methods. However, in the result of the progress of safety activity, *medication management* scored the highest. This resulted from the ER nurses' high performance of safety activity toward medication management because they know that they have higher risk for medication error due to ER patients requiring high risk, emergency medication than other units.

The study result indicated that there was a correlation between the priority and progress of the safety activity, as well as attitude toward patient safety and progress of the safety activity. In the study of [19], when nurses think that safety activity is important, they perform higher safety nursing practice. However, organizational structure, resources, and quality of medical service environment such as the number of hospital beds, the annual number of visitors to the ER, number of full-time nurses, number of full time staff, and number of hospital employee correlated to the progress of safety activity. The study [14] focusing on the relationship between ER nurses' awareness of patient safety and safe nursing practice, revealed that the higher nurses' awareness are especially about their hospital environment and management team, the higher progress of the safety activity. In study [17], ER nurses' awareness about patient safety risk, the higher safe nursing practice, and, study [26] reported that because safety management activity is highly influenced by the internal communication of the organization, efforts should be taken to

improve communication between organizational members. Based on the previous research reports, there are various factors influencing the safe nursing practice. Progress of safety activity is affected not only by the nurses' awareness of importance of such activity, but also by internal and external factors of the organizations. Therefore more research studies are needed focusing on internal and external factors influencing safety activity.

Previous research studies reported that the higher attitude toward patient safety, the higher progress of safety activity. Therefore, in order to improve progression of safety activities, development of systematic, intervention strategies to increase attitude toward patient safety, thus resulting in promotion of patient safety in clinical areas. The significance of this study is that unlike previous studies, this study focused on the ER nurses' attitude toward patient safety, and priority and progress of the safe patient activity and their relationship. The limitations of this study are that the study findings cannot be generalized because the sample was ER nurses. Another limitation of this study is that because the tool used to measure the priority and progress of the safety activity was not designed for nurses working for a specific unit, but rather it was designed for general use. Therefore it may not accurately reflect ER nurses' safety management activities. It is imperative to develop a tool to assess safe nursing practice in emergency room.

Safety culture involves various activities with a goal: provision of safe and high quality medical service and creating a safe work environment by identifying risk factors that can potentially harm patients during medical service delivery [20]. Safety culture does not only mean maintaining organizational safety but also works as variables that support organizational members to perform safe practice to promote safe practice. As a result, accidents concerning safety will be decreased in healthcare organizations [21]. Therefore, first, healthcare professionals need to create a safety culture. To do that, healthcare professionals need to identify and analyze organizational issues and systematic problems that lead to repetitive errors within the medical system, which is a big and important task that healthcare professionals face [22]. Although all personnel have a responsibility for patient safety within the medical system [9], nurses have especially important roles in promoting patient safety because they are the direct care providers and interact with patients in close proximity.

Emergency room environments can be hectic and chaotic at times due to patients requiring a variety of emergency procedures in emergency situations. Healthcare professionals in the ER are required to care for physical and emotional well-beings of patients while categorizing patients, performing and assisting various emergency procedures, and administering medication to patients. This can lead to higher occurrences for safety issues due to medical or system related errors in the ER [23]. Furthermore, because of the lack in the number of nurses to care for the critically ill or patients requiring emergency care in the ER, patient safety has been threatened. Nurses' direct care time per patient has decreased; nurses are no longer able to obtain detailed health histories from patients and their family, and there has been an increase in communication errors not only between healthcare professionals, but also with patients and their families.

## **Conclusions and Recommendations**

The purpose of this descriptive research study was to identify the ER nurses' attitudes toward patient safety, the level of priority and progression of safe nursing activities, and the relationship between ER nurses' attitude, the level of priority, and degree of progression of the safe nursing activities. The results of this study revealed that the ER nurses' attitude toward patient safety was averaged at 3.27 points, the priority of safety activities was averaged at 4.42 points, an average of 3.48 points. General characteristics of the study participants, work environment, characteristics related to attitude toward patient safety, and level of priority and progression is associated with participants' age and number of safety education. In addition, there was a positive relationship between the

attitude toward patient safety and safety activities. Based on this result, this researcher concluded that nurses' attitude toward patient safety significantly affects nurses' safety activities in the emergency department. Therefore, for effective patient safety practices in hospitals, healthcare organizations need to develop an effective program that can reinforce the nurses' attitude toward patient safety [27]. However, internal and external hospital environments can influence the factors related to ER nurses' safety practice in the hospital. Therefore, further research is needed to analyze internal and external environmental factors related to patient safety from different angles. Development of an ER specific safety management and practice is needed for the healthcare professionals to safely care for their patients in an emergency situation. Therefore, this researcher suggest (recommends) developing additional tools that reflects the particular circumstances of the emergency department to identify factors related to the importance and progression of the safety practice in the emergency department.

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