

Mediating Effect of Nursing Work Environment in Nurses' Perception of Patient Safety Culture as well as Patient Safety Nursing Activities

Sam-Sug Kim¹, Hye-Gyung An² and So-Hee Kim³

¹Registered Nurse, Department of Nursing, Good morning Hospital, Korea

¹kim111272@naver.com

²Professor, Department of Nursing, Youngsan University, Korea

²stella@ysu.ac.kr

³Professor, Department of Nursing, Youngsan University, Korea

³nursinghee@ysu.ac.kr

Received: 24-October-2022

Revised: 26-November-2022

Accepted: 28-December-2022

ABSTRACT

The research was conducted to understand the considering nursing's mediation impact working environment in the effect of nurses' perception about improved sufferer nurse practices in smaller or middle hospitals. The data for this study were collected from 192 registered nurses with more than 6 months or experience working in four smaller or middle clinics inside the metro region of U from August 17, 2020 to August 31, 2020. The data analysis of this study was performed using IBM SPSS ver.21.0 program. Mean, the average deviation, percentage t-test or Multiple Linear regression, Pearson's Coefficient, or Correlation, ANOVA, Scheffé test, or Sobel test were used as data analysis methods to achieve the purpose of this study. As a result, patient safety nursing activity and the attitude of medication satisfaction were shown to be significantly positively correlated. Awareness and the setting for professional nursing and this were discovered that the clinical workplace partially mediates the relationship mindset of medication satisfaction perception and patient safety nursing activity.

Keywords: perceived patient safety culture, nursing work environment, patient safety nursing activities

1. INTRODUCTION

With the recent increase in interest in health, patients admitted to medical institutions want to get excellent medical offerings inside secure medical surroundings as a basic right (Kim et. al.). In the actual medical field, however, death or serious permanent disability occurs due to medical malpractice that fails to ensure patient safety during the treatment process, resulting in medical disputes, criminal or civil medical lawsuits (Ock & Lee, 2017).

In Korea, a patient safety reporting system was established, and a total of 13,919 patient safety accidents (an average of 1,160 cases per month) were received from January 1 to December 31, 2020, an increase of about 116% compared to the previous year. This increase means that patient safety accidents are emerging as an issue that threatens public health (Korea Institute for Healthcare Accreditation, 2021).

Nurses represent the most crucial medical personnel in the hospital to protect sufferers. Nurses are experts who care for patients 24 hours a day and take the main responsibility for Patients protection or safety-related nursing management, including nurses' interest and recognition on patient safety, are very important (Kim et al., 2010). Patient safety nursing activity refers to all activities within the hospital for patient safety as a series of activities to find, enhance or avoid potential troubles that occurred or may occur throughout care and treatment (Agency for Health Research and Quality, 2004). The 13,919 individuals protection accidents reported in 2020 include falls (49.6%), medication (31.1%), examination (3.4%), treatment and procedures (1.1%), other (9.2%) in order, most of which are safety accidents that are closely related to nurses (Korea Institute for Healthcare Accreditation, 2021). In particular, among hospital workers, nurses need to have a significant impact on the individual safety nursing behavior to minimize medical accidents because they are closely related to patient safety by providing direct care to patients from all hospitalization services and nursing to nursing and care integrated services (Kim & Lee, 2019).

Until now, many studies have been conducted on the nursing actions of caregivers throughout regards to human protection Korea. Factors impacting nurse actions related to sufferers safety include demographic characteristics (Choi et al., 2010), organizational support and staffing (Jeong et al., 2006), professional autonomy (Jung & Lee, 2017), nursing work environment (Kim & Kwon, 2019) and patient safety culture

recognition (Yang, 2019), and others such as a sense of safety control, leadership, and safety perception (Chung, 2017).

The most basic way to ensure patient safety is to form a patient safety culture so that all members of a medical institution value patient safety and make it a top priority (Nieva & Sorra, 2003). Patient safety culture is a concept that emphasizes knowledge, attitude, leadership, effective communication, policies and procedures, teamwork, incident reporting, and efficient personnel management to minimize patient damage that may occur in the process of delivering medical services (Kim et al., 2010). When patient safety culture perception within the hospital organization is established, not only errors can be minimized but also the incidence of safety accidents can be reduced (National Health Service, 2004).

The importance of the nursing work environment cannot be excluded because nurses involved in patient safety nursing activities are relatively more dependent on the environment than independently working members as they work cooperatively with members from various departments due to the characteristics of nursing work (Han & Jung, 2017). Nursing work environment is an environmental influencing factor on nursing work performance and means subjective feelings and attitudes including physical environment perceived by nurses, interactions among organizational members, and policy aspects of hospitals (Lake, 2002). A free and supportive nursing work environment has a great influence on the maintenance and securing of nursing personnel and the results of nursing work, and leads to the improvement of nursing quality, which positively affects the patient's health outcomes (Aiken, 2008).

On the other hand, the factors affecting healthcare tasks for consumer health include acknowledgement of the patient safety culture (Yang, 2019) and nursing work environment (Park et al., 2012). Here, it is reported that the patient safety culture recognition affects the nursing work environment (Choi & Kim, 2020), so it is considered necessary to examine the contribution of a medical workplace as a factor towards the effect of the Acknowledgement of the patient safety culture in nursing interventions

Thus, this study attempts to identify the calming impact of the healthcare workplace in the effect of culture of medication satisfaction perception on care giving tasks for medication satisfaction with a focus on small and medium hospitals, where the medical environment is vulnerable and patient safety accidents are twice as high as those of tertiary general hospitals (Korea Institute for Healthcare Accreditation, 2021), and many safety accidents may occur due to the shortage of nursing personnel and problems with the organization and system of the hospital.

2. METHOD

2.1 Research Design

This study is a descriptive research study to understand the mediating effect of nursing work environment in the relationship between the patient safety culture recognition and patient safety nursing activities of nurses in small and medium hospitals.

2.2 Research Subjects

The subjects of this study were nurses who worked in four medium-sized or tiny clinics with just under 300, or greater than 100 duvets in U city, fully comprehended the goal of this study as well as agreed to voluntarily contribute. The subjects were full-time nurses with more than 6 months of experience. The G*Power 3.1.9 software was used to determine the proportion of participants. There were 178 people, but considering the dropout rate of 10%, a total of 198 questionnaires were distributed, and 198 copies were recovered, showing a 100% recovery rate. Among them, 192 units in aggregate were utilised. For data assesement, excluding 6 questionnaires in which responses were insincere or incomplete.

2.3 Data Collection

Data utilized in the research from 198 people they were gathered from August 17 to August 31, 2020. Prior to conducting the survey were directly visited by the nursing department and head nurse to explain obtaining consent for information gathering as well as describing the goal or methodology of the study. Subjects who voluntarily agreed to participate in the study received their signatures and then distributed and filled out a structured self-directed questionnaire. In addition, after filling out the questionnaire, individual envelopes that can be sealed immediately to prevent personal information from being exposed were provided to the subjects, and the researchers collected them directly.

2.4 Instrument

The variable measurement tool used in this research was used following receiving permission from the tool developer or the researchers who investigated the validity after translation into Korean. The elements of general features in this research were consisted of a total of 9 items including age, gender, spouse's identity, last competence in schooling, total clinical expertise, position, exertion department, occurrence in reporting patient safety accidents, and regardless of whether patient security education is offered.

The ethic of medication satisfaction perception was used with the author's approval of the lee created a technique for measuring patient safety culture that is of Korean origin (2015). This tool contains 35 components in total, comprising administration (9 components), better patient strategy (4 components), patient care management system (4 components), cooperation (6 components), non-punitive atmosphere (4 components), and clinical governance (four components). Priority 3 items, patient safety knowledge/attitude. A higher rating reveals a positive perception mindset of patient welfare. At the time of tool development by Lee (2015), the overall reliability was Cronbach's $\alpha = .93$, also in this research, the overall reliability was Cronbach's $\alpha = .95$, and Cronbach's $\alpha = .76\sim.95$ for each subdomain.

The setting for professional nursing is the Nursing Work Environment Measurement Tool (PES-NWI), which Cho et al. (2011) translated into the Korean version of the tool Nurse Practitioner Environments Rating "Work Index (K-PES-NWI) developed by Lake (2002) was used. The entirety of the application is 29 items, including the participation of nurses in hospital operation (9 items), the foundation for quality nursing (9 items), the nursing manager's ability, leadership, and backing for the nurse (four items), sufficient manpower and material support (4 items), and it consists of three items on the cooperative relationship with the doctor". Every question has a 4-point Likert scale, with 1 being "not at all" and four being "definitely agree." The overall reliability of the tool translated into the Korean version of Cho et al.(2011) was Cronbach's $\alpha = .93$. In this study, the overall reliability was Cronbach's $\alpha = .94$.

For patient safety nursing activities, Han and Jung (2017)'s tools were used which were modified and supplemented based on the items belonging to the Institute for Accreditation Assessment created Assessment and Accreditation of Medical Institutions. There are 32 items in all in this application, comprising accurate patient identification 4 items, communication 4 items, patient safety before surgery/procedure 3 items, fall prevention activities 6 items, hand hygiene and infection control 5 items, fire safety and emergency management 2 items. It consisted of 6 questions on medication and 2 questions on facility and medical device management. Each item is made up of a five-point Likert scale, with 1 point denoting "not at all" and Five denoting "strongly agree.". At the time of tool development by Han and Jung (2017), the overall reliability was Cronbach's $\alpha = .95$, and in this study, the overall reliability was Cronbach's $\alpha = .96$.

2.5 Data Analysis Method

The data collected in this study utilising the IBM SPSS statistics 21.0 application for analysis. The general characteristics of the subjects, the degree mindset of patient safety perception, improved patient, the healthcare workplace culture, or nursing activity were analyzed by descriptive statistics. "The t-test and ANOVA were used for differences in patient safety culture perception, nursing working environment, and patient safety nursing undertakings inside the broadest sense characteristics of the subject, and The Scheffé test is used to examine the post-test. The correlation between patient safety culture perception, nursing Workplace conditions with patient safety nursing activity was analyzed by Pearson's Correlation Coefficient". And the sufferer current cultural impact as well as its clinical learning environment's mediating role perception on patient safety nursing activities was tested by multiple regression analysis according to the three-step analysis procedure of Baron and Kenny (1986), as well as the Sobel testing were used to determine overall importance of a moderating effects.

2.6 Ethical Consideration

This research was done subsequent receiving the University Institutional Review Board (approval number: YSUIRB-202006-HR-066-02) for the protection of study subjects. The purpose of the study was explained to the study subjects, and only those subjects Participants willingly consented to take part in the research were required to complete a structured questionnaire. Data collected after the survey will be destroyed by data deletion and data incineration after storage for 3 years.

3. RESULT

Table 1 shows the results of analyzing the subject's perception of culture of consumer health, the workplace environment for nurses, as well as degree of patient safety nursing activity. The patient safety culture perception score was an average of 3.39 ± 0.48 points out of 5. The standard score of the nursing work environment was 2.63 ± 0.38 out of 4 points. The patient safety nursing activity score was an average of 4.17 ± 0.46 points out of 5. And the score of each sub-domain is shown in Table 1.

Table 1. Perception of human safety rules and procedures, the working conditions for nurses, and degree of patient safety nursing activity

Variable	Sub-Domain	Range	Min	Max	Mean±Sd
perception of patient safety culture	leadership	1~5	1.00	5.00	3.39±0.66
	patient safety policy/procedure patient	1~5	1.00	5.00	3.17±0.66
	safety improvement system	1~5	1.00	5.00	3.10±0.63
	teamwork	1~5	1.00	5.00	3.56±0.56
	non-punitive environment patient	1~5	1.25	5.00	3.52±0.67
	safety priority	1~5	1.00	5.00	3.24±0.70
	patient safety knowledge/attitude	1~5	1.00	5.00	3.59±0.52
	total	1~5	1.57	4.63	3.39±0.48
nursing work environment	participation of nurses in hospital operation	1~4	1.00	3.44	2.61±0.43
	foundation for quality nursing	1~4	1.00	3.44	2.64±0.37
	nursing manager's ability leadership, support for nurses	1~4	1.00	3.75	2.81±0.45
	sufficient manpower and material support	1~4	1.00	3.50	2.34±0.53
	cooperative relationship between nurses and doctors	1~4	1.00	4.00	2.76±0.48
	total	1~4	1.14	3.45	2.63±0.38
patient safety nursing activity	accurate patient identification	1~5	2.75	5.00	4.25±0.59
	communication	1~5	2.25	5.00	3.93±0.57
	patient safety before surgery/ procedures	1~5	2.67	5.00	4.27±0.62
	fall prevention activities	1~5	2.00	5.00	4.19±0.58
	hand hygiene and infection control	1~5	2.80	5.00	4.35±0.53
	fire safety and emergency management	1~5	1.00	5.00	3.78±0.70
	administration	1~5	2.67	5.00	4.21±0.55
	facility and medical device management	1~5	2.00	5.00	4.03±0.68
total	1~5	3.00	5.00	4.17±0.46	

Table 2 shows the results of analyzing the variations in health care culture perception, safety of patients, the nursing organizational climate, or Depending on the general features of a patients, perform intervention strategies . Patient safety culture perception based on the respondents' basic qualities is statistically important in the patient safety education experience ($t=2.43, p=.017$). Patient safety education experience showed that 'Yes' (3.44 ± 0.48) perceived patient safety culture more positively than 'No' (3.27 ± 0.43). Nursing work environment based on the predominant traits of the topics was statistically noteworthy in gender ($t=4.53, p=.016$), age ($t=4.53, p=.012$), last educational background ($t=8.88, p<.001$), total clinical experience($t=4.10, p=.003$) and expertise with medical safety awareness ($t=2.66, p=.009$).

Table 2. Differences in Patient Safety Culture Perception, Working Nursing Activities Based on the Basic Features of Patients Environment, as well as Medication Welfare

classification	No	Perception of Patient Safety Culture		Nursing Work Environment		Patient Safety Nursing Activity	
		mean±SD	t/F(P)	mean±SD	t/F(P)	mean±SD	t/F(P)
gender							
male	4	3.87±0.57	1.72	3.13±0.22	4.53	4.14±0.42	-.117
female	188	3.38±0.47	(.182)	2.61±0.37	(.016)	4.17±0.47	(.914)
age							
21 to 30 years old ^a	82	3.44±0.38	2.96 (.054)	2.71±0.31	4.53 (.012) a>b	4.09±0.46	2.64 (.074)
31 to 40 years old ^b	74	3.29±0.53		2.53±0.42		4.18±0.45	
41 to 50 years old ^c	36	3.52±0.52		2.64±0.38		4.30±0.46	
marital status							
single	119	3.34±0.44	-1.76	2.63±0.38	.004	4.09±0.45	-2.91
married	73	3.47±0.51	(.081)	2.63±0.37	(.997)	4.29±0.47	(.004)
education							
diploma ^a	82	3.43±0.47	2.70 (.070)	2.66±0.35	8.88 (<.001) a.b>c	4.20±0.46	.614 (.542)
bachelor ^b	107	3.39±0.46		2.62±0.36		4.14±0.47	
master ^c	3	2.79±0.73		1.77±0.72		4.39±0.33	
clinical career							
more than 6 months to less than 1 year ^a	10	3.65±0.35	2.26 (.065)	2.95±0.22	4.10 (.003) a>e	4.01±0.30	4.03 (.004) e>d>c
more than 1 years to less than 3 years ^b	33	3.48±0.45		2.77±0.28		4.17±0.44	
more than 3 years to less than 5 years ^c	25	3.28±0.34		2.59±0.34		3.99±0.53	
more than 5 years to less than 10 years ^d	61	3.31±0.49		2.58±0.39		4.10±0.41	
more than 10 years ^e	63	3.44±0.52		2.56±0.41		4.34±0.47	
position							
staff nurse	139	3.39±0.47	-.040	2.63±0.38	.343	4.14±0.47	-1.02
higher than charge nurse	53	3.39±0.48	(.968)	2.61±0.38	(.773)	4.22±0.47	(.310)
work department							
internal medicine	52	3.40±0.48	.044 (.957)	2.67±0.33	.590 (.555)	4.11±0.45	.772 (.463)
surgery	98	3.39±0.45		2.62±0.36		4.22±0.46	
others	42	3.41±0.53		2.59±0.47		4.13±0.47	
patient safety accident reporting experience							
yes	91	3.39±0.47	.009	2.59±0.37	-1.18	4.16±0.49	-.197
no	101	3.39±0.48	(.993)	2.66±0.38	(.241)	4.17±0.45	(.844)
patient safety education experience(last year)							
yes	139	3.44±0.48	2.43	2.67±0.38	2.66	4.21±0.47	2.26
no	53	3.27±0.43	(.017)	2.51±0.35	(.009)	4.05±0.44	(.026)

Patient safety nursing activity was shown to have a substantial positive link between medication satisfaction culture perception ($r=.519, p<.001$) as well as the setting for professional nursing ($r=.155, p=.034$). It was discovered a strong positive association between the nurse workplace setting and how sufferers are perceived to be treated. ($r=.541, p<.001$). (Table 3)

Table 3. association between health care culture perception, nursing work environment, and patient safety nursing activities

	perception of patient safety culture	nursing work environment	patient safety nursing activity
perception of patient safety culture	1		
nursing work environment	.541(p<.001)	1	
patient safety nursing activity	.519(p<.001)	.155(p=.034)	1

Before testing the mediating effect regarding the setting for nursing work , model fit was checked. The calculated regression model was significant (p<.001), and There was forbearance for the derivatives' multi - collinearity. values of 0.537~1.000, all above 0.10, and the variance inflation factor (VIF) of 1.000~1.000. It was judged that there was no problem of multicollinearity, as all of them did not exceed 10 at 1.861. In addition, the Durbin-Watson index was 1.865, close to 2, confirming that there is not correlated with each other each sovereign variable.

Table 4 and Figure 1 show the results of Baron and Kenny (1986) three-step analysis of the influence of the workplace for nurses that mediates on the effect of the subject's perception of the impact of nursing interventions on patients protection culture. The consequences of assessment whether the setting for nursing work perceived by Nursing staff at small or medium facilities , the subjects of this investigation , mediates the relationship among patient safety culture perception and patient safety nursing activities are as follows. In the first stage, patient safety culture perception, a predictor variable, had a statistically significant effect on the nursing work environment, a parameter ($\beta=.541$, $p<.001$), and the model explanatory power was 29.3%. In step 2, patient safety culture perception, which is a predictor variable, significantly explained patient safety nursing activity as a dependent variable ($\beta=.519$, $p<.001$). Finally, in step 3, when patient safety culture perception as well as nursing work environment, which are predictive variables, were simultaneously input, patient safety culture perception ($\beta=.616$, $p<.001$) and nursing work environment ($\beta=-.178$, $p=.017$) was found to have a statistically significant effect on patient safety nursing activity, the explanatory variables . In addition, since the validation of mediating effects through regression analysis inference is not a validation of the actual mediating effect size, how important mediation is effects was evaluated by the Sobel test. . Because the patient safety culture perception coefficient was significant, it was found that the nursing work environment perceived by nurses in small and medium hospitals partially mediates the relationship between patient safety culture perception and patient hazard nursing activity.

Table 4. Mediating effect of nursing work environment on the effects of subject's patient safety culture perception on patient safety nursing activities

Step	Independent Variable	Dependent Variable	B	SE	β	t	P	R ²
Step 1	perception of patient safety culture	nursing work environment	.413	.047	.541	8.761	<.001	.293
Step 2	perception of patient safety culture	patient safety nursing activity	.601	.073	.519	8.258	<.001	.269
Step 3	perception of patient safety culture	patient safety nursing activity	.713	.086	.616	8.341	<.001	.292
	nursing work environment		-.271	.112	-.178	-2.416	=.017	
Sobel test : Z=-3.65, p<.001								

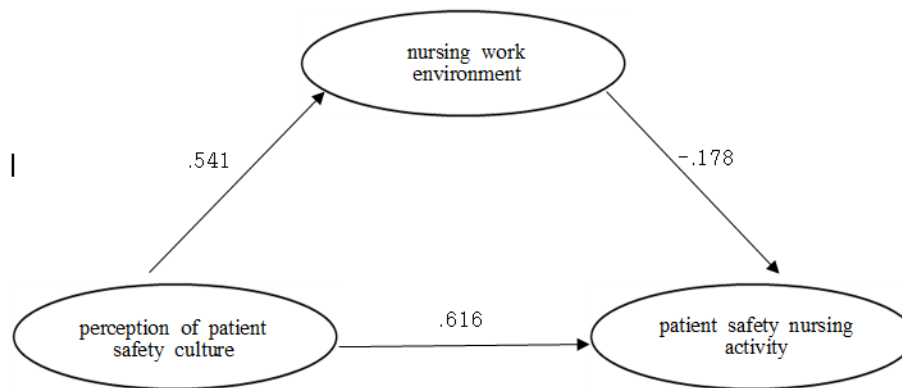


Fig. 1: Impacts of the subject's patient outcomes culture awareness on healthcare quality nursing activities are moderated by the nurse's work environment.

4. DISCUSSION

As a result of this study, the variable that shown a statistical considerable differences in the degree of patient safety culture perception according to The individuals were generally kind and patient. safety education experience, which was the same as the study results for emergency room nurses (Kim & Kim, 2017). This means that nurses with experience in patient safety education recognize health care culture positively, confirming the importance of patient safety education.

The variables that showed statistically significant differences in the nursing work environment based on the respondents' basic qualities include gender, age, the highest level of education, total clinical experience, and patient safety education experience. This is the result similar to that of Lee's study (2020) for nurses in a tertiary general hospital using the same measurement tool showing that there are significant differences in male, younger age, single, intensive care unit nurse, low total work experience and work experience in current department. It is thought that young nurses with low experience evaluated the nursing work environment positively because the nursing work environment was positively evaluated (Lee, 2020) through changes in the educational system environment, such as education-only nurses and preceptor system, which were carried out to augment the intention fresh nurses to work and newer-than-one-year-experienced nurses are not particularly affected by the nursing work environment because they have just entered the hospital and are immersed in job acquisition (Yu, 2015).

The variables demonstrated statistically significant variables in patient safety nursing pursuits were categorised by the individuals' age and characteristic features, highest level of education, total clinical experience, as well as expertise in medical prevention measures. This is the result similar to that of Park's (2019) study for general hospital nurses using the same measurement tool that showed significant differences in age, gender, marital status, total clinical experience, and patient safety education cycle. It is said that the more clinical experience they have, the more proficient they are at work, the more knowledge they have, and the higher their sense of responsibility, the better they perform patient safety nursing activities. It is also said that a desire to preserve and protect is created through marriage, which leads to work. Given that nurses Having knowledge of patient safety instruction have higher patient safety nursing activity scores and nurses with little clinical experience in actual hospitals often provide direct nursing care, it is necessary to enhance the degree of nurse actions for patient safety through practical application by continuous education program development and repeated education (Lee et al., 2019) that might improve patient care nursing activities.

Next, in the correlation between the variables of this study, patient safety nursing activities were found to have a strong favourable link between the ethic of medical protection perception and the nursing work environment, which was the same as the consequences of the study for hospital nurses (Hwang, 2020) and small and medium hospital nurses (Choi & Kim, 2020). In other words, it was found that the greater the sufferers safety culture perception and the more positive about the nursing the more favourable the working environment, patient safety nursing activities. consequently, it is necessary to establish the patient safety culture perception that can improve patient safety nursing activities and to seek ways to enhance the working conditions

for nurses . The results of a study on nurses in tertiary general hospitals and general hospital operating rooms (Kim & Kwon, 2019) and general hospitals (Lee et al., 2019) showed that there was no correlation between the nursing tasks, the nurse workplace culture, or improved patient which is different from the results of this study, so it is thought that repeated studies are needed to reconfirm their correlation.

The impact of the patients care cultural identification upon improved individual nursing interventions were used to investigate the mediation function of a nurse working setting. It was determined that the medical workplace environment had a moderating influence as a consequence.

Given the lack of prior research on the role played by the clinical work space is moderating the link between patient safety culture recognition and patient safety nursing behaviours, a direct comparison is challenging. However, a study by Cheng et al. (2020) targeting pediatric nurses at a tertiary hospital in Jilin Province, China regarding nursing work environment showed a partial the nursing's mediated impact practice effect of nursing via mediation organizational support recognition and professional benefit recognition, and a study by Choi and Kim (2020) targeting caregivers at small or midsize hospitals confirmed that the nursing work environment based on the profession self-concept had a moderated mediating effect on the connection between patient care nursing activities or acknowledgment of safety practices, which is considered to support the results of this study in part.

The result of this study showed that patient safety culture recognition affected the the medical profession, the nursing work environment measured as a low score played a partial mediating role, so that patient safety nursing activities were performed well. Based on previous studies, this is different from the study result of Hwang (2020) that some sub-domains of the nursing work environment have a favourable impact on the performance of patient safety nursing activities. Generally, it was found that nurses performed better patient safety nursing activities as they recognize that the nursing work environment in the hospital to which they belong is good. This research discovered that the working environment for nurses , which is a parameter, had a negative effect ($\beta=-.178$, $p=.017$) on medical and nursing staff involving patient safety . Although the correlation coefficient was only .155 between the patient safety nursing activities and the nursing work environment ($r=.155$, $p=.034$), this result is different from the result that showed a positive correlation within the significance level. It is considered to be the result of the high degree of the effect of patient safety culture perception on nursing work environment, which is a parameter ($\beta=.541$, $p<.001$) and the effect of patient safety culture perception ($\beta=.616$, $p<.001$) when the predictive variables, patient safety culture perception and nursing work environment, were simultaneously input in step 3. Therefore, it is considered that confirmation through repeated studies is necessary in the future. On the other hand, a study by Kim and Kwon (2019) noted that the setting for nursing work had a negative effect on patient safety nursing activities. Some studies reported that while the patient safety culture perception is increasing through continuous patient safety education, the poor nursing work environment raises the sensitivity to the environment with a risk of safety accidents, encouraging nurses to actively perform patient safety nursing activities (Kim & Kwon, 2019). Therefore, it is expected that repeated research in the crisis situation that nurses are facing in the recent Covid 19 situation will be more meaningful.

5. ACKNOWLEDGEMENTS

This study is a partial rewriting by the original author Sam-Sug Kim's master's thesis

6. REFERENCES

- [1] Agency for Health Research and Quality (2004). Hospital survey on patient culture. Agency for Health Research and Quality publication, No.04-0041 , from http://www.ahrq.gov/qual/patient_safety_culture/hospindex.htm.
- [2] Aiken, L. H., Clarke, S. P., Sloane, D. M., Lake, E. T., and Cheney, T. (2008) Effects of hospital care environment on patient mortality and nurse out comes. *Journal of Nursing Administration*, 38(5), 223-229.
- [3] Baron, R. M. and Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182, from: <http://dx.doi.org/10.1037/0022-3514.51.6.1173>.
- [4] Cho, E. H., Choi, M. N., Kim, E. Y., Yoo, I. Y., and Lee, N. J. (2011). Construct validity and reliability of

- the Korean version of the practice environment scale of nursing work index for Korean nurses. *Journal of Korean academy of nursing* 41(3), 325-332.
- [5] Choi, J. H., Lee, K. M., and Lee, M. A. (2010). Relationship between hospital nurses' perceived patient safety culture and their safety care activities. *Journal of Korean Academic of Fundamentals of Nursing*, 17(1), 64-72.
- [6] Choi, Y. O. and Kim, M. S. (2020). Nursing work environment and professional self concept as a mediating in the relationship between safety culture awareness and patient safety nursing activities in small and medium hospital nurses. 2020 Fall Conference of the Korean Society of Nursing Science, from:<http://www.dbpia.co.kr/journal/articleDetail?nodeId=NODE104>.
- [7] Chung, S. K. (2017). A Structural model of safety climate and safety compliance of hospital organization employees. *Asia-pacific Journal of Multimedia Services Convergent with Art, Humanities, and Sociology*, 7(8), 947-961.
- [8] Han, M. Y. and Jung, M. S. (2017). Effect of hospital nurses' perceptions of organizational health and patient safety culture on patient safety nursing activities. *The Journal of Korean Nursing Administration Academic Society*, 23(2), 127-138.
- [9] Jung, H. H. and Lee, Y. M. (2017). Effects of professional autonomy, organizational commitment, and perceived patient safety culture on patient safety management activities of nurses in medium and small-sized hospitals. *Journal of Korean Critical Care Nursing*, 10(1), 63-74.
- [10] Korea Institute for Healthcare Accreditation. (2021). 2020 patient safety statistical annual report. Korea patient safety reporting & Learning system from: <https://www.kops.or.kr/portal/common/searchResult.do>.
- [11] Kim, S. S. (2021). Effects of patient safety culture recognition on patient safety nursing activities in small and medium hospital nurses: Focusing on mediating effects of nursing work environment. Thesis of The Graduate School of Youngsan University.
- [12] Kim, E. K., Kang, M. A., and Kim, H. L. (2007). Experience and perception on patient safety culture of employees in hospitals. *The Journal of Korean Nursing Administration Academic Society*, 13.3, 321-334.
- [13] Kim, M. H. and Lee, S. M. (2019). The causal relationships among staff nurses' job stress factors, patient safety culture perception and patient safety nursing activities in a university hospital. *The Journal of Korean Nursing Administration Academic Society*, 25(4), 340-352.
- [14] Kim, M. J. and Kim, J. K. (2017). A study on the relationships among perception about patient safety culture, patient safety competence, and safety nursing activities of emergency room. *The Journal of the Korea Contents Association*, 19(10), 268-279.
- [15] Kim, M. R. and Kwon, M. S. (2019). The effects of operating room nurses' perceptions of organizational health, safety climate, and the nursing working environment on engagement in patient safety management activities. *Korean Journal of Occupational Health Nursing*, 28(4), 197-207.
- [16] Kim, S. K., Lee, H. J., and Oh, E. G. (2010). Perceived level and associated factors of patient safety culture among health care providers in an operating room. *Journal of Korean Clinical Nursing Research*, 16(2), 57-67.
- [17] Kim, Y. M., You, M. S., Cho, Y. H., Park, S. H., Nam, S. N., Park, M. O., Kim, S. Y., and Kim, M. Y. (2010). Development and evaluation of a patient safety-focused in service education program for surgical nurse. *Journal of the Korean Medical Association*, 16(2), 152-161.
- [18] Lake, E. T. (2002). Development of the practice environment scale of the Nursing Work Index. *Research in Nursing & Health*, 25(3), 176-188.
- [19] Lee, H.K., Kim, G.M. and Kim, E. J. (2019). The effect of organizational commitment and perceived patient safety culture on patient safety nursing activities in public hospital nurses. (2019). *Journal of Korean Academic Society of Home Health Care Nursing*, 26(2), 145-154.
- [20] Lee, S. G. (2015). Development and psychometric evaluation of the Korean patient safety culture survey instrument for hospital. Thesis of The Graduate School of Chung-Ang University.
- [21] Lee, Y. N. (2020). Effects of nursing work environment, career motivation, job-esteem on intention to stay of hospital nurses. Chungbuk National University Graduate School, Master's Thesis .
- [22] National Health Service (2004). Seven steps to patient safety: An overview guide for NHS staff. London: National Patient Safety Agency, from [http://www.wales.nhs.uk/documents/Sevensteps overview.pdf](http://www.wales.nhs.uk/documents/Sevensteps%20overview.pdf).

- [23] Ock, M. S. and Lee, S. I. (2017). Disclosure of patient safety incidents: implications from ethical and quality of care perspectives. *Journal of the Korean Medical Association*, 60(5), 417-427.
- [24] Park, E. J. (2019). The effects of patient Safety Culture Perception, Organizational Commitment and Safety Control on Patient Safety Management Activities in General Hospital Nurses. Korea Bible University Master's Thesis
- [25] Park, S. J., Kang, J. Y., and Lee, Y. O. (2012) A Study on hospital nurses' perception of patient safety culture and safety care activity. *Journal of Korean Critical Care Nursing*, 5(1), 44-55.
- [26] Nieva, V. F. and Sorra, J. (2003). Safety culture assessment: a tool for improving patient safety in health organization. *Quality and Safety in Health Care*, 12(2), 17-23.
- [27] Yu, J. I. (2015). Effects of nursing work environment, job stress and burnout on turnover intention in clinical nurses. Korea National University of Transportation Master's Thesis
- [28] Hwang, S. M. (2020). The impact of nurses' nursing work environment and patient safety culture perceptions on patient safety management activities. Youngsan University Master's Thesis.
- [29] Lee, M. A., Kang, S. J., and H. S. Hyun. (2019). Relationship among Nursing Professionalism, Nursing Work Environment, and Patient Safety Nursing Activities in General Hospital Nurses. *The Journal of Korean Nursing Administration Academic Society*, 25(4), 317-328.
- [30] Cheng, L. N., Cui, Y. J., Chen, Q., Ye, Y., Y. C., Lin, F. Z., Zhang, W.Y., Zeng, X., and Y. Hu. (2020). Paediatric nurses' general self-efficacy, perceived organizational support and perceived professional benefits from Class a tertiary hospitals in Jilin province of China: the mediating effect of nursing practice environment. *BioMed Central Journal of Health Services Research*, 20(1), from <http://doi: 10.1186/s12913-019-4878-3>.
- [31] Hymavathi, K., and Rao, Sekhara K.S. (2020). Impact of Emotional Intelligence on Quality of Work Life: A study on Jute Industry in Andhra Pradesh and West Bengal, India. *Textiles Trends*, 63 (3), 25-30.
- [32] Dash, K. K., Dash, S. S., and Satpathy, S. (2021). A Study on Gender Differences in Workplace Communication across Organizations. *Rupkatha Journal on Interdisciplinary Studies in Humanities*, 13 (3), 2021, 1-10. <https://doi.org/10.21659/rupkatha.v13n3.15>