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RESEARCH ARTICLE

Nursing students' learning commitment, self-efficacy and grit during the COVID 19 pandemic: Quantitative empirical research on adaptation to college life

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Abstract

Aims: To examine the learning commitment, self-efficacy, grit and adaptation to college life among Korean nursing students, under the prolonged COVID-19 situation, and identify the factors that affect their adaptation to college life.

Design: A cross-sectional study.

Methods: The participants were 247 nursing students. The instruments used in the study were the Learning Commitment Scale for Adults, Self-Efficacy Scale, Grit Scale and Campus Life Adaptation Scale (developed for Korean nursing students). A multiple linear regression analysis was conducted using SPSS 23.0.

Results: Adaptation to college life had significant positive correlations with learning commitment, self-efficacy and grit. Moreover, self-efficacy and learning commitment were key correlators for adapting to college life.

KEYWORDS
adaptation to college life, grit, learning commitment, nursing student, self-efficacy

1 | INTRODUCTION

The first case of COVID-19 in South Korea was confirmed in January 2020, and in February, the incidence rate in Daegu and Gyeongsangbuk-do Province increased dramatically, and put Korean society in great shock and fear (Ministry of Health and Welfare, 2020). Since then, strict social distancing measures, daily infection prevention activities and vaccinations have been implemented, and the situation has gradually *relaxed* (Ministry of Health and Welfare, 2020). The prolonged COVID-19 pandemic and the subsequent mandatory lockdown measures have caused the collapse of, and chaos in, the education system worldwide. This collapse has accelerated online teaching and the introduction of new teaching methods (Aristovnik et al., 2020). Similarly, in South Korea, the online teaching mode in colleges accounted for only 0.92% of all teaching modes in 2019, before the outbreak of COVID-19. However, it

exceeded 99.4% in the second semester of 2020. Unprepared, non-face-to-face online lectures have caused confusion and difficulties for both instructors and learners. They have also led to operational, technical and institutional problems, and adverse effects such as a deteriorated quality of teaching, difficult learning outcome management, learning deficits and academic gaps (Joe & Ju, 2020). In 2021, 29.9% of college students considered taking a leave of absence or dropping out of college owing to COVID-19. The main reasons cited were the ineffectiveness of non-face-to-face classes, decrease in social activities and difficulty in adapting to college life in South Korea (Korean Council for University Education, 2021). Furthermore, students' depression tripled compared to before COVID-19; the higher the grade, the more depression they experienced (Korea University Education Council, 2021). Similarly, nursing students have experienced increased depression and anxiety and poorer mental well-being, which resulted in social and psychological difficulties such as

intimidating behaviour in building interpersonal relationships. This situation adversely affects their adaptation to college life, thereby lowering satisfaction with their major, and life in general (Ahn, 2020; Arslan et al., 2021; Aslan & Pekince, 2021; Kim et al., 2021). Therefore, nursing college students' adaptation to college life is becoming more important in terms of learning outcomes and training as future professional nurses.

2 | BACKGROUND

The Korean education system is a single-track system, which operates on a 6–3-3-(2,3)4 basis, with elementary school (7–12 years old), middle school (13–15 years old), high school (16–18 years old) and junior college (a 2–3-year course) or undergraduate university (4 years) level. After many changes, basic nursing education was unified into a 4-year undergraduate program, following the revision of the Higher Education Act in 2011 (Han et al., 2013). As more than 1000 hours of practical time is needed, clinical practice begins in the third and fourth grades in the nursing department, and fundamental nursing practice and skills are learned in school during the first and second grades. The long-term suspension of school due to the COVID-19 pandemic had a negative effect on Korean students' adaptation to college life. In particular, the freshmen who entered college in 2020 and 2021 have not been able to participate in campus classes for these 2 years. They lost the opportunity to practice independent time and credit management, and prepare for their role as a society member by breaking away from the passive learning pattern centred on university entrance exams, which is a characteristic of Korean education (Ahn, 2020; Lee, 2020). In addition, juniors and seniors also experienced a psychological burden, including depression and stress, due to the parallel clinical practice and study in the class, in contrast to the situation before the –19 pandemic (Aslan & Pekince, 2021; Korean Council for University Education, 2021). Adaptation to college life refers to adjusting to social life, such as studies, interpersonal relationships and club activities within the university environment; appropriately coping with personal emotional problems and having an attachment or bonding to the university or department (Choi & Lee, 2012). Students who successfully adapt to college life develop positive thinking and a positive attitude, along with high academic motivation and desirable behavioural characteristics, which contribute to their personal growth and the development of future society (Choi & Lee, 2012; Hurtado et al., 1996). Adaptation to college life is becoming more important in terms of the learning outcomes of nursing students and training of professional nurses, particularly under the prolonged COVID-19 situation. For nursing students, who simultaneously handle a highly difficult major and numerous major-related theories and clinical practices, the failure to adapt to college life, decreases their levels of academic achievement and satisfaction with their major, resulting in a higher possibility of dropouts (Ahn, 2020; Cho & Park, 2018; Lee et al., 2020). Learning type and commitment are also important psychological

factors for nursing students to perform successful academic achievement, prepare for employment, adapt to college life and solve maladjustment issues (Cho & Park, 2018; Lee, 2011). The learning type of nursing students refers to the method preferred by the learner to maximize effective learning effects (Kolb, 2005). It affects their adaptation to college life by influencing learning persistence, learning attitude and independent learning ability (Cho & Park, 2018). Furthermore, learning commitment is a strong personal factor that enables students to focus on learning, while fostering learning motivation and active participation in various educational environments (Chin & Jung, 2020; Lee et al., 2020). Recently, there has been a high interest in learning commitment. Nursing college students with high learning commitment, who are experiencing mixed learning methods with non-face-to-face online teaching, show higher levels of academic achievement, adaptation to college life and satisfaction (Chin & Jung, 2020; Lee et al., 2020). Self-efficacy, an intrinsic factor that makes this learning commitment possible, refers to the confidence necessary to achieve individual goals and is an important factor for reinforcing academic motivation and increasing flexible thinking to adapt well to college life (Cho & Park, 2018; Lee, Lee, & Kwak, 2021b). High self-efficacy among nursing students facing non-face-to-face online learning situations that are being wholly or partially conducted due to the prolonged COVID-19 pandemic, is expected to facilitate adaptation to college life through effective learning performance and successful management of learning outcomes (Kim, Kim, & Lee, 2020). In addition, as self-efficacy represents the ability to regulate and control one's own life by oneself, it is related to grit—which is the ability to use new knowledge and skills with patience in new learning situations (Jung & Jeong, 2018). Grit also refers to patience and passion to achieve long-term goals, and is a personality trait among people who have achieved outstanding performance in all walks of life (Duckworth et al., 2007). Nursing students need constant enthusiasm and perseverance, while studying under pressure to become professional nurses and achieve the goal of passing the nursing examination in 4 years. To this end, grit, which involves continuously striving for long-term goal achievement, eases their adaptation to college life (Lee, Gwon, et al., 2021). Most previous studies on adaptation to college life have focused on freshmen (Ahn, 2020; Choi & Lee, 2012), undergraduates from other majors (Arslan et al., 2021; Ham & Lee, 2020; Lee, 2020) and social support from sources such as friends, advisors and club activities (Ham & Lee, 2020). In addition, previous studies dealt in fragments with variables such as major satisfaction (Kim et al., 2010), learning commitment (Joe & Ju, 2020; Kolb, 2005; Lee, Lee, & Kwak, 2021), self-efficacy (Ahn, 2020; Chin & Jung, 2020; Duckworth et al., 2007; Hurtado et al., 1996; Jung & Jeong, 2018; Lee, 2011; Kim et al., 2020), academic stress (Aslan & Pekince, 2021; Duckworth et al., 2007; Hurtado et al., 1996; Jung & Jeong, 2018), anxiety (Choi & Lee, 2012) and loneliness (Lee, 2020). However, there are very few studies that simultaneously confirm the relationship among learning commitment, self-efficacy, grit and adaptation to college life among

nursing students throughout their academic years. Therefore, this study aims to identify factors associated with the adaptation to college life among Korean nursing students under the prolonged COVID-19. Participants included both freshman and senior nursing college students, who could not have a proper campus life and had to participate in non-face-to-face or partial face-to-face lectures. This study aims to confirm the impacts of self-efficacy, learning commitment and grit on students' adaptation to college life. The results of this study will provide data to develop an effective intervention method to strengthen students' adaptability to college life in general and improve it in the COVID-19 situation.

3 | METHODS

3.1 | Study design

A cross-sectional questionnaire survey was used in the study, and the STROBE (Strengthening the Reporting of Observational studies in Epidemiology) checklist was used in reporting it (see File S1).

3.2 | Setting and participants

A convenience sample of 250 nursing students was recruited from three nursing colleges in Daegu and Gyeongsangbuk-do Province in South Korea. The inclusion criterion for selecting subjects was as follows: (1) a nursing student enrolled in March 2021; (2) over the age of 19; (3) successfully completed the high school course (16–18 years); (4) agreement to attend the survey. Using the G*Power 3.1 program, when the significance level of the two-sided test (α) of 0.05, the effect size (ES) of 0.15 and 17 predictor variables (13 general characteristics, 3 dependent variables and 1 independent variable) were included, the sample size to maintain the test power (1-β) of 0.95 was calculated to be 208. Therefore, the number of participants met the appropriate number of samples necessary for this study. The data were collected from June 10 to July 1, 2021. Students agreed to voluntarily participate in the study. On average, the questionnaire took each participant approximately 20 to 25 minutes to complete, using a link from Google Forms. Among the 250 nursing students who met the inclusion criteria, 247 completed the questionnaires, which were used for the final statistical analysis.

3.3 | Instruments

3.3.1 | Learning commitment

The subjects' learning commitment was measured using the Learning Commitment Scale for Adults developed by Kim et al. (2010). The scale consists of 29 items divided into nine subscales: three items on challenge, skill and balance; three on a clear goal; three on specific feedback; three on behaviour, perception and accordance; three on task concentration; three on a sense of control; three on the loss of self-consciousness; three on an altered sense of time and five items on self-purpose experience. Each item is rated on a six-point Likert scale, with higher scores indicating higher learning commitment. At the time of development, Cronbach's α was 0.65–0.90 for each subscale (Kim et al., 2010), and Cronbach's α was 0.95 in this study.

3.3.2 | Self-efficacy

To assess the subjects' self-efficacy, the Self-Efficacy Scale was used. It was developed by Sherer et al. (1982) and adapted by Hong (1995) and consists of 23 items with confirmed reliability and validity, along with two subscales: General Self-Efficacy and Social Self-Efficacy. They are measured on a five-point Likert scale, with negative items scored backward. A higher score indicates a higher level of self-efficacy. Cronbach's α was 0.86 in Hong's study (1995) and 0.86 in this study.

3.3.3 | Grit

To measure grit, this study used a tool that was developed by Duckworth et al. (2007), and later modified and supplemented by Lee (2014). It contains 12 items: four items on interest and consistency, and eight items on effort and persistence. The items are rated on a five-point Likert scale. Cronbach's α was 0.79 in Lee's (2014) study, 0.68 in Kim et al.'s (2018) study and 0.61 in this study.

3.3.4 | Adaptation to college life

To assess adaptation to college life, this study employed the Campus Life Adaptation Scale developed for Korean nursing students by Park and Kim (2019), consisting of 34 items: nine on interpersonal relationships, nine on satisfaction with one's major, five on ease of studying one's major, five on stress management, three on preparation for employment and three on academic commitment. Each item is scored on a five-point Likert scale, and negative items are scored backward. A higher score indicates a higher level of adaptation to college life. At the time of development, Cronbach's α was 0.92. In this study, Cronbach's α was 0.93.

3.4 | Data analysis

The collected data were processed using SPSS for Windows Ver. 23.0 (SPSS), and descriptive statistics were used to estimate the subjects' general characteristics and the features of the main variables. The mean difference analysis of the main variables, according to the general characteristics, was performed via t-tests and ANOVA. Post hoc comparisons were conducted using Scheffé tests. In addition, correlations between the major variables were analysed using

Pearson's correlation coefficient, and the factors influencing adaptation to college life were analysed using multiple linear regression.

3.5 | Ethical considerations

The study received approval from the Bioethics Review Committee of Daegu Catholic University (CUIRB-2021-0015). The Google Form questionnaire was provided through a link in each grade chat room of the three nursing colleges that allowed data collection. All respondents participated voluntarily in the study. Participants received information on the purpose and procedure of the study, contents of the questionnaire and instructions on how to fill out the questionnaire online. In addition, it was explained that participants could withdraw from the study at any time without consequences. The researchers received consent from the subjects who understood all information and voluntarily participated in the study. No individually identifiable data were requested from the participants, and the anonymity of all data were ensured. If a participant did not provide consent, their participation in the study was automatically terminated.

4 | RESULTS

Table 1 shows that participants' average age was 21.38 ($\pm$2.72) years, and female students represented the majority (83.8%). Juniors and seniors accounted for 59.6% of the participants. The participants' characteristics and differences in adaptation to college life were based on the general characteristics of nursing students. No significant differences were found in gender ($t=2.325$, $p=0.021$), year ($F=3.411$, $p=0.018$), club activities ($t=5.492$, $p<0.001$), socio-economic status ($F=6.826$, $p=0.001$), number of consultations (interviews) with professors (per semester) ($F=3.788$, $p=0.024$) and learning styles ($F=3.354$, $p=0.020$). In particular, the level of adaptation to college life was significantly higher for those from higher socio-economic status than in the case of medium and low socio-economic status. It was also higher if they had more than four consultations with professors per semester, than 0–1 consultation. Although each tool does not present its own reference values such as the scores that can classify upper, middle and lower levels of measurement, for all tools, a higher average value meant higher learning commitment, self-efficacy, grit and adaptation to college life. Table 2 reveals that the level of nursing students' learning commitment (3.63 ± 0.87), self-efficacy (3.37 ± 0.48), grit (3.11 ± 0.48) and adaptation to college life (3.58 ± 0.52) averaged above the middle value of the scale, which suggests that all of them were above the middle level. Table 3 indicates that nursing students' learning commitment, self-efficacy, grit and adaptation to college life had significantly strong relationships with each other ($r=0.414\sim0.694$).

Table 4 presents the results of the hierarchical regression analysis to identify factors affecting nursing students' adaptation to college life. In Model 1, the factors were gender, year, club activities, socio-economic status, number of consultations and learning types. They

showed significant differences in adaptation to college life, among the general characteristics of the subjects, when input as control variables. In addition, categorical data were converted into dummy variables, for example, grade, socio-economic status, consultation and learning type. In Model 2, the independent variables of grit, learning commitment and self-efficacy were additionally included. Out of the input general characteristics, all categorical variables were treated as dummy variables. As a result of testing the assumptions of the regression analysis, the tolerance limit was greater than 0.1 in both Model 1 (0.58–0.96) and Model 2 (0.47–0.92) and VIF was less than 10 in both Model 1 (1.082–2.024) and Model 2 (1.092–2.365). It was confirmed that no problem of multicollinearity existed between the variables. The Durbin–Watson value, which is a test for the independence of the residuals, was 1.736, confirming that no autocorrelation existed. Furthermore, the calculated regression models, Model 1 ($F=6.546$, $p<0.001$) and Model 2 ($F=22.766$, $p<0.001$), fit the regression model. The explanatory power of Model 1 with general characteristics was 21.3% and that of Model 2 with the main variables was 57.0%, which was 35.7% higher than that of Model 1. Learning commitment ($\beta=0.392$, $p<0.001$) and self-efficacy ($\beta=0.402$, $p<0.001$) were positive associated factors for adaptation to college life. Among the general characteristics, 'Yes' group for club activity had a greater influence on adaptation to college life than the 'No' group. In addition, the 'high' socio-economic status group had a greater influence on adaptation to college life than the 'low' group.

This study attempted to identify factors influencing adaptation to college life, including learning commitment, self-efficacy and grit among nursing students. It also sought to provide basic data for exploring specific measures to contribute to the successful adaptation to college life in the prolonged COVID-19 situation. The results indicated that the score for learning commitment of nursing students had an average of 3.63 (out of 6 points), which was similar to the study results of Chin and Jung (2020), who measured nursing students' learning commitment before COVID-19 and found the average to be 3.06 (out of 5 points). It indicates that the level of nursing students' learning commitment before and after COVID-19 is similar (Park & Han, 2020). This finding differs from that of previous studies, which concluded that the chaos of rapidly changing educational environments may have impeded learners' learning commitment (Joe & Ju, 2020; Ministry of Education, 2021). This difference may be caused by the advantages of online classes. Online teaching has the convenience of allowing learners to freely choose their space and time of study (Oh & Ryu, 2020). Diverse and new real-time online teaching tools such as MS Teams, ZOOM, Google Hangouts, Webex, Naver Line works and Gooroomee, have increased learning commitment.

Therefore, professors and instructors should provide appropriate learning environments and teaching methods to improve students' learning commitment, by identifying and improving their weaknesses, after comparing face-to-face teaching methods before COVID-19 and non-face-to-face teaching methods after COVID-19, and by systematically leveraging the advantages.

TABLE 1 General characteristics of nursing students and adaptation to college life according to the characteristics ($N = 247$).

Characteristics	Categories	N (%)	Adaptation to college life Mean ± SD	t or F (p) Scheffé
Age	≤20 (years old)	99 (40.1)	3.51±0.50	1.975 (0.118)
	21~23	111 (44.9)	3.63±0.49	
	24~26	26 (10.5)	3.54±0.62	
	≥27	11 (4.5)	3.84±0.64	
Gender	Male	40 (16.2)	3.62±0.52	2.042 (0.042)
	Female	207 (83.8)	3.48±0.50	
Grade	1st (Freshman)	48 (19.4)	3.54±0.52	3.411 (0.018) *
	2nd (Sophomore)	52 (21.1)	3.40±0.46	
	3rd (Junior)	32 (13.0)	3.57±0.49	
	4th (Senior)	115 (46.6)	3.67±0.53	
Experience of leave of absence	Yes	37 (15.0)	3.51±0.66	−0.880 (0.380)
	No	210 (85.0)	3.59±0.49	
Religion	Protestantism	25 (10.1)	3.80±0.48	1.760 (0.155)
	Catholic	30 (12.1)	3.54±0.58	
	Buddhism	20 (8.1)	3.52±0.58	
	No religion	172 (69.6)	3.59±0.50	
Experience in club activities	Yes	162 (65.6)	3.70±0.48	5.492 (<0.001)
	No	85 (34.4)	3.34±0.51	
Residential environment	Living with parents	134 (54.3)	3.57±0.52	0.364 (0.779)
	Living alone	45 (18.2)	3.54±0.55	
	Lodging and dormitory	66 (26.7)	3.61±0.49	
	Others	2 (8.0)	3.85±0.37	
Socioeconomic status	High [a]	65 (26.3)	3.77±0.46	6.826 (<0.001) a>b, c **
	Medium [b]	132 (53.4)	3.53±0.51	
	Low [c]	50 (20.2)	3.46±0.56	
Allowance level (Korea Won)	< KRW 100,000	18 (7.3)	3.44±0.43	0.687 (0.601)
	KRW 100,000–200,000	35 (14.2)	3.50±0.57	
	KRW 21 0,000–300,000	63 (25.5)	3.59±0.49	
	≥ KRW 310,000	126 (51.0)	3.62±0.54	
	Others (no allowance etc.)	5 (2.0)	3.55±0.20	
Number of consultations with professors (per semester)	≤1[a]	135 (54.7)	3.51±0.53	3.788 (0.024) a<c***
	2–3[b]	89 (36.0)	3.63±0.48	
	≥4[c]	23 (9.3)	3.80±0.56	
Types of clinical practice	Clinical practice	95 (38.5)	3.63±0.49	0.528 (0.664)
	In-school practice	23 (9.3)	3.49±0.50	
	Non-face-to-face practice	2 (8.0)	3.69±1.06	
	Mixed (face-to-face and non-face-to-face practices)	42 (17.0)	3.64±0.61	
Types of theoretical lecture	Face-to-face	86 (34.8)	3.58±0.54	0.490 (0.689)
	Non-face-to-face (Real-time online teaching)	8 (3.2)	3.43±0.71	
	Non-face-to-face (online lecture)	4 (1.6)	3.35±0.16	
	Mixed (face-to-face and non-face-to-face lectures)	149 (60.3)	3.59±0.50	

TABLE 1 (Continued)

| Characteristics | Categories | N (%) | Adaptation to college life | |
			Mean ± SD	t or F (p) Scheffé
Learning Style Type	Diverger	99 (40.1)	3.48 ± 0.55	3.354 (0.020)*
	Assimilator	55 (22.3)	3.57 ± 0.55	
	Converger	10 (4.0)	3.48 ± 0.34	
	Accommodator	83 (33.6)	3.72 ± 0.44	

Note: SD: Standard Deviation, $p < 0.05$, *As a Post hoc after ANOVA test (Scheffé) represents there is no difference among each group, ** the significant difference of adaptation to college life each socioeconomic status group. a, b and c mean the adaptation to college life average, indicating the level of adaptation to college life was significantly higher for those from higher socioeconomic status than in the case of medium and low socioeconomic status. *** a group (0–1 consultation with professor)'s adaptation to college life level is lower than c group and no significant difference with b group.

TABLE 2 Levels of learning commitment, self-efficacy, grit and adaptation to college life among nursing students ($N = 247$).

Variables	Mean ± SD	MIN	MAX	Range
Learning commitment	3.63 ± 0.87	1.38	6.00	1–6
Self-efficacy	3.37 ± 0.48	2.13	4.65	1–5
Grit	3.11 ± 0.48	1.77	4.38	1–5
Adaptation to College Life	3.58 ± 0.52	2.03	4.82	1–5

In this study, the self-efficacy of nursing students averaged 2.13 (out of 5 points); this was lower than the 3.33 points average in Park et al.'s (2018) study, where they measured the self-efficacy of nursing students before COVID-19. It was also lower than the 3.43 points average measured by Ha et al. (2020), who studied self-efficiency during COVID-19 (Ha et al., 2020).

In South Korea, intensive state-led 'social distancing' had been implemented to prevent the spread of the COVID-19 epidemic. Since December 2019, most classes in universities had shifted to online courses (Ministry of Education, 2021; Park & Han, 2020), which resulted in students' college lives revolving only around class or subject-centred educational aspects. As a result, various non-curricular activities, the social aspects of college life, such as volunteer and group activities, exchange students, international exchange programs, language training and working holiday programs have been limited (Baek, 2019), making it difficult for students to increase self-efficacy. As nursing students' self-efficacy can be enhanced through various social training programs, it is necessary to develop and apply effective programs considering the COVID-19 situation, which has imposed many restrictions on economic and social aspects (Oh & Ryu, 2020).

The grit of nursing students in this study averaged 3.11 (out of 5 points); this was slightly lower than the 3.31-point average in Lee and Park's (2018) study, where they measured nursing students' grit prior to the COVID-19 situation. It was also lower than the 3.51 points average in Lee, Gwon, et al.'s (2021) study measuring the grit of nursing students under the COVID-19 situation. This result is assumed to be caused by the long-term restrictions on daily lives, including college life, due to COVID-19, resulting in difficulties in

maintaining efforts and plans to achieve goals as nursing students. As one can learn and change one's grit, the crisis of COVID-19 is a time when instructors should make efforts to increase students' grit, enabling them to exert continuous efforts toward achieving ultimate goals with patience and passion (Chin & Jung, 2020; Lee & Kim, 2021).

The level of adaptation to college life among male students (3.62 points) was higher than that of female students (3.48 points). The most common reason male students chose the nursing profession was the high employment rate (Son et al., 2018). In South Korea, senior undergraduates are facing a severe unemployment crisis due to COVID-19. It is assumed that the high employment rate has positively impacted the level of satisfaction with their major, facilitating their adaptation to college life.

The level of adaptation to college life by year was lowest in the second year (3.40 points), followed by the first (3.54 points), third (3.57 points) and fourth (3.67 points) years. It is assumed that second-year students entered university in 2020, when they were in a state of social chaos due to the sudden outbreak of COVID-19, and are still leading their college lives in the aftermath of the pandemic. The level of adaptation to college life was higher for students who participated in club activities in college (3.70 points) than those who did not (3.34 points). In this study, 59.6% of participants were in their third and fourth years, and participated in various club activities. Even though they could not actively engage in regular club meetings and group activities owing to COVID-19, they continued to communicate with other students, who they had befriended via club activities in their first and second years, through social networks. Such positive social support can be seen as conducive to college life adaptation (Baek, 2019; Ham & Lee, 2020). Nursing students showed a higher level of adaptation to college life when their subjective perception of socio-economic status was higher; this finding is similar to the results of a previous study in which nursing students of the upper-middle class showed a higher level of adaptation to college life than students of the middle class (Oh et al., 2021). Therefore, in a situation where the crisis of the global economic recession is increasing owing to the spread of COVID-19, there should be more active measures to secure scholarship systems and specific support policies that can help nursing students adapt to college life at

TABLE 3 Correlations among learning commitment, self-efficacy, grit and adaptation to college life among nursing students ($N = 247$).

	Learning commitment	Self-efficacy	Grit	Adaptation to College life
Learning commitment	1			
Self-efficacy	0.414*	1		
Grit	0.518*	0.694*	1	
Adaptation to College Life	0.611*	0.632*	0.542*	1

*$p < 0.001$.

TABLE 4 Hierarchical regression analysis adaptation to college life with associated factors ($N = 247$).

	Step 1				Step 2			
Variables	B	S.E	ß	t(p)	B	S.E	ß	t(p)
Constant	3.388	0.097		34.762 (<0.001)	1.220	0.198		6.151 (<0.001)
Gender (ref: female)	0.177	0.085	0.126	2.089 (0.038)	0.060	0.064	0.043	0.935 (0.351)
Grade (ref: 1st)								
2nd	−0.077	0.094	−0.061	−0.822 (0.412)	−0.045	0.070	−0.036	−0.649 (0.517)
3rd	0.041	0.108	0.027	0.377 (0.707)	0.035	0.080	0.023	0.439 (0.661)
4th	0.087	0.083	0.083	1.037 (0.301)	0.000	0.062	0.000	−0.007 (0.994)
Club activity (ref: No)	0.329	0.065	0.303	5.096 (<0.001)	0.191	0.049	0.176	3.912 (<0.001)
Socioeconomic status(ref: High)								
Medium	−0.247	0.071	−0.239	−3.466 (0.001)	−0.070	0.055	−0.067	−1.274 (0.204)
Low	−0.376	0.088	−0.292	−4.254 (<0.001)	−0.139	0.068	−0.108	−2.036 (0.043)
Consultation (ref: ≤1)								
2–3	0.042	0.065	0.039	0.649 (0.517)	−0.013	0.048	−0.012	−0.265 (0.792)
≥4	0.210	0.110	0.118	1.913 (0.057)	0.036	0.082	0.020	0.433 (0.666)
Learning types (ref: Diverger)								
Assimilator	0.081	0.078	0.065	1.042 (0.299)	−0.032	0.058	−0.026	−0.554 (0.580)
Converger	0.158	0.154	0.060	1.025 (0.306)	0.055	0.115	0.021	0.482 (0.630)
Accommodator	0.193	0.070	0.176	2.765 (0.006)	0.100	0.053	0.091	1.889 (0.060)
Grit					−0.014	0.082	−0.011	−0.169 (0.866)
Learning commitment					0.234	0.031	0.392	7.514 (<0.001)
Self-efficacy					0.434	0.066	0.402	6.616 (<0.001)
	$R^2 = 0.251$, Adj $R^2 = 0.213$				$R^2 = 0.596$, Adj $R^2 = 0.570$			
	$F(p) = 6.546$ (<0.001)				$F(p) = 22.766$ (<0.001)			

Note: ref: each dummy variable's reference group. Club activity 'Yes' group have a greater influence on adaptation to college life than 'No' group, socioeconomic status 'high' have a greater influence on adaptation to college life than low group.

academic and national levels (Kim, Lee, & Park, 2020b). In addition, nursing students exhibited a higher level of adaptation to college life when they consulted more professors. This was partially in line with the results of previous studies on the factors influencing college life, such as trust, intimacy with professors (Chin & Jung, 2020), emotional support during the COVID-19 situation and the importation source for study (Lee, Gwon, et al., 2021).

As professors can serve as social support systems while students are adjusting to college life, it is necessary to establish online and offline systems in college where students can receive timely consultations whenever necessary (Lee, Gwon, et al., 2021).

Any experience in clinical practice showed a higher level of adaptation to college life, which means that clinical practice is an opportunity for nursing students to develop their potential, by

directly or indirectly applying the theoretical knowledge required to become a professional nurse in the clinical field. It is also an important experience that has a decisive influence on establishing nursing professional value (Jeon & Kim, 2017). In the case of learning style types, 'accommodator' (3.72 points) learners who gain experience through actual task performance and adapt well to changes in the environment and new situations indicated the highest level of adaptation (Lee, 2011). It was followed by 'assimilator' (3.57 points) learners who have the ability to integrate various kinds of information and logically organize it; 'diverger' (3.48 points) learners who prefer learning by observing specific situations from various perspectives and 'converger' (3.48 points) learners who have outstanding abilities and skills to apply theories to actual situations (Cho & Park, 2018). In this regard, it is assumed that identifying the learning types of nursing students is necessary to prepare interventions for improving their academic satisfaction and performance, by applying them to the actual education field. The level of adaptation to college life among nursing students had significant positive correlations with learning commitment, self-efficacy and grit. Previous studies demonstrated that the higher the learning commitment (Lee et al., 2020), self-efficacy (Lee, Lee, & Kwak, 2021) and grit (Lee, Gwon, et al., 2021; Lee & Park, 2018), the higher the level of adaptation to college life. These results reflect the outcomes of this study.

4.1 | Limitations

This study has some limitations. First, as a non-probabilistic sample was used, generalizing conclusions is not possible. Second, participating in this survey required Internet access; therefore, participants without Internet access were unable to complete our questionnaire.

5 | CONCLUSIONS

In this study, self-efficacy and learning commitment were positively associated factors for adaptation to college life. To increase adaptation, in the prolonged COVID-19 situation, programs that can contribute to adaptation by enhancing self-efficacy and learning commitment should be developed and applied. Specifically, building infrastructure for high-quality online teaching and fostering the capacities of lecturers is necessary. In addition, more efforts should be exerted to prepare practical measures against COVID-19, based on a safe environment to increase social support resources for students through club activities and consultations with professors, which have been limited owing to social distancing measures in managing COVID-19. Further, waves of COVID-19 infections are highly likely to continue in the future. Therefore, based on the results of this study, nursing educators can prepare, and effectively apply supporting resources to increase students' adaptation to college life and improve college life satisfaction.

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