

A Study of Between Forensic Nursing Competence, Ethical Decision-Making Confidence, and Nursing Professional Value among Nursing Students

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Abstract

Background/Objectives: This study was conducted to examine the relationship between forensic nursing competence, ethical decision-making confidence, and nursing professional value among nursing students.

Method: From March 16, 2020 to April 15, 2020, data was collected from 4th grade nursing students enrolled in the nursing departments located in Cheongju-si, Chungcheongbuk-do, and Mungyeong-si, Gyeongsangbuk-do. Percentage, mean, standard deviation, t-test, ANOVA, Pearson correlation and multiple regression analysis were conducted for the collected data using SPSS program.

Result: The factors affecting the nursing professional value of nursing students were ethical decision-making confidence($\beta=.347$, $p<.001$) and forensic nursing competence($\beta=.285$, $p<.001$). The two factors had the explanatory power(24.1%) for the nursing professional value of nursing students.

Conclusion: In order to establish and improve the desirable nursing professional value based on the results of this study, it is thought that this study can be used as basic data for the development of educational programs that can cultivate ethical decision-making confidence with the development of forensic nursing curriculum.

Keywords: Forensic Nursing Competence, Ethical Decision-Making Confidence, Nursing Professional value, Nursing, Students

1. Introduction

The judicial environment has been changed, that is, a jury system in which the general public directly participate in trials as a jury was introduced to Korea in Jan, 2008 in preparation for the opening of the legal market, trial-centeredness is strengthened, and evidence-oriented judicialism is emphasized[1]. The medical environment has been also affected by these changes, so a nurse is required to play the forensic nursing role. The forensic role for the recognition, collection and preservation of evidence as well as physical and psychological care as a nurse is emphasized to be necessary[2,3]. Sullivan argued in a study[4] that nurses should have the basic competence to prove legal facts in the hospital environment and that they should be able to express forensic knowledge and skills in addition to their existing nursing competence, and also presented the forensic nursing competence that clinical nurses can show by classifying it into knowledge and skills. Therefore, nurses should continue to provide forensic nursing and maintain the continuity of evidence, which requires nurses in various fields dealing with trauma patients, such as emergency rooms, outpatients, wards, intensive care units and operating rooms in hospitals, to acquire the knowledge and skills of forensic nursing essential for practice, and to have a professional attitude[5]. However, the Department of Forensic Nursing at the Graduate School of Investigative Science was established in the 2000s, The history of forensic nursing is short, and the research and awareness of it are still insufficient, indicating that nurses have a lack of forensic nursing knowledge. Moreover, most nursing colleges do not have forensic nursing education. Ethical decision-making is considered one of the major roles of a profession, and the nurse is often required to be responsible for decisions with ethical decision.

The confidence in ethical decision-making is a subjective recognition of one's ability, which means identifying value confusion, recognizing role expectations, recognizing readiness for technology and knowledge, and recognizing the ability to do the right thing in a given situation on one's own. When recognizing the environment and problems in a variety of situations which nurses face at a working field, and when making decisions based on one's own values and knowledge, that is, nursing professional value, they need to have confidence in decision-making. Nursing students may experience ethical dilemmas and conflicts over the damage of patient rights and dignity, failure of treatment and nursing standards, death preparation and death, and failure of nurses to perform practical duties in accordance with principles, which may lead to negative perceptions of a nursing profession. It is thought that the negative perception may affect nursing professional value.

Nursing professional value is a systematized view of nursing as a profession, and a professional conscious view of a nursing activity course in charge of nursing and the job itself[6]. Nursing professional value is based on values, so it provides criteria for behavior and a framework for assessing behavior[7]. Therefore, it is important to understand the value in order to effectively respond to ethical dilemmas or conflicts in nursing practice. Value is a basic view of nursing, expressed as the basic element of decision-making which affects the socialization of a perfect profession, the distinctness of nursing, and the practical business. As values are

the existing belief in what is right and desirable, and motivate one to act socially and professionally, it can be seen that values and confidence are close. Therefore, establishing a desirable nursing professional value is directly related to ethical decision-making confidence.

Accordingly, this study was aimed to prepare basic data for the development of curriculum and education programs for the role of forensic nurses which is newly required by examining the relationship between forensic nursing competence, ethical decision-making confidence, and nursing professional value that fourth-year nursing students, prospective nurses, perceive and by grasping the factors that affect nursing professional value.

2. Materials and Methods

2.1. Study Design

This study is a descriptive research study to identify the relationship between forensic nursing competence, ethical decision confidence, and nursing professional value that fourth-year nursing students with clinical practice experience perceive.

2.2. Study Subjects

The subjects of this study were 128 fourth-year nursing students with clinical practice experience among the students attending the nursing department of universities located in Cheongju-si, Chungcheongbuk-do or Mungyeong-si, Gyeongsangbuk-do. For the number of subjects, 107 people were calculated as a result of inputting the significant level: 0.05, power: 0.95, effect size: 0.15, and explanatory variable: 2 for the regression analysis using G-power 3.1.9.2 program, and a total of 128 people were surveyed considering the dropout rate of 20%. A total of 114 questionnaires were used for analysis, excluding 14 incomplete responses.

2.3. Research Tools

2.3.1. Forensic Nursing Competence

The measuring tool of forensic nursing competence is a tool developed by Jo Nah- Young(2017), consisting of eight sub-factors, that is, nursing practice, information delivery, critical thinking, care and evidence management, active information gathering, expertise development, and knowledge integration, with a total of 53 questions. 4-point Likert scale was used, where the higher the score, the higher the degree of forensic nursing competence. In the study at the time of tool development, it was Cronbach's α (.96), and in this study, it was Cronbach's α (.98).

2.3.2. Ethical Decision-Making Confidence

The contents on the ethical decision-making confidence were measured using the tool that Kim Chi Hye(2012) modified and supplemented with the Perceived Medical Confidence Scale Tool (PECS) developed by Sulmacy et al.(1990). This tool consisted of a total of nine questions, and 5-point Likert scale, which was from "Not at all"(1point) to "Very much" (5points) for each question, was used, where the higher the score, the higher ethical decision-making confidence. At the time of tool development by Laabs(2012), the reliability of the tool was Cronbach's α (.86), and in this study, it was Cronbach's α (.90).

2.3.3. Nursing Professional Value,

For the contents of nursing professional value, the tool that Kim Myung-Hee(2008) modified and supplemented with the measuring tool developed by Yoon Eun-Ja(2005) was used. The tool consisted of five sub-areas, which included a total of 18 questions, such as professional self-concept(6), social awareness(5), nursing expertise(3), role of nursing(2), and identity of nursing(2), and 5-point Likert scale, which was from "Not at all"(1point) to "Very much" (5points) for each question, was used, where the higher the score, the better the nursing professional value is established. In the study at the time of tool development, it was Cronbach's α (.91), however, in this study, it was Cronbach's α (.84).

2.4. Data Collection Method

This research data was collected from March 16, 2020 to April 15, 2020 for fourth-grade nursing students with clinical practice experience among the students attending nursing departments at universities located in Cheongju, Chungcheongbuk-do and Mungyeong, Gyeongsangbuk-do. Prior to data collection, the researcher explained the purpose of the study and the contents of questionnaire to the professor in charge of nursing at the university by wire, and received consent for research performance. And then the researcher visited the university on a promised date in connection with the research performance, and conducted data collection. The researcher and research personnel distributed questionnaires only to those who gave written consent to participate in the research, and the completed questionnaires were allowed to be placed in the collection box that the researcher and research personnel prepared. It took about 15 minutes to complete the questionnaire.

2.5. Data Analysis

The collected data were analyzed using the SPSS/WIN 22.0 program(IBM Corp, Armonk, NY, USA) and the specific analysis methods are as follows. The general characteristics of the subjects were analyzed with real number, percentages, means and standard deviation, forensic nursing competence, ethical decision-making confidence and nursing professional value were done with means and standard deviation, and the difference between nursing professional values according to the general characteristics was done with t-test and ANOVA, and Scheffe test was conducted for the post-verification test. The correlation between forensic

nursing competence, ethical decision-making confidence, and nursing professional value was analyzed using Pearson correlation coefficient, and in order to identify factors affecting nursing professional value, multiple regression analysis was conducted.

3. Results and Discussion

3.1 Results

3.1.1 General Characteristics of Subjects

The general characteristics of study subjects are like Table 1. There were 100 women(87.7%) among 114 nursing students in 4th grade with clinical experience, The average age of the subjects was 22.14 ± 1.30 years. In major satisfaction, 60 people(52.6%) and 15 people(13.2%) showed 'satisfaction' and 'much satisfaction' respectively. In motivation for choosing a major, 49 people(43%) chose it for high employment rate, and 35 people(30.7%) did it for aptitude(30.7%). In the total clinical practice period, 87 people(76.3%) had a clinical practice period over six months. In the characteristics related with forensic nursing, 71 people(62.3%) and 19 people(16.7%) responded, "We don't know" or "We know nothing", respectively. For whether they completed forensic nursing education or not, 99 people(86.8%) said they didn't receive the forensic nursing education, and 96 people(84.2%) said that they needed the education for the necessity of forensic nursing education. In addition, for the forensic nursing education type, it appeared in the order of 43 students(37.7%) in the regular curriculum, and 40 students(35.1%) in special lectures< Table 1>.

Table 1. General Characteristics of Subjects

N=114

Variables	Categories	No(%)	Mean±SD
Gender	Male	14(12.3)	
	Female	100(87.7)	
Age(year)	20~22	81(71.1)	22.14±1.30
	23~25	31(27.2)	
	≥26	2(1.8)	
Academic Grade	4th	114(100.0)	
degree of satisfaction with major	Very unsatisfied	1(0.9)	
	Unsatisfied	4(3.5)	
	Moderate	34(29.8)	
	Satisfied	60(52.6)	
	Very satisfied	15(13.2)	
Motives for selecting department	Grades	3(2.6)	
	Aptitude	35(30.7)	
	High employment rate	49(43.0)	
	People's recommendations	26(22.8)	
	Other	1(0.9)	
Total Clinical Practice Period	<3 months	3(2.6)	
	3 – 6 months	24(21.1)	
	≥6 months	87(76.3)	
Awareness of a forensic nurse	Very known	8(7.0)	

	Known	16(14.0)	
	Unknown	71(62.3)	
	Never unknown	19(16.7)	
Experience in forensic nursing education	Yes	15(13.2)	
	No	99(86.8)	
Necessity for forensic nursing education	Yes	96(84.2)	
	No	18(15.8)	
Form of forensic nursing education	Special lecture	40(35.1)	
	Regular curriculum	43(37.7)	
	Training education	25(21.9)	
	Other	6(5.3)	

3.2.2. Forensic Nursing Competence, Ethical Decision-making Confidence, and Degree of Nursing Professional Value

Forensic nursing competence, ethical decision-making confidence, and the degree of nursing professional value of the study subjects are like Table 2. The overall average score in forensic nursing competence was 3.32 ± 0.39 out of 4. It was 3.66 ± 0.56 out of 5 in the ethical decision-making, and 3.72 ± 0.49 out of 5 in the nursing professional value < Table 2>.

Table 2. Degree of Variables Recognized By Subjects

Variables	Mean \pm SD	Range
Forensic Nursing Competency	3.319 \pm 0.389	1-4
Ethical Decision-Making Confidence	3.660 \pm 0.557	1-5
Nursing Professional Value	3.716 \pm 0.486	1-5

3.3.3. Difference Between Nursing Professional Values According to the General Characteristics of the Subjects

The difference between nursing professional values according to the general characteristics of the study subjects is like Table 3. As a result of examining the difference between nursing professional values according to the general characteristics, there was no statistically significant variable.

Table 3. Differences in Nursing Professional Value by General Characteristics

Variables	Categories	N	Nursing Professional Value	
			Mean \pm SD	t or F(p)
Gender	Male	14	3.78 \pm 0.63	.291(.591)
	Female	100	3.71 \pm 0.47	
Age(year)	20~22	81	3.67 \pm 0.48	1.312(.273)

	23~25	31	3.81±0.51	
	≥26	2	4.00±0.31	
degree of satisfaction with major	Very unsatisfied	1	4.27±0.00	1.892(.117)
	Unsatisfied	4	3.31±0.61	
	Moderate	34	3.67±0.47	
	Satisfied	60	3.71±0.48	
	Very satisfied	15	3.93±0.45	
Motives for selecting department	Grades	3	3.89±0.80	.265(.900)
	Aptitude	35	3.71±0.49	
	High employment rate	49	3.71±0.49	
	People's recommendations	26	3.70±0.48	
	Other	1	4.11±0.00	
Total Clinical Practice Period	<3 months	3	3.80±0.03	.125(.882)
	3 – 6 months	24	3.75±0.51	
	≥6 months	87	3.70±0.49	
Awareness of a forensic nurse	Very known	8	3.59±0.54	.745(.527)
	Known	16	3.79±0.42	
	Unknown	71	3.74±0.46	
	Never unknown	19	3.60±0.62	
Experience in forensic nursing education	Yes	15	3.57±0.47	1.635(.204)
	No	99	3.74±0.49	
Necessity for forensic nursing education	Yes	96	3.70±0.49	.496(.483)
	No	18	3.79±0.49	
Form of forensic nursing education	Special lecture	40	3.75±0.48	.111(.953)
	Regular curriculum	43	3.69±0.53	
	Training education	25	3.70±0.40	
	Other	6	3.70±0.68	

3.3.4. Correlation Between Forensic Nursing Competence, Ethical Decision-Making Confidence, and Nursing Professional Value

The correlation between forensic nursing competence, ethical decision-making confidence, and nursing professional value is like Table 4. As a result of testing the correlation between forensic nursing competence, ethical decision-making confidence, and nursing professional value, there was a positive relationship between forensic nursing competence and ethical decision-making confidence ($r=.27(p<.01)$), which was statistically significant, and a positive relationship between forensic nursing competence and nursing professional value ($r=.38(p<.001)$), which was statistically significant. In addition, there was a positive relationship between ethical decision-making confidence and nursing professional value ($r=.42(p<.001)$), which was a statistically significant < Table 4 >.

Table 4. Correlation among Forensic Nursing Competency, Ethical Decision-Making Confidence, and Nursing Professional Value

Variables	Forensic Nursing Competency	Ethical Decision-Making Confidence	Nursing Professional Value
	r(p)		
Forensic Nursing competency	1		
Ethical Decision-Making Confidence	.272**	1	
Nursing Professional Value	.379***	.424***	1

*p<.05 **p<.01 ***p<.001

3.3.5. Factors Affecting Nursing Professional Value

In order to identify the factors affecting the nursing professional value of nursing students, multiple regression analysis was performed, and the results are like Table 5. There were no significant variables affecting nursing professional value according to the general characteristics, and multiple regression analysis was performed by inputting the variables of ethical decision-making confidence and forensic nursing competence which were significantly correlated as independent variables. As a result of diagnosing the basic assumptions of multiple regression analysis and multicollinearity for nursing professional value, Durbin-Watson was close to 2 with 2.060, which satisfied the independence. As a result of testing multicollinearity, tolerance was 0.1 or higher, and Variance Inflation Factor(VIF) was less than 10, which confirmed no problem in multicollinearity. Accordingly, the basic assumptions for performing multiple regression analysis were satisfied.

As a result of multiple regression analysis, the factors affecting nursing professional value were ethical decision-making confidence($\beta=.347$, $p<.001$), and forensic nursing competence($\beta=.285$, $p<.001$). The relative influence of independent variables was in order of ethical decision-making confidence and forensic nursing competence. The F statistic for the goodness of fit of the estimated regression model was 18.98($p <.001$), which was significant, and the explanatory power of this model was 24.1%.

Table 5. Factors affecting for Nursing Professional Value

Variables	B	SE	β	R ²	Adj. R ²	t	p
Constant	1.426	.385				3.702	
Ethical Decision-Making Confidence	.303	.074	.347	.180	.172	4.071	.000
Forensic Nursing Competency	.356	.106	.285	.255	.241	3.344	.000

R²=.255, Adj. R²=.241, F=18.976, p<.001

3.2 Discussion

This study was attempted to identify the factors affecting forensic nursing competence, ethical decision-making confidence, and the degree of nursing professional value for 4th year nursing students with clinical practice experience and to grasp the factors that affect the nursing professional value.

The forensic nursing competence of the subjects of this study was an average rating of 3.32 out of 4, and there were no prior studies which examined the forensic nursing competence for nursing students with the same tool. However, the forensic nursing competence investigated with the forensic-nursing competencies for emergency room nurses developed in the study of Jo Na-young[8] was 49.71±15.06 points. The forensic-nursing competencies developed in the study of Jo Na-young[8] had 13 questions,

with a minimum score of 0 to a maximum of 100, and the closer to 100, the higher the nursing competence. At the time of tool development, it was Cronbach's α (.90). Although it is difficult to directly compare the forensic nursing competence between nursing students and emergency room nurses, it is thought that the forensic nursing competence score of the emergency room nurses would be higher, because they can be trained through various forensic situations in the clinical field than nursing students.

The ethical decision-making confidence of nursing students was an average rating of 3.66 out of 5, and the study of Lim Mi-hye[9] showed a similar result for the ethical decision-making confidence measured for nursing students(3.54 points). Except for one study for nursing students, the ethical decision-making confidence for nurses was 3.31 points and that for nursing students was 3.40 points, that is, nursing students had higher ethical decision-making confidence than nurses. It is thought that though nurses had ethical decision-making confidence on issues related to respect for human life and rights, and life and death at the clinical site, they showed a relatively lower score than nursing students, as they had difficulties in making ethical decisions due to organizational atmosphere and lack of nursing personnel[7, 10].

The nursing professional value of nursing students was an average rating of 3.72 out of 5, that surveyed for 4th grade nursing students in Seoul and Incheon was an average rating of 3.43 in the study of Jo & Kim[11], 3.76 in the study of Gu Hye-ja and Lee Oe-seon[12], and 3.82 in the study of Kim Yun-kyung & Jung Min-young[13], which were similar to the results of this study. In this study, there were no variables that significantly affected nursing professional value according to general characteristics, but in prior studies, age, grade, religion, major satisfaction, clinical practice experience, clinical practice satisfaction, ethics code recognition, and nurse image were factors that affected the nursing professional value, which was different from the results of this study. It is considered that it will be necessary to conduct repetitive studies to identify factors affecting nursing professional value for nursing students nationwide in the future [14-16].

There was a positive correlation between forensic nursing competence, ethical decision-making confidence, and nursing professional value. In the study of Kim Chi Hye(2014), the ethical decision-making confidence for nurses was consistent with the results showing a moderately significant positive correlation with the nursing professional value($r=.440$, $P=.001$). There have been no prior studies examining the correlation between forensic nursing competence and nursing professional value, however, nursing students are unaware of a systematic way to resolve ethical dilemmas or conflict situations in clinical practice sites. It is thought that these conflicts will affect the negative perception of nursing profession among nursing students. It is suggested that studies will be conducted for nursing students to find out the relationship between forensic nursing competence and nursing professional value in the future.

It was indicated that the factors affecting the nursing professional value were forensic nursing competence and ethical decision-making confidence, which had 24.1% explanatory power. The establishment of a desirable nursing professional value for nursing students can be seen as a necessary element for nursing students to develop a professional quality by acquiring a professional major knowledge, and cultivating responsibility and ethical consciousness as profession in the education curriculum of nursing department.

In summary, in order to increase the nursing professional value of nursing students, it is necessary to develop the forensic nursing education curriculum at the school level and programs to promote the ethical decision-making confidence so that students can gain experience with which they can deal with a variety of ethical situations in the clinical field. To this end, it is thought that it is necessary to arrange the process to educate about various forensic and ethical issues that may occur in the clinical field, and to develop a simulation scenario related with the forensic nursing so that the students can actually apply and practice it. As a limitation of this study, first, data collection was conducted only for 4th year nursing students with experience in clinical practice, so there is a limit in representing all nursing students, so care must be taken in interpreting the results. Second, nursing students, the subjects of the study, could have fewer opportunities to perform treatment and nursing activities for patients with various ethical situations and legal problems in the clinical nursing field. Accordingly, it may be somewhat insufficient to explain forensic nursing competence, ethical decision-making confidence, the degree of nursing professional value, and the relationship between them.

4. Conclusion

As a result of this study, it was indicated that there was a significant correlation between the forensic nursing competence, ethical decision-making confidence and nursing professional value of 4th year nursing students. The factors affecting nursing professional value were forensic nursing competence, and ethical decision-making confidence. It is thought that it is necessary to develop and operate the forensic nursing curriculum and effective programs at the school level which can improve the forensic nursing competence and ethical decision-making confidence of nursing students so that they can fulfill the newly required forensic nursing role in a changing medical environment. It is thought that the nursing students, prospective medical practitioners, can properly perform the role of forensic nurses for patients who are physically and mentally injured due to various incidents and accidents through this, and that they can improve nursing performance by firmly establishing the nursing professional value.

5. References

1. Jeong O.S. (2007). A effect that the expert opinion on the forensic medicine is influenced in the connection with court-oriented trials. *Korean Journal of Criminology*, 19(2), 283-290.
2. Lynch VA. (2006). *Concepts and theory of forensic nursing*. In: Lynch VA., Duval JB. editors. Forensic nursing. 1st ed. St.Louis, MO:elsevier mosby, 19-29.
3. Emergency Nursing Association< homepage on the internet> Position statement; Forensic Evidence collection. (2011).

Retrieved september 9 from <http://www.ena.org/publiccaations/statements/positionpdf>, forensicevidence.pdf.

4. Sullivan KM. (2006). *Forensic nursing in hospital setting*. In: Lynch VA., Duval JB. editors. Forensic nursing. 1st ed. St.Louis, MO:elsevier mosby, 551-569.
5. Eldredge K. (2008). Assessment of trauma nurse related to forensic practice. *Journal of Forensic Nursing*, 4(4), 157-165.
6. Wies, D. & Schank, M. J. (1997). Toward building an international consensus in professional values, *Nurse Education Today*, 17(5), 366-369.
7. Kim J. H. (2012). *The Relationships Among Ethical Dilemma, Professional Values, Ethical Confidence of Clinical Nurses*. Master's thesis. Chungnam national University. Daejeon. <http://www.riss.kr/index.do>
8. Jo N.Y.(2011). *Forensic-Nursing Performance and Competency Levels Of Emergency Department Nurses*. Master's thesis. Kyungpook National University. Daegu.
9. Lim M. H.(2016). Effects of Moral Sensitivity and Critical Thinking Disposition on Perceived Ethical Confidence in Nursing Students . *Journal of the Korea Academia-Industrial cooperation Society*, 17(9). 610-618.
10. Lee K. J.& Yoo S. Y.(2011). Relationships between Nurses' Ethical Dilemma, Coping Types, Job Satisfaction and Turnover Intention in Korea, *The Journal of Korean Clinical Research*, 17(1), 1-15.
11. Cho H. H. &, Kim N. H.(2014). Relationships among nursing professionalism, nurse image, and core elements of nursing professionalism that nursing students perceive, *The journal of Korean Academic Society of Nursing Education*, 20(4), 548-557.
12. Gu H. J. & Lee Y. S.(2015). The Correlation between Nurse's image, Biomedical ethics and Professionalism in Nursing Students, *Journal of the Korea Academia-Industrial cooperation Society*,16(11), 7356-7366.
13. Kim Y. K. & Jeong M. Y.(2019). Influence of Nursing Professionalism and Campus Environment on the Perception of Ethical Sensitivity among Nursing Students , *The Journal of Korean academic society of nursing education*, 25(1), 115-124.
14. Mishra, S., Tripathy, H. K., Mallick, P. K., Bhoi, A. K., & Barsocchi, P. (2020). EAGA-MLP—An Enhanced and Adaptive Hybrid Classification Model for Diabetes Diagnosis. *Sensors*, 20(14), 4036.
15. Bhoi, A. K., Mallick, P. K., Liu, C. M., & Balas, V. E (Eds.) (2021). *Bio-inspired Neurocomputing*, Springer.
16. Oniani, S., Marques, G., Barnovi, S., Pires, I. M., & Bhoi, A. K. (2020). Artificial Intelligence for Internet of Things and Enhanced Medical Systems. In *Bio-inspired Neurocomputing* (pp. 43-59). Springer, Singapore.