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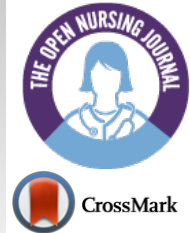
RESEARCH ARTICLE

Influence of COVID 19 on Nursing Students' Career Identity: A Cross-sectional Study

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Abstract:

Background:

The Coronavirus disease 2019 has affected students' education because they are more likely to be exposed to such infectious diseases during clinical practice in hospitals. This may result in inaccurate knowledge of coronavirus disease 2019 among nursing students and foster negative attitudes and fears about the virus, potentially resulting in negligent patient care.

Objective:

This study elucidates the relationship between nursing students' knowledge, attitude, and fear of coronavirus disease 2019 and their career identity.

Methods:

We used structured self-reported questionnaires to assess knowledge, attitude, and fear about Coronavirus disease 2019 and career identity among 223 nursing students. We analyzed data using a t-test, Pearson's correlation coefficient, and stepwise multiple regression.

Results:

Satisfaction with the actual clinical practice ($\beta=0.35$, $p<0.001$), knowledge of coronavirus disease 2019 ($\beta=.25$, $p<.001$), attitude toward coronavirus disease 2019 ($\beta=.17$, $p=.002$), and fear of coronavirus disease 2019 ($\beta=.39$, $p<.001$) influenced students nurses' career identity.

Career guidance programs are needed to positively transform nursing students' fear of Coronavirus disease 2019, to enhance their career identity. Educational content that can be used during clinical practice should be developed, to improve professional knowledge. Thus, the nursing students' satisfaction with practice can be nurtured with a change of attitude toward infectious diseases. Besides active efforts and institutional arrangements at the national level, cooperation and feedback between schools and hospitals are important for nursing students to form a desirable career identity.

Conclusion:

Nursing students' fear, knowledge, and attitude toward Coronavirus disease 2019 and satisfaction with the practice influence career identity. Moreover, it is necessary to develop educational content that can be used during clinical practice and improve professional knowledge. This will nurture the student nurses' practice satisfaction and induce a change in attitude toward infectious diseases. Cooperation and feedback between schools and hospitals are of paramount importance for student nurses to form a desirable career identity, in addition to active efforts and institutional arrangements at the national level.

Keywords: Student, Education, Nursing, Coronavirus disease 2019, Career identity, Patient care.

1. INTRODUCTION

The World Health Organization (WHO) declared a pandemic in 2020, owing to the rapid spread of coronavirus disease 2019 (COVID-19) [1]. As of April 3, 2022, the number of confirmed cases of COVID-19 worldwide was 490,210,251 and the death toll was 6,176,426, and in South Korea, the number of confirmed cases was 13,874,216, while the number of deaths was 17,235 [2].

With the persistence of the COVID-19 pandemic for a prolonged period, a surge has occurred in the number of infections among healthcare workers (HCWs) caring for COVID-19 patients. More than 230,000 medical personnel have been infected with COVID-19 worldwide, and more than 600 nurses have succumbed to this disease [3]. In South Korea, 415 nurses were infected as of December 31, 2021, which

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accounted for 73.5% of all infected HCWs [4]. Nurses are directly or indirectly exposed to COVID-19 while doing their best to prevent the transmission and spread of this disease [5].

The COVID-19 pandemic has also affected nursing education, and nursing students are more likely to be exposed to various infectious diseases, including COVID-19, during clinical practice in hospitals. This situation may lead to inaccurate knowledge and foster negative attitudes and vague fears about COVID-19 among nursing students, which can further lead to prejudice or negative views about patients with infectious diseases, resulting in negligent patient care [6 - 9]. Nursing students are pre-medical workers and key health personnel who can prevent the onset of new communicable diseases in the future and provide nursing care to patients with infections, which may necessitate close contact between patients and nurses [10]. Thus, nursing students' knowledge, attitude, and fear of COVID-19 require meticulous attention.

Career identity is a clear and stable possession of one's own goals, interests, and abilities related to a career with confidence in one's career path. The concept of career identity refers to the sense of self-identity in a vocational field, where students are certain of the job they will perform in the future, which influences career selection [11]. Career identity is formed during the process of collecting and weighing job-related information [12]. Nursing students have fewer worries about their careers than students in other majors, due to the high employment rate; however, they have less confidence due to low levels of career preparedness and career identity as their career paths are mostly predetermined by their course selection [13].

Job satisfaction decreases and turnover intention increases when nursing students have low confidence in their careers [14]. Career identity is related to the negative experiences of nursing students during actual clinical practice, knowledge and attitudes toward infectious diseases, and psychological factors [15]. Therefore, it is necessary to elucidate the factors affecting the career identity of nursing students whose period of study and practice coincided with the persistent COVID-19 pandemic.

This study was conducted to identify the knowledge, attitude, and fear about COVID-19 among nursing students and their influence on career identity. We anticipate that our findings can be used for the development of educational programs to form and inspire the career identity of nursing students in the face of new infectious diseases that may occur after COVID-19.

2. MATERIALS AND METHODS

2.1. Study Design

This was a cross-sectional descriptive study that used the convenience sampling selection method.

2.2. Samples

Students enrolled in a 4-year clinical nursing program were recruited from a university in B city. We included third- and fourth-year nursing students who had gained real-world clinical and practical nursing experience in hospitals. Students who understood the purpose and procedure of this study participated voluntarily. We calculated the sample size required for the regression analysis using G*Power 3.1.9.2. The required sample size was 178 for 11 predictors, with a significance level of 0.05, medium effect size of 0.15, and statistical power of 0.95. We collected data from a total of 225 participants, considering a dropout rate of 20%. Finally, 223 students were included in the analysis, after we excluded two participants as they provided insincere responses.

2.3. Data Collection

The data collection period for this study extended from March 14 to March 24, 2022. We obtained informed consent by explaining the purpose and procedure of the study to students enrolled. Subsequently, the study protocol was posted on a department-related social network service platform, which includes a uniform resource link (URL) and quick response (QR) code. We first provided a consent form describing the purpose and methodology of the study when a student who wished to voluntarily participate in the study accessed the URL or QR. It was set up such that only students who agreed to this could respond. Approximately 10 minutes were required to complete the questionnaire, and a small gift was provided to the participants in return.

2.4. Variables

2.4.1. General Characteristics

The general characteristics investigated in this study included gender, age, academic grade, motive for selecting nursing, education on respiratory infection, satisfaction for major, satisfaction with clinical practice, and physical and mental health status. It is a multiple-choice question.

2.4.2. Knowledge of COVID-19

We accessed knowledge of COVID-19 using a tool developed by Yun [16] based on the "Coronavirus Infection Disease-19 Response Guidelines 6th Edition," which was presented by the Korean Centers for Disease Control and Prevention. It is a multiple-choice question. This tool consists of a total of 23 questions: 0 points are awarded for an incorrect answer and 1 point for a correct answer to each question. A higher score indicates a higher knowledge of COVID-19.

2.4.3. Attitude toward COVID-19

We evaluated attitudes toward COVID-19 using a tool for measuring attitudes toward avian influenza developed by Park [17], which Baik [18] partially modified for COVID-19 [19]. It is a multiple-choice question. This tool consists of a total of 12 items, which are graded on a 5-point Likert scale ("not at all": 1 point to "strongly agree": 5 points). A higher score indicates a positive attitude toward COVID-19. Cronbach's α was 0.65 for the original tool [17], 0.94 for the modified version [18], and 0.89 for the current study.

2.4.4. Fear of COVID-19

We assessed the fear of COVID-19 using the tool

developed by Reznik *et al.* [20]. It is a multiple-choice question. This tool consists of a total of 8 items, which are graded on a 5-point Likert scale ("not at all": 1 point to "strongly agree": 5 points). A higher score indicates a higher fear of COVID-19. Cronbach α for the original and current study tools was 0.81 [20] and 0.89, respectively.

2.4.5. Career Identity

Kwon and Kim [21] modified and supplemented the career identity tool developed by Holland *et al.* [22] to suit nursing students. It is a multiple-choice question. This tool consists of 14 items, which are graded on a 4-point Likert scale ("strongly agree": 1 point to "strongly disagree": 4 points). The higher the score, the stronger the career identity. Cronbach's α for the original [22], modified [21], and the current study was 0.89, 0.88, and 0.93, respectively.

2.5. Data Analysis

We conducted data analysis using IBM SPSS Statistics for Windows ver. 26.0 (IBM Co., Armonk, NY, USA). We performed a two-sided test at a significance level of 5%. General characteristics, knowledge, attitude, fear, and career identity with respect to COVID-19 were calculated and reported as frequency, percentage, mean, and standard deviation. We analyzed the differences in career identity scores according to general characteristics using the independent t-test and analysis of variance, while we used the Scheffé test for the post-hoc analysis. Correlations between knowledge, attitude, fear, and career identity scores concerning COVID-19 were analyzed using Pearson's correlation coefficients. We performed the stepwise multiple regression analysis to identify the factors affecting career identity.

2.6. Ethical Consideration

The study was approved by the Institutional Review Board of Kyungil University (IRB NO: 2-1041055-AB-N-01-2019-35; date of approval: March 14, 2022). Prior to proceeding with the study, we obtained informed consent from the participants in the study.

3. RESULTS

3.1. Participants' Characteristics and Differences in Career Identity

As shown in Table **1**, most (91.5%) of the participants were female and 55.2% were fourth graders. "Employment guarntee," at 43.9%, was the most common motivation reported for selecting nursing, followed by "Personal interest" at 31.4%. A total of 49.8% of participants were "satisfied" with their major, while 52.0% were "satisfied" with actual clinical practice. Most (83.0%) of the participants responded that they had experience in education on respiratory infection. The physical health status was "good" for 56.1% of participants, while the mental health status was "good" for 50.7%.

Table 1. Characteristics of participants and differences in career identity scores (N=223).

Characteristics	Category	N	(%)	Mean	± SD	t	F(p)
							Scheffe
Gender	Female	204	(91.5)	2.70	± 0.63	-.44	(.66)
-	Male	19	(8.5)	2.77	± 0.64	-	-
Age (years)	<25	171	(76.7)	2.81	± 0.64	1.86	(.06)
-	<25	89	(36.5)	2.63	± 0.61	-	-
Academic grade	3rd	100	(44.8)	2.80	± 0.66	.67	(.50)
-	4th	123	(55.2)	2.74	± 0.63	-	-
Motive for selecting nursing	Personal interest[a]	70	(31.4)	3.05	± 0.71	7.83	(<.001)*
-	Employment guarantee[b]	98	(43.9)	2.68	± 0.58		a>b,c,d
-	Encouragement from parents[c]	38	(17.0)	2.56	± 0.55	-	-
-	Others[d]	17	(7.6)	2.57	± 0.52	-	-
Education on respiratory infection	No	38	(17.0)	2.44	± 0.61	3.54	(.001)*
-	Yes	185	(83.0)	2.83	± 0.63	-	-
Satisfaction with major	Satisfied[a]	111	(49.8)	3.00	± 0.66	17.85	(.001)*
-	Average[b]	82	(36.8)	2.55	± 0.48		a>b,c
-	Dissatisfied[c]	30	(16.5)	2.48	± 0.65	-	-
Satisfaction with clinical practice	Satisfied[a]	116	(52.0)	3.00	± 0.62	19.98	(<.001)*
-	Average[b]	87	(39.0)	2.57	± 0.55		a>b,c
-	Dissatisfied[c]	20	(9.0)	2.29	± 0.58	-	-
Physical health status	Good[a]	125	(56.1)	2.87	± 0.66	4.13	(.017)*
-	Average[b]	63	(28.3)	2.63	± 0.57		a>b,c
-	Poor[c]	35	(15.7)	2.62	± 0.62	-	-
Mental health status	Good[a]	113	(50.7)	2.90	±0.71	5.27	(.006)*
-	Average[b]	77	(34.5)	2.62	± 0.52		a>b,c
-	Poor[c]	33	(14.8)	2.65	± 0.60	-	-

Abbreviations: N, number; SD, standard deviation

Factors influencing the career identity of nursing students included the motive for selecting (F=7.83, p<.001), satisfaction with the major (F=17.85, p<.001), satisfaction with clinical practice (F=19.98, p<.001), education on respiratory infection- (F=3.54, p=.001), physical health (F=4.13, p=.017), and mental health (F=5.27, p=.006).

3.2. Knowledge, Attitude, and Fear about COVID-19 and Career Identity

The average score for knowledge of COVID-19 was 13.32 (maximum score: 23). The average score for attitude toward COVID-19 was 3.54 (maximum score: 5). The average score for fear of COVID-19 was 3.27 (maximum score: 5). The career identity score was 2.77 (maximum score: 4) (Table **2**). Details of the test of knowledge of COVID-19 are presented in Table **3**; the rate of correct responses to this test was 57.9%.

3.3. Correlations between Variables

Knowledge of COVID-19 correlated significantly with attitude (r=0.29, p<.001) and fear (r=0.33, p<.001). Attitude toward COVID-19 correlated significantly with fear of COVID-19 (r=0.45, p<.001). Career identity was positively correlated with the knowledge of COVID-19 (r=0.51, p<.001), attitude toward COVID-19 (r=0.44, p<.001), and fear of COVID-19 (r=0.51, p<.001) (Table **4**).

Table 2. Level of knowledge, attitude, fear about COVID-19* and career identity (N=223).

Variables	Mean±SD	Min.	Max.	Range
Knowledge of COVID-19*	13.32 ± 1.64	8	18	0-23
Attitude toward COVID-19*	3.54 ± 0.55	2	5	1-5
Fear of COVID-19*	3.27 ± 0.75	2	4.88	1-5
Career identity	2.77 ± 0.64	1	4	1-4

Note: * COVID-19, coronavirus disease 2019; N, number; SD, standard deviation

Table 3. Level of knowledge of COVID-19* (N=223).

S.No.	Items (true or false)	Correct Answer Rate (%)
1	The recent outbreak of COVID-19 is dealt with by applying the "New Infectious Disease Syndrome, a first-class infectious disease."	95.5
2	The pathogen of COVID-19 is SARS-CoV-2: RNA virus belonging to *Coronaviridae*.	93.3
3	COVID-19 is spread through droplets and contact.	88.8
4	The latency period of COVID-19 is 1 to 14 days, with an average of 4 to 7 days.	96.9
5	Symptoms of COVID-19 vary from mild to severe, including fever, sore throat, shortness of breath, and pneumonia.	95.5
6	There is no specific antiviral drug for the treatment of COVID-19.	81.2
7	As is known, the fatality rate of COVID-19 is lower than that of SARS and MERS.	52.4
8	Standard precautions, splash precautions, and contact precautions must be observed for patient management of COVID-19.	41.7
9	A vaccine against COVID-19 has not yet been developed.	52.5
10	A "confirmed person" refers to a person who shows a clear clinical picture and has been confirmed to be infected with an infectious disease pathogen according to the test standards for diagnosis.	86.1
11	The subjects of COVID-19 tests are confirmed patients, doctor patients, and symptomatic persons subject to investigation.	81.6
12	"Contact" means a person who has come into contact with a confirmed patient.	86.5
13	"Isolation release" is possible when 48 hours have passed after all symptoms of a confirmed patient have disappeared and the respiratory specimen PCR test results are negative in 2 consecutive instance at 24 hourly intervals.	20.6
14	"Active monitoring" refers to checking for fever or respiratory symptoms by making phone calls once a day until the self-isolation order is lifted.	86.5
15	Specimen collection for the "COVID-19" test should be conducted in a space isolated from a screening clinic or medical institution.	52.9
16	The specimen types are lower and upper respiratory tract specimens.	30.4
17	The lower respiratory tract sample is collected by washing the oral cavity thoroughly with water, coughing deeply, and spitting it out with saliva.	16.6
18	For upper respiratory tract samples, collect a nasopharyngeal smear or an oropharyngeal smear, and place it in a single virus receiving medium.	15.7
19	When collecting samples, it is mandatory to wear personal protective equipment corresponding to personal protective equipment level D.	9.4
20	If you inevitably come into contact with the person's family or cohabiting person, wear a mask and keep a distance of at least 1.5 meters.	85.2

(Table 3) contd.....

S.No.	Items (true or false)	Correct Answer Rate (%)
21	If there is contamination or damage during treatment after wearing personal protective equipment, be careful not to change clothes or change it until treatment is complete.	27.8
22	If the gloves become wet with sweat during treatment after wearing personal protective equipment, the worker is rotated.	22.4
23	Dispose of used personal protective equipment in a medical waste box after taking it off, taking care not to contaminate the surroundings.	12.1
total	-	57.9

Note: *COVID-19, coronavirus disease 2019; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2; MERS, Middle East respiratory syndrome; PCR, polymerase chain reaction

Table 4. Correlation among knowledge, attitude, and fear about COVID-19 with career identity (N=223).

Variable	Knowledge of COVID-19	Attitude toward COVID-19	Fear of COVID-19	Career Identity
			r(p)	
Knowledge of COVID-19*	1	-	-	-
Attitude toward COVID-19*	.29 (<.001)	1	.	-
Fear of COVID-19*	.33 (<.001)	.45 (<.001)	1	-
Career identity	.51 (<.001)	.44 (<.001)	.51 (<.001)	1

Note: *COVID-19, coronavirus disease 2019

Table 5. Factors influencing the career identity of nursing students (N=223).

Variables	B	β	t	p	VIF[†]
(Constant)	**-.70**		**-2.00**	**.047**	**-**
Satisfaction with clinical practice (moderate)	.45	.35	3.56	<.001	4.48
Knowledge of COVID-19*	.10	.25	4.56	<.001	1.31
Attitude toward COVID-19*	.20	.17	3.07	.002	1.42
Fear of COVID-19*	.29	.34	5.96	<.001	1.46
R^2=.549 *Adj-R^2*=.512, F=14.68, *p*<.001					

Note: *COVID-19, coronavirus disease 2019; [†]VIF, variation inflation factor

3.4. Factors affecting Career Identity

We reviewed the basic assumptions for the regression analysis of independent variables to determine the autocorrelation between errors before analysis, and ensure that there was no autocorrelation between the error terms, which resulted in a Durbin-Watson value of 1.97 (less than 2). Tolerance for the evaluation of multicollinearity between independent variables ranged from 0.21 to 0.77, which was greater than 0.1; the variance inflation factor ranged from 1.90 to 4.68, which was less than 10, indicating no risk of multicollinearity.

The multiple regression analysis revealed that actual clinical practice satisfaction (β=0.35, p<.001), knowledge of COVID-19 (β=0.25, p<.001), attitude toward COVID-19 (β=0.17, p=.002), and fear of COVID-19 (β=0.34, p<.001) were the factors influencing the career identity of nursing students. The model of the regression equation was statistically significant (F=14.68, p<.001), and the explanatory power of the model was 51% (Table **5**).

4. DISCUSSION

This study aimed to investigate the effects of nursing students' knowledge, attitude, and fear about COVID-19 on their career identity. We anticipate that our findings will enable nursing students to form an appropriate career identity even in the milieu of new infectious diseases that may emerge after COVID-19.

In this study, nursing students' knowledge score about COVID-19 was 13.32 (maximum score: 23), and the average rate of correct responses was 57.9%. This is similar to the score reported in a previous study (20.22/36) [23] that measured the knowledge of nursing students using a similar tool, and the rate of correct responses was also similar to that of another study (56.5%) on nurses [24].

The item-wise examination of the knowledge of COVID-19 revealed that nursing students possessed excellent general knowledge of the disease, including regarding symptoms, latency period, and COVID-19 infection routes, as well as knowledge related to isolation practices, including "contact," "active monitoring," and "confirmed person." This is because basic information related to COVID-19 is easily acquired through the media, and knowledge has increased during more than 2-year period of living with the new infectious disease.

However, nursing students scored low on professional knowledge, including regarding the types and methods of sample collection for confirming COVID-19, and proper donning and disposal of personal protective equipment.

Previous studies [16, 19] show that anyone can obtain universal information from government-led campaigns and publicity, although professional education on COVID-19 is inadequate. Nursing students who are charged with the direct care of patients in hospitals should not simply acquire superficial knowledge through the media but should develop professional knowledge through an in-depth study of infectious diseases since they are pre-medical personnel.

In this study, the average score for nursing students' attitudes toward COVID-19 was 3.54/5. A similar study conducted among nursing students reported attitude scores of 17.23/32 [21]. However, other studies conducted on nurses using the same tool reported attitude scores of 4.33 [18] and 4.14 points, respectively [25]. This result is reflective of the frequent hospital education received by nurses in line with the diverse epidemiological information provided by the government, acquisition of the latest information, and actual provision of COVID-19-related care.

Meanwhile, nursing students had limited real-world clinical practice due to COVID-19 restrictions, or they underwent actual clinical practice at school rather than in hospitals. Infection-control education programs for nursing students organized by schools are limited, and it is difficult for these institutions to provide detailed information on the way real-world medical institutions deal with new infectious diseases. Active cooperation is needed, such as the launch of a consortium of schools and hospitals, to ensure that nursing students respond appropriately when faced with unfamiliar situations in clinical settings and maintain a positive outlook toward their profession. We also think that periodic student and faculty training and government support will be required.

Nursing students' fear of COVID-19 scored 3.27/5. These results are difficult to compare and discuss due to the lack of previous studies focusing on nursing students' fear of COVID-19. However, the results are similar to those of Alici and Copur [26], who showed that the fear of third- and fourth-grade nursing students who experienced hospital practice was higher than that of first and second-year students. The participants of the current study included third and fourth-year nursing students with actual clinical experience with COVID-19. The explosive increase in COVID-19 patients and the threat of infection that could occur during practice have created fear among students.

The fear of COVID-19 is induced by various emotional factors, such as the emergence of new diseases and uncertainty about possible aggravation, which fosters fear, preventing nursing students from focusing on their daily life and actual work [27]. Therefore, a way to relieve this fear of COVID-19 should be devised. To reduce the fear of nursing students who feel the threat of infection during clinical practice, robust, appropriate infection control education such as regarding wearing personal protective equipment and hygiene management is crucial. Furthermore, these should be buttressed by practical and emotional support from schools and hospitals to foster a safe clinical environment.

Factors influencing nursing students' career identity included job satisfaction and knowledge, attitude, and fear of COVID-19. Fear related to COVID-19 was the strongest influencing factor. Comparison is difficult because no previous study investigated the relationship between fear of COVID-19 and nursing students' career identity. However, Lee and Song [28] investigated nurses' experience of caring for patients with COVID-19. Although nurses have myriad fears, they reported that they have the courage and hope that they can perform their duties responsibly because they are nurses, mature even in crises, such as a battlefield, and can provide holistic care in any environment.

As such, the heightened fear experienced by nursing students made them feel anxious at first but is thought to stimulate subsequent changes. In particular, while witnessing the professionalism and responsibility of actual medical personnel through clinical practice, this fear-induced a sense of crisis regarding the current situation among nursing students, thus, awakening their sense of duty and vocation. At the same time, they developed confidence that they could accomplish the job themselves, which is believed to boost their career identity.

Therefore, ameliorating nursing students' fear requires not only lectures that purvey specialized knowledge, but also education that clearly establishes values and beliefs about nursing (using approaches that utilize role demonstration, group discussion, and fear expression) [29]. Practical education that includes vivid experience of either nurses, medical staff, or patients, may make it possible to effectively eliminate the fear of COVID-19 and enhance career identity.

5. IMPLICATIONS FOR NURSING

This study is meaningful because it confirmed COVID-19-related factors as influential factors on nursing students' career identity. Since this study was conducted for nursing students in one city, the generalizability and application of its results are limited. Moreover, it is difficult to produce generalized results related to the knowledge and attitude about COVID-19, because of the diverse tools used in previous studies. Thus, there exist limitations in the comparison and discussion of the research results. The above-mentioned shortcomings can be overcome by the development of standardized tools to measure knowledge and attitude related to COVID-19. Then also various factors influencing the career identity of nursing students should be identified *via* successive studies in the future.

Nurses who recognized that they were prepared for a disaster situation such as COVID-19, and who had experience caring for COVID-19 patients, showed high competency in disaster nursing [30]. This is related to the improvement of empirical knowledge while experiencing the COVID-19 pandemic, and the formation of a positive attitude that one can do it. This inner growth can reduce ethical conflicts or dilemmas that nurses experience in sudden disaster situations, helping them to actively cope [30, 31].

But it is realistically limited for nursing students to directly experience a disaster situation such as COVID-19. This can be supplemented by evidence-based educational programs, simulations, or simulated training programs that provide possible hypothetical situations [31]. Education applying augmented reality and virtual reality is a technology that

reflects the real world in which we currently live, and can give a sense of reality as if a real situation occurred. This is suggested as a way to make students strongly feel the need for education and to enhance students competence in the future [32]. It is necessary to develop a realistic educational program through multidisciplinary collaboration and linkage between schools and hospitals.

CONCLUSION

This study confirmed that nursing students' fear, knowledge, and attitude about COVID-19 and satisfaction with the practice influence career identity. Career guidance programs are necessary to help transform nursing students' fear of COVID-19 into a beneficial entity, intending to enhance their career identity. Moreover, it is necessary to develop educational interventions that can be implemented during clinical practice to cultivate practically relevant knowledge that is useful in crisis-like situations. These measures will improve nursing students' practice satisfaction and lead to a change in attitude toward infectious diseases. In addition to active national-level efforts and institutional arrangements, practical education based on multidisciplinary cooperation and feedback between schools and hospitals are of paramount importance to enable a nursing student to form a desirable career identity as a future nurse.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The study was approved by the Institutional Review Board of Kyungil University (IRB NO: 2-1041055-AB-N-01-2019-35; date of approval: March 14, 2022).

HUMAN AND ANIMAL RIGHTS

No animals were used in this research. All procedures performed in studies involving human participants were in accordance with the 1975 Declaration of Helsinki, as revised in 2013.

CONSENT FOR PUBLICATION

Prior to proceeding with the study, informed consent was obtained from the participants in the study.

AVAILABILITY OF DATA AND MATERIALS

All the data and supportive information are provided within the article.

STANDARDS OF REPORTING

STROBE guidelines were followed.

CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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