Nursing Students' Knowledge, Ethical Sensitivity, And Intention Of Care During The Covid 19 Pandemic In South Korea

Do-Young Lee[1] , Joo-Young Lee [2*]

[1] Department of Nursing, Changshin University, 262, Palyongro, Masanhoewon-gu, Changwon-si, Gyeongsangnam-do, 51352, Korea, (ORCID 0000-0003-3854-0128)
[2] Department of Nursing, Seoul Women's College of Nursing, 38, Ganhodae-ro, Seodaemun-gu, Seoul, 03617, Korea, (ORCID 0000-0003-1334-6871)

Abstract:

Background: A pandemic, such as the one caused by coronavirus disease 2019 (COVID-19), can be socially life-threatening. **Objective:** To identify predictors of intent to provide care for patients with a novel infectious disease (NID) among nursing students. **Methods:** We used a descriptive survey to examine nursing students' knowledge regarding NIDs, ethical sensitivity, and intent to provide care for patients with NIDs. We analyzed 177 students from two nursing schools in South Korea. We examined differences in study parameters according to general characteristics via descriptive statistics, one-way analysis of variance (ANOVA), and an independent t-test. Through Pearson's correlation, we scrutinized correlations between the intent to provide care for patients with an NID and other variables. Using hierarchical multiple regression, we investigated predictors of intent to provide care for patients with an NID. **Results:** Ethical sensitivity was positively correlated with intent to provide care for patients with an NID. The most potent predictor of intent to provide care for patients with an NID was ethical sensitivity, followed by perceived ethical values. Both predictive factors explained 36.5% of the variance of intent to provide care for patients with an NID. **Conclusions:** Our findings could facilitate the development of intervention programs for nursing students, helping them to cultivate ethical values in providing care for COVID-19 patients. It is expected that the results will serve as a basis for developing an intervention program that can improve nursing students' ethical attitudes toward nursing patients with COVID-19 infection and increase their intention to care for affected patients.

Keywords: Knowledge, Ethical sensitivity, Intent to provide care, Nursing students, COVID-19

INTRODUCTION

Coronavirus disease 2019 (COVID-19), a novel infectious disease, is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (Lee & Kim, 2020), By October 2021, there were 240,590,000 confirmed cases and 4.9 million deaths (Ncov, 2021). With the global spread of the virus, the World Health Organization (WHO) declared a public health emergency of international concern on January 30, 2020 (World Health Organization, 2021). Given the subsequent rise in cases worldwide, the WHO declared COVID-19 a pandemic on March 11, 2020 in line with the Hong Kong flu (1968) and H1N1 pandemic (2009). Moreover, it published behavioral guidelines for effective prevention and strongly urged the public to comply with them (World Health Organization, 2021; Choi et al., 2021).

Worldwide, individuals must adhere to the WHO (and national) regulations and recommendations regarding novel infectious diseases which are based on accurate knowledge of preventing or stopping the spread of novel infectious diseases. Further, healthcare providers are ethically responsible for protecting personal information, reporting, enforcing mandatory quarantines, treating suspected patients, distributing resources, and ensuring adequate quality of care (World Health Organization, 2021).

Further, they are expected to provide care for patients despite the risk of infection (Devnani et al.,

2011), and most of them are willing to do so (Ehrenstein et al., 2006). However, they experience confusion during the outbreak of a novel infectious disease due to a lack of clear ethical standards and conflicts among various rules and principles. Additionally, they face an ethical dilemma given the threat of contracting the disease and spreading it to their families; therefore, they experience an ethical burden in their decision-making (Ehrenstein et al., 2006).

During a novel infectious disease disaster, healthcare providers can become victims as first responders; moreover, compared to the general public, they are more frequently faced with ethical quandaries and consequent ethical conflicts (Pak, 2021). Although all healthcare personnel face grave challenges during a pandemic, nurses, who are responsible for providing direct care to patients, experience ethical conflicts much more frequently (Pak, 2021).

In this context, ethical sensitivity is the ability to determine and engage in ethically desired actions during conflict-laden situations (Clarkeburn, 2002). Further, it is a crucial component of ethical nursing practice (Milliken, 2016). Nurses without ethical sensitivity are insensitive to ethical problems in nursing settings and only focus on routine care without considering the unethicality of their practices (Weaver et al., 2008). Contrastingly, nurses with high ethical sensitivity can make prompt and responsible decisions in various situations, including conflict-laden situations (Milliken, 2016).

As of July 13, 2020, 77 nurses were infected, accounting for 58% of all medical personnel infected. The pandemic has significantly influenced nursing education, and nursing students' practices for patients with new infectious diseases are essential for their future work. Most studies on professionals' intentions toward new infectious diseases have investigated nurses. Research on nursing students is needed because how patients are cared for voluntarily in the event of an outbreak can affect the quality of nursing practices (Park et al., 2021).

Nurses, who remain near patients, are directly exposed during outbreaks of novel infectious diseases. Diverse and unfamiliar ethical situations arise, which require decision-making based on ethical values (Pak, 2021). Therefore, there is a need to foster an environment that equips nursing students, who are prospective nursing professionals, with competencies and ethics which will help them respond to novel infectious diseases in clinical practice and which will foster in them a willingness to provide care for such patients.

Therefore, there is a need to elucidate nursing students' intent to provide care for patients with a novel infectious disease and improve it through regular curriculum and other programs.

Objective

This study aimed to examine nursing students' knowledge regarding novel infectious diseases, ethical sensitivity, and intent to provide care for patients with a novel infectious disease.

METHODS

Study design and participants

This descriptive survey enrolled nursing students from two nursing schools in South Korea. To be included, the participants had to be current students who did not plan to take a leave of absence or drop out. The sample size was determined using the G*Power 3.1.4 software (Faul et al., 2007) and regression analysis with a medium effect size of .15, a significance level of 5%, a power of 90%, and 9 predictors. The minimum sample size was calculated to be 112. Considering potential withdrawals and analyses by school year, we enrolled 180 students to convenience sampling. There were two unrecovered questionnaires and one questionnaire that responded appropriately or insincerely. The final analysis included data from 177 students.

Instruments

We developed an instrument for measuring knowledge of novel infectious diseases based on WHO's data regarding diseases that may cause a pandemic (Ncov, 2021; World Health Organization, 2021). The instrument was modified and supplemented based on expert advice to enhance the content validity. Given that a panel of 3–10 experts is considered desirable for testing content validity (Lynn, 1986), our panel comprised two nursing professors, one infection nurse, one pulmonologist, and one PhD holder with scale development experience. The content validity index was ≥0.80. The final instrument contained 16 items, including 4 items on the cause and incubation period of novel respiratory infectious diseases, 4 items on the transmission route and diagnostic criteria, 4 items on symptoms and treatment, and 4 items on quarantine

and release from quarantine. An incorrect answer or "I do not know" received a score of 0, while a correct answer received a score of 1. The total score ranged from 0 to 16, with a higher score indicating greater knowledge level.

Ethical sensitivity was measured using a 34-item tool developed by Chung and Seo (2020). This tool comprises eight subscales (patient respect, professional ethics, nursing practice responsibilities, empathy, perception of the ethical situation, ethical burden, ethical contemplation, and willingness to do good). Each item is rated on a 5-point Likert scale, with a higher score indicating higher ethical sensitivity. The tool reliability (Cronbach's α) was 0.92 in the study by Chung and Seo (Yoo et al., 2005) and 0.86 in this study.

We used the tool developed by Yoo et. al. (Yoo et al., 2005) for examining nurses' intent to provide care for infected patients during an epidemic and describing related factors. This 46-item tool comprises seven subscales (behavioral beliefs, normative beliefs, control beliefs, attitude toward patient care, subjective norm, perceived behavioral control, and intent to provide care for patients with a novel infectious disease). Each item was rated on a 7-point Likert scale; additionally, the tool reliability (Cronbach α) was 0.87 in the study by Yoo et. al. (Yoo et al., 2005) and 0.86 in this study.

Data collection and ethical considerations
After obtaining approval from an Institutional Review Board (SWCN-20180-HR-011), we collected data from first- to fourth-year nursing students in two schools between August 1, 2021, and September 30, 2021, using a structured questionnaire. The students provided voluntary informed consent after receiving detailed information regarding the study purpose, questionnaire duration, protection of personal information, and study content. Participants were aware that they could withdraw from the study at any time. The survey was conducted remotely via Google. The researcher fully explained the study's purpose in light of ethical issues and then distributed the questionnaire. In order to protect the information of the participants, we did not include information that could identify them in the questionnaire. The questionnaire was sufficiently received and answered, and a contact number was specified given the potential need to make additional inquiries. It

was explained that the data would be discarded after the study was completed and would not be used except for the purpose of the study. It took the participants about 10 minutes to respond to the questionnaire.

Data analysis
Statistical analyses were performed using SPSS software (version 25.0, IBM Corporation, Armonk, New York, USA). Statistical significance was set at $p < 0.05$. Differences in study parameters based on general characteristics were analyzed using descriptive statistics, one-way ANOVA, and independent t-test. Correlations between intent to provide care for patients with a novel infectious disease and relevant variables were analyzed using Pearson's correlation analysis. Predictors of intent to provide care for patients with a novel infectious disease were identified using hierarchical multiple regression.

RESULTS
The mean age of the participants was 23.19 years. There were no significant differences in knowledge regarding novel infectious diseases according to general characteristics. Ethical sensitivity (F=4.04, p=.008) and the intent to provide care for patients with a novel infectious disease (F=4.77, p=.003) significantly differed according to ethical values [Table 1].

Knowledge regarding novel infectious diseases was not correlated with ethical sensitivity (r=.001, p=.992) and the intent to provide care for patients with a novel infectious disease (r=.442, p=.576). Ethical sensitivity was positively correlated with the intent to provide care for patients with a novel infectious disease (r=.42, p<.001) [Table 2].

In the regression analysis, the stepwise regression model was significant (F=6.660, p<.001); moreover, we analyzed equal variance, normality, and the multi-collinearity of the residuals. Tolerance was above 0.1 at a range of .580–.963, while the variance inflation factor was below 10 at a range of 1.04–1.73, confirming the absence of multi-collinearity. The Durbin Watson statistic was close to 2 at 1.938, confirming the absence of autocorrelation, and therefore, confirming that the assumption of equal variance was met. The most potent predictor of the intent to provide care for patients with a novel infectious disease was ethical sensitivity (β=.560,

p<.001), followed by perceived ethical values (β=.158, p=.011). Moreover, both predictive factors explained 36.5% of the variance of the intent to provide care for patients with a novel infectious disease [Table 3].

DISCUSSION

An outbreak of Middle East Respiratory Syndrome (MERS) occurred in South Korea in 2015. Although the disease had been detected early on, systematic guidelines were not provided and the virus spread within healthcare facilities (Lee et al., 2018). Of the infected patients at that time, 13.4% were healthcare providers and among them, 60% were nurses. Therefore, the experience was negatively perceived by them due to anxiety, fear, and stress about having to provide care for patients with a novel infectious disease (June & Choi, 2016). Nurses in South Korea were reported to experience escalated role conflicts, role ambiguity, and fatigue during the MERS epidemic (Lee et al., 2018). Further, a Taiwanese study on frontline nurses during the SARS epidemic reported that 12% of nurses showed diminished willingness to provide care given the fear of infection; moreover, 25% of the nurses wanted to quit their jobs (Shiao et al., 2007). The worldwide spread of an infectious disease and the resulting stress, psychological anxiety, and concerns regarding infection and providing care for infected patients reportedly decreased the nurses' willingness to provide patient care and elevated their intent to leave their jobs (Shiao et al., 2007). Specifically, nurses who were involuntarily involved in care experienced severe pathological psychology and a post-traumatic stress response (Chen et al., 2005). Since nurses who provide care for patients with a novel infectious disease are directly and indirectly exposed to infection, there is a need to understand and address factors influencing their intent to provide care, which will help reduce their negative perceptions and the consequent psychological impact.

Strengths of the study

Stress, anxiety, psychological conflict, and excessive tension resulting from a pandemic cause nurses to refuse to provide care for affected patients, in addition to exacerbating their turnover intention (Shiao et al., 2007). Additionally, nursing

professionals are crucially involved in effectively responding to disasters caused by the outbreak or epidemic of a novel infectious disease (Moon & Park, 2021). Therefore, the study examines predictors of intent among nursing students in providing care for patients with a novel infectious disease, and the factors that influence it. The study also makes suggestions for programs that will positively influence the intent and boost nurses.

Limitations of the study

The purpose of this study was to identify factors affecting nursing students' intention to care for patients with novel infectious diseases in the context of COVID-19. However, there is a limitation in generalizing the findings to all nursing students because only a certain number of nursing students participated in the study.

Practical implications

Since healthcare providers are expected to provide patient care despite the infection risk, they experience ethical conflicts and feel burdened when making various ethical decisions (Chae et al., 2021). Further, numerous nurses experience difficulty with ethical decision-making, given the lack of experience in handling disasters and limited exposure to such environments (Kim et al., 2014). However, healthcare providers should be equipped with moral and ethical sensitivity that facilitates responsible, ethical decision making for providing high-quality care (Lim, 2017). Therefore, there is a need for educational curricula and programs focusing on the principles of biomedical ethics.

Future directions

In our study, the most potent predictor of the intent to provide care for patients with a novel infectious disease was ethical sensitivity, followed by perceived ethical values. Since the world is periodically affected by novel infectious diseases and prolonged consequent disasters, there should be further emphasis on the significance of ethical awareness and decision-making in healthcare providers. To address the shortage of nursing staff and promote nurses' willingness to provide care for patients with infectious diseases, various programs and counselling services that boost nursing students' ethical awareness should be implemented. It will prepare them to become responsible nursing

professionals.

CONCLUSION

We identified ethical sensitivity and perceived ethical values as the predictors of intent to provide care for patients with COVID-19. Both predictive factors explained 36.5% of the variance of the intent to provide care for patients with a novel infectious disease. Therefore, to effectively manage COVID-19 and prepare for future medical disasters, there is a need for programs that cultivate nursing students' ethical competencies.

Acknowledgment

We would like to thank everyone who participated in this study.

Funding

Conflict of Interest

"The authors declare no conflicts of interest."

References

1. Chae, S., Ryu, H., Oh, H., Lee, N., Lee, D., & Baek, S. (2021). Awareness about emerging infectious diseases, ethical awareness, and ethical decision-making in responding to emerging infectious diseases among Korea armed forces nursing academy cadets. Journal of Korean Academy of Community Health Nursing, 39, 54–67.

2. Chen, C. S., Wu, H. Y., Yang, P., & Yen, C. F. (2005). Psychological distress of nurses in Taiwan who worked during the outbreak of SARS. Psychiatric Services, 56(1), 76–79. https://doi.org/10.1176/appi.ps.56.1.76

3. Choi, W. H., Je, N. J., Seo, Y. M., & Lee, D. Y. (2021). Factors related to COVID-19 vaccination intention based on theory of planned behavior in convergence era. Journal of Digital Convergence, 19, 229–239.

4. Clarkeburn, H. (2002). A test for ethical sensitivity in science. Journal of Moral Education, 31(4), 439–453. https://doi.org/10.1080/0305724022000029662

5. Devnani, M., Gupta, A. K., & Devnani, B. (2011). Planning and response to the influenza A (H1N1) pandemic: Ethics, equity and justice. Indian Journal of Medical Ethics, 8(4), 237–240. https://doi.org/10.20529/IJME.2011.088

6. Kim, D. R., Kim, K. N., Lee, T., Han, E. K., & Kim, S. H. (2014). Factors influencing nurses' ethical decision-making regarding end-of-life care. Korean Journal of Medical Ethics, 17(1), 34–47. https://doi.org/10.35301/ksme.2014.17.1.34

7. Ehrenstein, B. P., Hanses, F., & Salzberger, B. (2006). Influenza pandemic and professional duty: Family or patients first? A survey of hospital employees. BMC Public Health, 6, 31–33.

8. Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis for the social, behavioral, and biomedical sciences. Behavior Research Methods, 39(2), 175–191. https://doi.org/10.3758/bf03193146

9. Joung, M. Y., & Seo, J. M. (2020). Development of an ethical sensitivity scale for clinical nurses, Journal of the Korean Academy of Fundamental of Nursing, 27(4), 375–386. https://doi.org/10.7739/jkafn.2020.27.4.375

10. June, K. J., & Choi, E. (2016). Infection control of hospital nurses: Cases of middle east respiratory syndrome. Korean Journal of Occupational Health Nursing, 25(1), 1–8. https://doi.org/10.5807/kjohn.2016.25.1.1

11. Lee, D. Y., Oh, S. E., & Lee, H. (2018). Effects of Role conflict and ambiguity, and fatigue on self-resilience in clinical nurses: After the MERS outbreak. Korean Journal of Occupational Health Nursing, 27, 77–88.

12. Lee, S. H., & Kim, J. M. (2020). Coronavirus disease 2019 (COVID-19): Pandemic and the challenge of public health. Korean Journal of Family Practice, 10(2), 87–95. https://doi.org/10.21215/kjfp.2020.10.2.87

13. Lim, M. H. (2017). Converged study of influencing factors on perceived ethical confidence in nurses. J. Korea Converg. Soc., 8, 75–84.

14. Lynn, M. R. (1986). Determination and quantification of content validity. Nursing Research, 35(6), 382–385. https://doi.org/10.1097/00006199-198611000-00017

15. Milliken, A. (2016). Nurse ethical sensitivity: An integrative review. Nursing Ethics, 25(3), 1–26

16. Moon, H. J., & Park, J. Y. (2021). Factors influencing intentions to care for emerging infectious disease patients among national and public hospitals nurses, J Korean Acad. Fundam. Nurs, 28, 11–22.

17. Ncov.mohw.go.kr(2021). Coronavirus disease (COVID-19) Overseas occurrence status [Internet]. http://ncov.mohw.go.kr/bdBoardList_Real. do?brdId=1&brdGubun=14&ncvContSeq= &contSeq=&board_id=& gubun=

18. Pak, S. Y. (2021). The influence of nursing students and nurses' awareness and practice of emerging infectious diseases, and ethical awareness on ethical decision-making. J. Korea Converg. So, 12, 61–70.

19. Park, S. J., Han, J. E., & Kwak, K. H. (2021). The influence of nursing students' knowledge, attitudes and infection prevention behaviors for COVID-19 upon the nursing intention for patients with the emerging infectious diseases. Korean Society of Nursing Research, 5(1), 13–23. https://doi.org/10.34089/jknr.2021.5.1.13

20. Shiao, J. S., Koh, D., Lo, L. H., Lim, M. K., & Guo, Y. L. (2007). Factors predicting nurses' consideration of leaving their job during the SARS outbreak. Nursing Ethics, 14(1), 5–17. https://doi.org/10.1177/0969733007071350

21. Weaver, K., Morse, J., & Mitcham, C. (2008). Ethical sensitivity in professional practice: Concept analysis. Journal of Advanced Nursing, 62(5), 607–618. https://doi.org/10.1111/j.1365-2648.2008.04625.x

22. World Health Organization. (2021). Coronavirus disease (COVID-19) pandemic [Internet]. https://www.who.int/emergencies/diseases/ novel-coronavirus-2019

23. Yoo, H. R., Kwon, B. E., Jang, Y. S., & Youn, H. K. (2005). Validity and reliability of an instrument for predictive nursing interaction for SARS patient care. Taehan Kanho Hakhoe Chi, 35(6), 1063–1071. https://doi.org/10.4040/jkan.2005.35.6.1063

Table 1. Study parameters according to the participants' general characteristics (n=177)

Variable	Category	n(%) or M ± SD	KID		ES		IPN		
			M ± SD	F or t (p)	M ± SD	F or t (p)	M ± SD	F or t (p)	
Age	23.19 ± 4.97								
Sex	Male	13 (6.9)	10.69 ± 3.79	-0.75	4.24 ± 0.43	-0.28	5.24 ± 0.75	0. 49	
	Female	164 (86.8)	11.50 ± 2.05	(.462)	4.27 ± 0.46	(.780)	5.15 ± 0.63	(.620)	
Religion	None	111 (58.7)	11.67 ± 2.03	1.51	4.21 ± 0.47	2.09	5.07 ± 0.64	2.07	
	Christian	38 (20.1)	11.08 ± 2.63	(.212)	4.39 ± 0.43	(.103)	5.26 ± 0.61	(.105)	
	Catholic	6 (3.2)	12.00 ± 1.26		4.50 ± 0.33		5.33 ± 0.58		

Category	Subcategory	n (%)	KN	t/F (p)	ES	t/F (p)	IPN	t/F (p)
	Buddhist	22 (11.6)	0.77 ± 2.46		4.32 ± 0.47		5.38 ± 0.64	
School year	1st year	38 (20.1)	11.84 ± 2.67		4.31 ± 0.49		5.29 ± 0.60	
	2nd year	71 (37.6)	11.30 ± 2.08	0.79 (.498)	4.20 ± 0.48	1.58 (.194)	5.22 ± 0.62	2.98 (.333)
	3rd year	16 (8.5)	10.94 ± 1.98		4.45 ± 0.26		5.28 ± 0.68	
	4th year	52 (27.5)	11.50 ± 2.12		4.29 ± 0.45		4.94 ± 0.64	
Ethical values	Very firm [a]	27 (14.3)	10.41 ± 2.89		4.51 ± 0.32		5.46 ± 0.67	
	Somewhat firm [b]	121 (64.0)	11.60 ± 2.01	3.36 (.411)	4.25 ± 0.46	4.04 (.008) a>d	5.17 ± 0.60	4.77 (.003) a>b
	Sometimes confused [c]	21 (11.1)	11.29 ± 2.26		4.07 ± 0.39		4.82 ± 0.56	
	Changes depending on the situation [d]	8 (4.2)	13.00 ± 1.30		4.29 ± 0.68		4.83 ± 0.83	
Know someone with a novel infectious disease	Yes	13 (6.9)	11.08 ± 3.35	-0.61 (.542)	4.20 ± 0.51	-0.57 (.569)	5.21 ± 0.84	0.31 (.759)
	No	164 (86.8)	11.47 ± 2.12		4.28 ± 0.46		5.15 ± 0.62	
Reason for college admission	Aptitude	50 (28..2)	11.34 ± 2.04		4.35 ± 0.38		5.33 ± 0.52	
	Recommendation	29 (16.4)	11.59 ± 1.99		4.13 ± 0.51		4.89 ± 0.55	
	Wanted	66 (37.3)	11.41 ± 2.32	0.23 (.946)	4.31 ± 0.44	1.21 (.303)	5.31 ± 0.61	5.35 (.100)
	Grades	5 (2.8)	11.80 ± 2.38		4.27 ± 0.49		5.19 ± 0.52	
	Employment	15 (8.5)	11.13 ± 2.26		4.15 ± 0.67		4.67 ± 0.82	
	Other	12 (6.8)	11.92 ± 3.08		4.22 ± 0.38		4.85 ± 0.73	

KN=Knowledge about Novel infectious diseases; ES=Ethical sensitivity; IPN=Intent to provide care for patients with a Novel infectious disease

Table 2: Relationships among the study variables (n=177)

Variables	KN	ES	IPN
	r(p)	r(p)	r(p)
KN	1	.001(.992)	.042(.576)
ES		1	.590(<.001)
IPN			1

KN=Knowledge about Novel infectious diseases; ES=Ethical sensitivity; IPN=Intent to provide care for patients

with a Novel infectious disease

Table 3. Predictors of nursing students' intent to provide care for patients with a novel infectious disease (n=177)

Variables	B	β	t	p
(Constant)	2.165		5.316	< .001
Perceived ethical values	-.151	-.158	-2.581	.011
Ethical sensitivity	.776	.560	9.145	< .001
Adj. R^2=.365, F=6.660, p<.001 Durbin-Watson=1.938				