RESEARCH ARTICLE

Nursing & Health Sciences   WILEY

Nursing students' motivational and self-regulated learning during the COVID-19 pandemic: A cross-sectional study

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Abstract

On-site clinical training, which has been greatly hindered during the COVID-19 pandemic, is essential in nursing practicum. This study aimed to identify the predictors of nursing students' motivational and self-regulated learning in clinical nursing practicum during the pandemic. This cross-sectional study aimed to identify the predictors of motivational and self-regulated learning among nursing students in clinical nursing practicum during the COVID-19 pandemic. An online survey was completed by 195 nursing students in Korea in 2021. Students' moral sensitivity and motivational and self-regulated learning were assessed using the Moral Sensitivity Questionnaire and the Motivated Strategies for Learning Questionnaire. Multiple regression analysis revealed that moral sensitivity was the most potent predictor of motivational and self-regulated learning, followed by online clinical practicum experience, determination to become a nurse, and online practicum type; these factors explained 21.0% of the variance. Practicum courses using a tailored hybrid model, combining online and in-person approaches for imparting nursing practices and inspiring moral sensitivity, can enhance nursing students' motivational and self-regulated learning. Modules to enhance nursing students' moral sensitivity should be included in online practicum curricula.

KEYWORDS
clinical practicum, COVID-19, motivational learning, nursing students, self-regulated learning

Key points
- Motivational and self-regulated learning were higher with the use of a hybrid online practicum.
- The curriculum of nursing colleges should be redesigned to provide a hybrid clinical nursing practicum.
- Moral sensitivity should be enhanced through integrated ethics education in the nursing curricula to improve motivational and self-regulated learning.

1 | INTRODUCTION

Since the outbreak of the coronavirus disease 2019 (COVID-19) pandemic, colleges worldwide have either completely or partially implemented remote learning (Spurlock, 2020). As nursing requires clinical training, which has been greatly hindered during the COVID-19

pandemic (Gallego-Gómez et al., 2020), several alternative clinical training methods, such as real-time online simulations using YouTube streaming or Zoom, have been implemented across hospitals, communities, and colleges (Kang, 2020).

During the pandemic, following recommendations from the government and nursing boards, nursing schools discontinued on-site

clinical practice and switched to online learning. Clinical requirements vary by country and region; however, many nursing educational institutions have increased online practice hours. The National Council for State Boards of Nursing recommended that simulation learning replacing traditional clinical practice not exceed 50% of the total clinical hours prior to the pandemic (Hayden et al., 2014), but many US state nursing boards allow this on a temporary basis, even if it exceeds 50% (Texas Board of Nursing, 2020). In California, the clinical training simulation hours temporarily increased from 25% to 50%, and clinical education was operated by mixing direct patient nursing, remote nursing, and simulation (Hargreaves et al., 2021). In Korea, before the pandemic, 120 h of simulation practice were recognized out of 1000 h of clinical nursing practicum essential for accreditation by the Korean Accreditation Board of Nursing Education. During the pandemic, however, these restrictions were temporarily lifted, and many nursing schools utilized simulation and online practice (Lee et al., 2021).

Online nursing education methods are a desirable learning alternative because they facilitate student–teacher interaction, enable student-centered learning, and are not restricted by time and place (Reime et al., 2008). Through online learning methods, such as virtual simulations, students can use various decision-making options to develop clinical skills (Gaba, 2007). The virtual simulation method acts as a cost-effective means of providing students with regular and constant practice opportunities and experiences within a safe, reproducible, accessible, and standardized clinical environment (Cobbett & Snelgrove-Clarke, 2016). However, these measures have raised concerns regarding the increasing gap in the students' academic performance (McCutcheon et al., 2015; Singh et al., 2021). Despite the many advantages of online education, little is known about the extent to which online training can replace on-site clinical placement.

Clinical training offers nursing students various opportunities to apply their nursing skills, including involvement in clinical decision-making in hospitals, clinics, and simulation laboratories (O'Connor & Andrews, 2015, 2018). Owing to technological advances during the 2000s, several online clinical practicum methods have been introduced to complement on-site clinical placements since 2010 (Seo & Kang, 2020). Such changes have been facilitated because of an increase in nursing student numbers, increased competition from other healthcare professionals in securing clinical training sites, reduced clinical training placement opportunities, and a decrease in specific case numbers such as childbirth (Hayden, 2010).

Although the findings of studies that assessed the effects of online clinical practicums have been inconsistent, a meta-analysis of the effects of mobile learning in clinical training confirmed improvement in nursing students' skills, knowledge, and satisfaction (Chen et al., 2021). Furthermore, after virtual simulation-based training, students showed an improvement in their level of knowledge, clinical inference, and training satisfaction (Padilha et al., 2019). However, these findings were published before 2020, when online clinical practicums were only complementary to on-site clinical placement.

A study on alternative clinical education in Korea during the COVID-19 pandemic found that the group using both virtual and in-person simulations showed higher levels of knowledge, confidence,

and performance than the group that used only one type of simulation (Kang et al., 2020). Although hands-on training in hospitals is restricted due to the pandemic, clinical education must be redesigned as an online clinical practicum that can ensure learning outcomes (Maykut et al., 2020).

2 | BACKGROUND

Motivational and self-regulated learning are major predictors of students' academic performance (Jo & Kim, 2014). Learning motivation is important for academic performance as it inspires individuals to engage in productive behavior. According to a study on clinical practicum using mobile learning, enhancing nursing students' motivational and self-regulated learning can be a key factor in successfully leading online clinical practicum (Erturan İlker et al., 2014). Additionally, a study by Kim et al. (2020), who investigated the situation of nursing education in Korea—mostly replaced by online education during the pandemic—emphasized the importance of motivational learning. Moreover, as a psychological factor, it facilitates and determines the direction of behaviors (Erturan İlker et al., 2014). Self-directed learners set practical learning goals and effective learning strategies (Cho & Heron, 2015) and have high self-esteem (Fida et al., 2018). Thus, to cultivate competent nursing professionals, it is important to foster self-directed learning abilities that will enable students to take initiative when it comes to learning.

Moral sensitivity is the awareness of moral values in the ethical decision-making process (Tuvesson & Lützén, 2017). In other words, it refers to a nurse's awareness of ethical problems and their determination to choose the best nursing care based on empathy, respect for patients, and professional responsibility (Kim, 2015). According to previous studies (Amiri et al., 2019; Milliken, 2018), moral sensitivity—a key factor in nurses' moral behavior—further affects the quality of care and patient well-being. Nurses' moral sensitivity is related to their accountability and moral courage (Pajakoski et al., 2021). This is because the ability to resolve moral conflicts is essential for providing high-quality nursing care. The development of ethical decision-making in clinical education improves the quality of nursing care based on best practice and scientific learning (Amiri et al., 2019). Thus, nurses and prospective nurses must be equipped with high moral sensitivity (Liaschenko & Peter, 2004; Suazo et al., 2020), along with the competence to advocate for patients' rights and dignity.

According to Duckett & Ryden (1994) four components are necessary for implementing moral behavior: moral sensitivity, judgment, motivation, and character. These components are important predictors for improving nursing students' clinical performance through learning (Liaschenko & Peter, 2004). The moral sensitivity of nursing students is a very meaningful predictor of clinical performance and professional obligation (Lee et al., 2017). It plays an important role in clinical practicum. Clinical training curricula should be designed to increase students' moral sensitivity, allowing them to establish moral standards in clinical practice (Song & Lee, 2020).

Eventually, the professional quality of respecting patients and safe-guarding patients' rights can be integrated into clinical practice. Therefore, for effective learning through clinical practicum, students' clinical competencies should be further improved by enhancing their moral sensitivity (Lee et al., 2017; Liaschenko & Peter, 2004). More-over, as Visiers-Jiménez et al. (2021) pointed out, learning environments in clinical nursing practicum are crucial for enhancing nursing students' competences. Until the COVID-19 pandemic is completely managed, nursing colleges face the challenge of providing partial or complete online clinical practicums (Rose, 2020). Therefore, this study aimed to identify the predictors of nursing students' motivational and self-regulated learning in clinical nursing practicum during the COVID-19 pandemic.

3 | METHODS

3.1 | Study design and participants

This cross-sectional study enrolled 195 third- and fourth-year Korean college students who underwent any type of clinical nursing practicum (transitioning from the clinical to the online setting) during the COVID-19 pandemic. The sample size for multiple regression analysis was determined using the G*power version 3.1.9.2 software with a significance of 0.05, power of 0.95, 10 predictor-variables, and an effect size (f^2) of 0.15 (medium). The minimum sample size required was 172. Considering a 10.0% dropout rate, data were collected from 195 participants. The inclusion criteria were as follows: (1) completion of at least one semester of the practicum course in 2020 and (2) third- and fourth-year students in nursing college. The exclusion criteria were as follows: (1) leave of absence in 2020 and (2) students not enrolled in a practicum course during the COVID-19 pandemic.

3.2 | Data collection and ethical considerations

Data were collected via an online survey from March 3 to 15, 2021. Participants were recruited using a flyer containing the survey's description and its link posted on the websites and mobile messengers of five schools in four cities in the Republic of Korea. Only those who volunteered to participate were included in the study. This study was approved by the Institutional Review Board of Mokpo National University (IRB approval no. MNUIRB-210303-SB-002-01). Furthermore, potential participants were given an information sheet detailing the study's purpose and method, as well as a guarantee of anonymity. Only those who provided consent to participate were instructed to proceed with the survey. Moreover, the participants were provided with the researcher's contact information in case they wished to withdraw from the study and were informed that they had the freedom to do so at any time.

3.3 | Measures

The participants' general and academic characteristics were recorded using a questionnaire. The Korean version of the Moral Sensitivity Questionnaire (K-MSQ) and the Motivated Strategies for Learning Questionnaire were used to measure the study's major parameters—moral sensitivity and motivational and self-regulated learning.

3.3.1 | Moral sensitivity

The Korean version of the Moral Sensitivity Questionnaire (K-MSQ) (Han et al., 2010), originally developed by Lützén et al. (1994), was used. It comprises 27 items—including two reverse-coded items—that measure five factors: patient-oriented care, professional responsibility, moral conflict, moral meaning, and benevolence. This self-report tool rates items on a 7-point Likert scale from 1 (*not at all*) to 7 (*strongly agree*). The total scores ranged from 27 to 189, with higher scores indicating higher levels of moral sensitivity. In the study by Han et al. (2010) and in the present study, the K-MSQ's Cronbach's α was 0.76 and 0.80, respectively.

3.3.2 | Motivational and self-regulated learning

Motivational and self-regulated learning were measured using the Motivated Strategies for Learning Questionnaire developed by Pintrich and de Groot (1990) and adapted to Korean by Kim and Jang (2015). This self-report tool consists of 44 items, including four reverse-coded items. Items are rated on a 7-point Likert scale ranging from 1 (*not at all*) to 7 (*strongly agree*). The total score ranged from 44 to 308, with higher sums of scores for each factor indicating more motivational and self-regulated learning. The five factors included cognitive strategy (13 items), self-regulation (nine items), self-efficacy (nine items), intrinsic value (nine items), and test anxiety (four items). The Cronbach's α for the factors was 0.74–0.89 at the time of development (Pintrich & de Groot, 1990), 0.83–0.90 during its adaptation to Korean (Kim & Jang, 2015), and 0.77–0.91 in this study.

3.3.3 | Data analysis

Data were analyzed using IBM SPSS Statistics software (version 26.0). The participants' general and academic characteristics were analyzed using descriptive statistics, and the differences in their motivational and self-regulated learning according to these characteristics were analyzed using a *t*-test and one-way analysis of variance. Scheffé test was used as the post hoc test, and Jonckheere–Terpstra test was performed for trend analysis. The predictors of motivational and self-regulated learning among the participating nursing students were identified using multiple regression analysis with significance set at $p < 0.05$.

TABLE 1 General and academic characteristics and moral sensitivity (N = 195)

Variable	Category	n (%)	M (SD)
Age (years)			24.04 (5.54)
Gender	Male	28 (14.4)	
	Female	167 (85.6)	
Year	Third grade	117 (60.0)	
	Fourth grade	78 (40.0)	
Major satisfaction	Not satisfied	8 (4.1)	
	Moderate	46 (23.6)	
	Satisfied	141 (72.3)	
Determination to become a nurse	Not determined	8 (4.1)	
	Neutral	22 (11.3)	
	Determined	165 (84.6)	
Online clinical practicum experience[a]	No	6 (3.1)	
	Yes	189 (96.9)	
Type of online practicum[b]	Hybrid	94 (49.7)	
	Online only	95 (50.3)	
Proportion of online training in clinical practicum (%)			58.1 (33.3)
Moral sensitivity			131.86 (13.36)

Abbreviations: M, mean; SD, standard deviation.
[a]Clinical training replaced by online learning media such as virtual simulation due to the COVID-19 pandemic;
[b]Data from 189 participants who had online training experience.

4 | RESULTS

4.1 | Participants' general and academic characteristics

The participants' mean age was 24.04 (SD: 5.54) years, with 85.6% and 60.0% being female and third-year students, respectively. In 2020, during the COVID-19 pandemic, 3.1% of students underwent on-site clinical placement without an online nursing practicum, and 50.3% underwent a completely online clinical practicum. The mean proportion of online training in the total clinical practicum curriculum was 58.1% (min 0.0%, max 100.0%). The mean moral sensitivity score was 131.86 (Table 1).

4.2 | Motivational and self-regulated learning

Table 2 summarizes the differences in nursing students' motivational and self-regulated learning according to their general and academic characteristics. Motivational and self-regulated learning differed according to their level of satisfaction with their major and their determination to become nurses. Moreover, the Jonckheere–Terpstra

TABLE 2 Motivational and self-regulated learning based on general and academic characteristics and moral sensitivity (N = 195)

Variable	Category	Total score	
		M (SD)	p
Gender	Male	220.43 (27.82)	0.099
	Female	211.58 (25.86)	
Year	Third grade	212.74 (27.29)	0.944
	Fourth grade	213.01 (24.80)	
Major satisfaction	Not satisfied	187.50 (26.82)	<0.001[b] JT 4.64 (<0.001)[c]
	Moderate	200.57 (27.31)	
	Satisfied	218.30 (26.26)	
Determination to become a nurse	Not determined	188.00 (27.18)	0.002 JT 2.99 (0.003)[c]
	Neutral	202.23 (26.81)	
	Determined	215.47 (25.29)	
Online clinical practicum experience[a]	No	190.33 (36.23)	0.032
	Yes	213.57 (25.69)	
Type of online practicum	Hybrid	218.30 (26.63)	0.011
	Completely online	208.88 (23.95)	
Proportion of online training in total clinical practicum	< 60%	213.84 (26.69)	0.586
	≥ 60%	211.79 (25.88)	
Moral sensitivity	Low (≤ 132)[d]	204.42 (23.85)	<0.001
	High (>132)[d]	221.73 (25.85)	

Abbreviations: M, mean; SD, standard deviation.
[a]Clinical training replaced by online learning media such as virtual simulation, due to the COVID-19 pandemic.
[b]Scheffe post hoc test, satisfied group > moderate and not satisfied group, determined group > neutral and not determined group.
[c]Jonckheere-Terpstra test results.
[d]Cutoff point: mean.

test revealed that motivational and self-regulated learning increased as satisfaction with their major and the degree of determination to become a nurse increased. Motivational and self-regulated learning differed significantly based on the online training experience and type of online practicum during the COVID-19 pandemic. Motivational and self-regulated learning scores differed according to their level of moral sensitivity. The group with high moral sensitivity (cutoff point: 132) had higher motivational and self-regulated learning scores than the group with low moral sensitivity (Table 2).

4.3 | Correlations among variables

Table 3 summarizes the correlations between the proportion of online training in clinical education, the moral sensitivity, and motivational and self-regulated learning. Age and the proportion of online clinical practicum were not significantly correlated with moral sensitivity or

TABLE 3 Correlation between proportion of online clinical practicum, moral sensitivity, and motivational and self-regulated learning ($N = 195$)

Variables	Proportion of online practicum r (p)	Patient-oriented care r (p)	Professional responsibility r (p)	Moral conflict r (p)	Moral meaning r (p)	Benevolence r (p)	Moral sensitivity r (p)	MSL r (p)
Proportion of online practicum	1							
Patient-oriented care	0.09 (0.191)	1						
Professional responsibility	−0.00 (0.979)	0.56 (<0.001)	1					
Moral conflict	−0.04 (0.626)	0.33 (<0.001)	0.43 (<0.001)	1				
Moral meaning	−0.04 (0.567)	0.27 (<0.001)	0.08 (0.280)	0.29 (<0.001)	1			
Benevolence	0.00 (0.984)	−0.01 (0.862)	0.14 (0.055)	0.32 (<0.001)	0.25 (<0.001)	1		
Moral sensitivity	0.00 (0.987)	0.65 (<0.001)	0.70 (<0.001)	0.73 (<0.001)	0.60 (<0.001)	0.54 (<0.001)	1	
MSL	−0.03 (0.696)	0.47 (<0.001)	0.49 (<0.001)	0.15 (0.044)	0.05 (0.457)	−0.13 (0.078)	0.32 (<0.001)	1

Abbreviation: MSL, motivational and self-regulated learning.

with motivational and self-regulated learning. However, moral sensitivity was significantly positively correlated with motivational and self-regulated learning ($r = 0.32$, $p < 0.001$).

4.4 | Predictors of motivational and self-regulated learning

Table 4 shows the multiple regression analysis results of the motivational and self-regulated learning predictors among nursing students. Using the enter method, online training experience, type of online practicum, proportion of online training, and moral sensitivity were entered as independent variables. Gender, age, major satisfaction, and the determination to become a nurse, which were significantly associated with motivational and self-regulated learning ($p < 0.10$), were entered as control variables.

The regression analysis confirmed that motivational and self-regulated learning with the hybrid type of online practicum was higher among those determined to become nurses, had online training, and high moral sensitivity, which explained 21.0% of the variance ($F = 6.52$, $p < 0.001$). The results of the Kolmogorov–Smirnov and Breusch-Pagan tests, used to assess the goodness-of-fit of the regression model, indicated that the assumptions of normality and equal variance were satisfied.

5 | DISCUSSION

The proportion of online training in the clinical practicum course over 1 year did not significantly predict motivational and self-regulated

learning. However, compared to students who learned completely online, those who underwent the hybrid model of clinical education showed greater motivational and self-regulated learning. Furthermore, students who experienced online clinical practicum showed greater motivational and self-regulated learning than those who had never experienced it.

According to a study on e-learning methods for nursing and medical students in a developing country during the COVID-19 pandemic (Singh et al., 2021), most students believed that e-learning disrupted their studies; however, their attitudes toward e-learning significantly differed based on their Internet accessibility and computer proficiency. According to the Pew Research Center's report (Silver, 2019), Korea has the highest rate of smartphone ownership (94.0%) and Internet usage (96.0%) worldwide. The Korean college students who participated in this study were born between the late 1990s and early 2000s; they are classified as digital natives, "Zoomers," or "Generation Z" (Merriam-Webster Dictionary, 2021). In addition, they owned at least one mobile device and were considered tech savvy. Furthermore, because of the closure of clinical training facilities to minimize SARS-CoV-2 transmission, professors were required to employ diverse online training strategies and teaching methods, such as flipped learning; virtual, real, or mixed simulation; and online discussions, through either partial or full online clinical education (Goni-Fuste et al., 2021; Rose, 2020). The advantages of online learning, such as ubiquitous, individualized learning, and novel instructional methods (Cook, 2007), are conducive to student learning (Chen et al., 2021).

Moreover, access to the Internet and mobile devices (Silver, 2019) facilitated the partial or complete transition to online

TABLE 4 Factors influencing motivational and self-regulated learning ($N = 195$)

							95% confidence interval	
Variables	B	SE	β	t	p	VIF	Lower	Upper
Constant	9.99	60.70		0.17	0.869		−109.75	129.74
Gender	−7.86	4.89	−0.11	−1.61	0.109	1.04	−1.78	17.50
Age	−0.31	0.33	−0.07	−0.94	0.348	1.20	−0.97	0.34
Major satisfaction	1.41	16.90	0.01	0.08	0.934	1.03	−31.93	34.75
Determination to become a nurse	83.98	24.02	0.23	3.50	0.001	1.05	36.58	131.37
Online clinical practicum experience	41.45	11.75	0.27	3.53	0.001	1.46	−64.63	−18.27
Type of online practicum	10.50	3.56	0.22	2.95	0.004	1.40	−17.52	−3.47
Proportion of online training in clinical practicum	0.01	0.07	0.01	0.09	0.925	2.03	−0.14	0.15
Moral sensitivity	0.66	0.13	0.34	5.08	<0.001	1.07	0.41	0.92
Adjusted $R^2 = 0.204$, $F = 6.52$ ($p < 0.001$)								

Note: Dummy variable (reference): gender (male), major satisfaction (unclassified), determination to become a nurse (not determined), online clinical practicum experience (no experience), type of online practicum (100% online); Durbin-Watson's $d = 2.00$ (du = 1.86, 4-du = 2.14); Breusch-Pagan test ($\chi^2 = 12.24$, $p = 0.200$); Kolmogorov–Smirnov test ($Z = 0.04$, $p = 0.937$).
Abbreviations: SE, standard error; VIF, variance inflation factor.

clinical training during the COVID-19 pandemic. Additionally, during online training, students' brains absorb new information in a multifaceted manner (Firth et al., 2019), thereby boosting motivation and self-regulation (Im & Jang, 2019; Padilha et al., 2019). In a previous Korean study comprising a 15-week online clinical practicum that replaced the medical-surgical nursing practicum during the pandemic, the students were able to experience patient care in a way that simulated actual patient care. They exhibited satisfaction, confidence, and commitment to learning while being trained on core nursing skills, utilizing online simulation, online lectures, YouTube, and Zoom (Kang, 2020).

In summary, designing practicum courses in a hybrid format appropriate to each course would facilitate students' motivational and self-regulated learning during the COVID-19 pandemic regardless of the proportion of online training. As suggested in previous studies, structural framework—such as the number and duration of classes (Singh et al., 2021), students' psychological distress (Li et al., 2020), and their lack of physical exercise (Gallego-Gómez et al., 2020)—should be considered. Additionally, the features of each course and students' characteristics should be considered to foster the standard core competencies required of nursing professionals and ensure that the learning outcomes are met, despite significantly reduced hands-on training (Allande-Cussó, 2020; Maykut et al., 2020).

Students determined to become nurses showed greater motivational and self-regulated learning. These findings can be explained through the future-time perspective theory, which states that students are not only intrinsically motivated by immediate tasks or goals but are further motivated to learn through future-oriented goals (Boström & Palm, 2020). This is in line with the findings of previous studies that students learn material better and show greater motivation, better study strategies, and good performance when they know why they are learning the material (Padilha et al., 2019; Simons et al., 2004; Singh et al., 2021).

In this study, moral sensitivity was the most potent predictor of motivational and self-regulated learning. This finding is consistent with experimental studies conducted at the University of Minnesota (Duckett & Ryden, 1994) and in Korea (Song & Lee, 2020). In these studies, enhanced moral sensitivity was related to improved clinical performance. In the correlation analysis, the scores for total moral sensitivity and three of its factors (patient-oriented care, professional responsibility, and moral conflict) were positively correlated with motivational and self-regulated learning. Moreover, moral sensitivity affects nurses' quality of care (Amiri et al., 2019; Jo & Kim, 2014), for older people (Kang, 2020), and person-centered (Park & Park, 2018) and patient-centered care. Furthermore, the professional responsibility factors of moral sensitivity predict nursing students' clinical performance (Song & Lee, 2020). Overall, college students' moral sensitivity must be enhanced indirectly through the integration of ethics education into the nursing curricula (Martinov-Bennie & Mladenovic, 2015). Therefore, nursing faculties should consider this when restructuring their curricula. In addition, when the medical-surgical nursing practicum was replaced with in-school training (Ha & Lee, 2021), and nursing upper-division courses were fully implemented online (Kim et al., 2020), learning motivation was the most potent predictor of students' problem-solving ability and learning satisfaction. Therefore, strategies to boost the predictors of motivational and self-regulated learning will foster problem-solving abilities in nurses.

5.1 | Study limitations

This study has a few limitations. First, although nursing students were enrolled from colleges in several cities, the study was conducted in only one country—the Republic of Korea—and selection bias cannot be eliminated, and findings cannot be generalized. Second, we could

not collect detailed data on the operation of clinical practicum (e.g., specific learning design and teaching method during the online clinical nursing practicum) because in 2020, the pandemic caused a modification of the course delivery, and each college replaced the on-site clinical placements in their own way. Furthermore, conclusions regarding causality cannot be drawn as this was a cross-sectional study. In addition, the objectivity of this study may be underestimated due to self-reported data. To address these limitations, future studies should employ a longitudinal design to further examine the predictors (i.e., moral sensitivity, hybrid clinical nursing practicum) of motivational and self-regulated learning.

6 | CONCLUSION

Practicum courses using a tailored hybrid model, combining online and in-person approaches for imparting nursing practices and inspiring moral sensitivity, can enhance nursing students' motivational and self-regulated learning. Therefore, nursing faculties should provide hybrid clinical nursing practicum courses that appropriately combine on-site clinical placement with online learning, along with individualized career guidance. Moreover, strategies should be devised to enhance nursing students' moral sensitivity and boost their learning motivation.

AUTHOR CONTRIBUTION

Sunhee Cho and Sun Joo Jang contributed equally to this work. Study design: SC and SJJ. Data collection: SC and SJJ. Data analysis: SC and SJJ. Manuscript writing and revisions for important intellectual content: SC and SJJ.

ACKNOWLEDGMENTS

We would like to thank the students for their participation in this study.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

PERMISSIONS

Permissions were obtained for the original version and Korean version of Moral Sensitivity Questionnaire and the Motivated Strategies for Learning Questionnaire.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ETHICS STATEMENT

The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the Institutional Review Board of Mokpo National University (approval no. MNUIRB-210303-SB-002-01).

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