

Convergence Factors Influencing Clinical Practice Satisfaction of Nursing Students

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간호학생의 임상실습만족도에 미치는 융복합적 영향요인

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Abstract The aim of this study was to identify the convergence factors contributing to clinical practice satisfaction in Korean nursing students. Data were collected using self-administered questionnaires from April 1 to May 15, 2015. The participants were 83 nursing students, and a mid-sized private university school of nursing in the Korea was selected. The data were analyzed by descriptive statistics, T-test, ANOVA, Pearson's correlation coefficient, and stepwise multiple regression with SPSS 22.0 program. Satisfaction in major significantly differed by age. Clinical practice satisfaction was positively correlated with satisfaction in major and clinical competence. The factors that significantly influenced clinical practice satisfaction were clinical competence and satisfaction in major, which together explained 26% of the total variance. To improve satisfaction in major and clinical competence among Korean nursing students, it will be necessary to provide nursing students with clinical adaptation programs and preceptor education.

• **Key Words** : Convergence, Satisfaction, Competence, Clinical practice, Nursing students

요약 이 연구의 목적은 한국 간호학생의 임상실습만족도에 미치는 융복합적 영향요인을 확인하기 위해 조사되었다. 자료수집은 자가보고기입식 형태로 수집기간은 2015년 4월 1일부터 5월 15일까지였으며, 연구대상자는 일개 중소규모의 4년제 대학의 간호학생 83명이었다. 자료분석은 SPSS 22.0 프로그램을 이용하였으며, 서술적 통계, T-test, 분산분석(ANOVA), 피어슨 상관관계 및 단계적 다중회귀분석 방법을 사용하였다. 전공만족도는 대상자의 연령에 따라 유의한 차이를 보였다. 임상실습만족도는 전공만족도와 임상역량 모두 유의한 순상관관계를 나타냈다. 임상실습만족도에 유의하게 영향을 미치는 요인은 전공만족도와 임상역량이었으며, 두 요인이 전체 변량의 26%를 나타내었다. 따라서 한국 간호학생의 전공만족도와 임상역량을 증진시키기 위해서는 간호학생에게 임상적응프로그램과 프리셉터 교육을 제공하는 것이 필요하다.

• **주제어** : 융합, 만족, 역량, 임상실습, 간호학생

1. Introduction

The nurse shortage has become an issue in Korea as

the demands for nursing care and professional nurses have increased due to an expanding healthcare system and aging population. On average across OECD

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countries, there were around nine nurses per 1,000 population in 2013, up from less than eight nurses in 2000, so the number of nurses has gone up both in absolute terms and on a per capita basis. In 2013, the number of nurses per capita was highest in Switzerland, Norway, and Denmark, with more than 14 nurses per 1,000 population. However, Korea have 5.2 practicing nurse per 1,000 population. With regards to partner countries, the number of practicing nurses per capita in Korea was generally low compared with the OECD average[1].

The global nurse shortage also increases the need for an enhanced understanding of career choice, which is paramount to recruitment and retention strategies for relieving this shortage[2]. It is very important to understand why nursing students choose nursing as a career choice. According to previous studies, the influential factors for considering nursing as a career choice are a desire to help and care for others, the chance to work with people in a variety of work settings, job opportunities and security, income potential, impact of family and friends in the nursing profession, positive images of nurses, and quality of work environment[3,4].

The aim of nursing education is to educate nursing students regarding the knowledge, skills, and values needed in professional practice. Budgen and Gamroth[5] suggested that the primary task in professional practice-based education is to ensure that students have adequate "real-life" practice experience to competently apply academic preparation. Nurse scholars also have explored the clinical environment, unit management, supervisory relationships, the clinical facilitator, student readiness, and assessment as key factors that enhance or hinder student learning in clinical nursing education[6,7,8].

Nursing education attempts to combine the best of both academic and practical traditions, and the goal of integrating theoretical and practical knowledge is emphasized in nursing curricula[9]. Thus, there is a clear need for new teaching and learning strategies in

current nursing education to make students aware of the relationship between what they learn and how they learn it[10]. Hence, teaching nursing students to think critically or challenging them to think is one way to cultivate their metacognitive ability. This skill should help them to recognize their limitations, change their learning strategies, and monitor their thinking to improve their performance in the ever-changing health care environment[11,12]. Nursing students must use a variety of mental processes, such as critical inquiry, reasoning, judgment, and creativity, to solve problems and apply procedures or therapies[13-16].

Satisfaction in a major is a product of a judgment process about how an individual evaluates his or her major at present, consisting of the major subject, the professor - student relationship, general interests in learning, and social perception[17,18]. In general, nursing students can feel satisfaction in their major through nursing subjects and clinical practice, interpersonal relationship, and social image of the nursing profession. If nursing students are dissatisfied with their major, they can fail. Finally, they will have low job satisfaction and clinical competency[17,18].

Clinical practice plays important roles in forming values and attitudes toward nursing in nursing students[19-23]. However, clinical practice satisfaction in most nursing students showed low levels, which was related to the difference between theory and clinical practice, the shortage of acquisition of clinical skills, low satisfaction in major, and low motivation in the clinical setting of nursing students[24]. Negative perception of clinical practice brings about decreased clinical practice satisfaction and clinical competency. It also produces low identity and image of the nursing profession[25]. Therefore, to meet the needs of the learners effectively in clinical practice, it is necessary to investigate factors contributing to the clinical practice satisfaction of nursing students.

Research on clinical practice satisfaction in Korean nursing students has largely focused on the following areas: the comparison of stress coping and satisfaction

with clinical practice according to the grade[26], the relationship of self-leadership, critical thinking, and clinical satisfaction[27], effects of core fundamental nursing skills on practice satisfaction[28]. Although previous studies have examined clinical practice satisfaction, they did not investigate the relationship among the related factors such as clinical competency and satisfaction in major that have affected on nursing students' clinical practice satisfaction

The aim of this study was to identify the convergence factors contributing to clinical practice satisfaction in Korean nursing students. The specific objectives were as follows: (1) to investigate the levels of satisfaction in major, clinical competence, and clinical practice satisfaction among Korean nursing students; (2) to determine the differences in satisfaction in major, clinical competence, and clinical practice satisfaction by nursing students' demographic characteristics; (3) to determine the relationships between satisfaction in major, clinical competence, and clinical practice satisfaction; and (4) to identify the convergence factors contributing to clinical practice satisfaction among Korean nursing students.

2. Methods

2.1 Design

A descriptive research design was used to investigate satisfaction in major, clinical competence, and clinical practice satisfaction and to identify factors contributing to clinical practice satisfaction among nursing students in Korea.

2.2 Sampling and procedure

The participants in this study were 83 nursing students, and a mid-sized private university school of nursing in the Korea was selected. A convenience sample of junior and senior students in the traditional generic Bachelor of Science in Nursing program of the university was surveyed. A total of 90 questionnaires

were distributed: 85 (94.4%) were returned, and 83 were used for final data analysis.

Using G*Power 3.1.7 software (Heinrich-Heine-Universität Dusseldorf, Dusseldorf, North Rhine-Westphalia, Germany), power analysis revealed a .90 score for multiple regression analysis with a medium effect size of .15 for two independent variables and a significance level of .05. The sample size of $N = 83$ was satisfactory for identifying factors affecting clinical practice satisfaction among nursing students. Data were collected using self-administered questionnaires from April 1 to May 15, 2015. The purpose of this study was explained to nursing students in the classroom environment. The total time required for the questionnaire's completion was roughly 15 minutes.

2.3 Measurements

- Satisfaction in major

Satisfaction in major was assessed using the scale developed by Ha[24] and modified by Lee[29]. It consists of 18 items with a 5-point Likert scale (ranging from 1 = strongly disagree to 5 = strongly agree). A higher score indicated a higher level of satisfaction in major. The Cronbach's α coefficient was reported as .90 in Lee's study [29] and was .89 in this study.

- Clinical competence

Clinical competence was assessed using the scale developed by Lee et al.[30] and modified by Choi[31]. It consists of 45 items and 5 subscales: nursing process (11 items), nursing skill (11 items), teaching/coordinating (8 items), interpersonal relationship/communication (6 items), and professional development (9 items). Responses to the items were recorded on a 5-point Likert scale (ranging from 1 = very poor to 5 = excellent). A higher score indicated a higher level of clinical competence. The Cronbach's α coefficient was reported as .92 in Choi's study[31] and was .95 in this study.

- Clinical practice satisfaction

Clinical practice satisfaction was assessed using the scale developed by Lee[32] and modified by Lee, Kim, & Kim[33]. It consists of 31 items with a 5-point Likert scale (ranging from 1 = strongly disagree to 5 = strongly agree). A higher score indicated a higher level of clinical practice satisfaction. The Cronbach's α coefficient was reported as .89 in Lee, Kim, & Kim's study[33] and was .90 in this study.

2.4 Data analysis

Data analysis was performed using SPSS for Windows (version 22.0, IBM Corp., Armonk, NY, USA). Descriptive statistics were used to summarize the general demographics. *T*-tests and analysis of variance (including Scheffé's test for post hoc analysis) were used to compare the differences in satisfaction in major, clinical competence, and clinical practice satisfaction by demographic characteristics. Pearson's correlation coefficient was used to determine the relationships between variables.

Stepwise multiple regression analysis was performed to explore which factors predicted clinical practice satisfaction in participants. A $p < .05$ was considered statistically significant.

Multicollinearity, residuals, and outlying values were examined to test the regression analysis hypotheses regarding variable independence. First, correlation coefficients between variables ranged from .373 to .382; thus, no explanatory variable with a correlation coefficient higher than .80 was found. Predictors were confirmed to be independent from one another. There was no auto-correlation problem as the Durbin - Watson statistic was 2.137. In addition, the variance inflation factor was 1.162 (≤ 10), implying no issues with multicollinearity. The results of testing the hypotheses on the residuals satisfied the hypotheses of multicollinearity, residual normality, and homoscedasticity. Cook's distance for examining outlying values did not exceed 1.0. Accordingly, all hypotheses of the regression equation were satisfied. The results of the

regression analysis were considered reliable.

2.5 Ethical considerations

The researcher obtained written permission from all nursing students who agreed to participate in this study. They were assured that their names and other identifying data would be kept confidential and were informed of their rights to withdraw from the study at any time and to refuse to answer any questions. After completing the questionnaire, the researcher provided each participant with stationery as a reward.

3. Results

3.1 Demographic characteristics of the sample

Female students comprised 85.5%, and male students comprised 14.5% (Table 1). The participants' mean age was 21.7 years. Of the total sample, 48 nursing students (57.8%) studied a natural science curriculum track in high school. Most participants (90.4%) tested their career aptitude assessment during high school. With regard to motivation for the choice of nursing, 41.0% reported employment guarantee, 33.7% reported aptitude and interest, 15.7% reported recommendation of family and surroundings, and 9.6% reported other.

(Table 1) General participant characteristics (N = 83)

Characteristics	Categories	N (%)
Gender	Female	71(85.5)
	Male	12(14.5)
Age (year)	20	10(12.0)
	21	53(63.9)
	≥ 22	20(24.1)
	M \pm SD (Range)	21.73 \pm 2.37 (20 - 38)
Curriculum track in high school	Liberal arts	35(42.2)
	Natural science	48(57.8)
Career aptitude assessment	Yes	75(90.4)
	No	8(9.6)
Motivation on choice nursing	Employment guarantee	34(41.0)
	Aptitude and interest	28(33.7)
	Recommendation of family and surroundings	13(15.7)
	Other	8(9.6)

3.2 Scores on satisfaction, clinical competence, and clinical practice satisfaction scales

The mean scores for satisfaction in major, clinical competence, and clinical practice satisfaction are shown in Table 2. The mean scores for satisfaction in major and clinical competence were 70.21 ($SD = 7.19$) and 151.62 ($SD = 17.82$), respectively. The mean scores for clinical practice satisfaction were 106.20 ($SD = 11.57$).

<Table 2> Descriptive statistics of study variables ($N = 83$)

Variables	M ± SD	Range
Satisfaction in major	70.21 ± 7.19	51 - 85
Clinical competence	151.62 ± 17.82	113 - 222
Clinical practice satisfaction	106.20 ± 11.57	81 - 142

3.3 Differences in satisfaction in major, clinical competence, and clinical practice satisfaction by demographic characteristics

Satisfaction in major significantly differed by age ($F = 3.21, p = .045$) (Table 3). Those with more than 22 years showed higher scores than the other two groups. However, there were no significant differences in

<Table 3> Differences in satisfaction in major, clinical competence, and clinical practice satisfaction by demographic characteristics ($N = 83$)

Characteristics	Categories	Satisfaction in major		Clinical competence		Clinical practice satisfaction	
		M ± SD	t or F (ρ)	M ± SD	t or F (ρ)	M ± SD	t or F (ρ)
Gender	Male	72.75 ± 4.57	1.32	156.75 ± 14.32	1.07	110.58 ± 9.18	1.42
	Female	69.78 ± 7.49	(.189)	150.76 ± 18.29	(.284)	105.46 ± 11.83	(.158)
Age(year)	20	65.20 ± 5.90	3.21	143.10 ± 11.92	1.61	101.10 ± 7.30	1.26
	21	70.50 ± 7.73	(.045)	151.81 ± 18.91	(.205)	106.45 ± 11.81	(.289)
	≥22	71.95 ± 5.18		155.40 ± 16.46		108.10 ± 12.39	
Curriculum track in high school	Liberal arts	69.85 ± 7.23	-.38	152.54 ± 18.35	.39	106.08 ± 11.08	-.08
	Natural science	70.47 ± 7.24	(.700)	150.95 ± 17.59	(.692)	106.29 ± 12.04	(.937)
Career aptitude assessment	Yes	70.61 ± 6.96	1.54	151.48 ± 17.86	-.22	105.76 ± 11.58	-1.07
	No	66.50 ± 8.78	(.125)	153.00 ± 18.65	(.820)	110.37 ± 11.38	(.287)
Motivation on choice nursing	Employment guarantee	69.26 ± 6.48		151.47 ± 19.82		106.17 ± 11.93	
	Aptitude and interest	72.46 ± 7.23	2.03	152.96 ± 19.98	.18	106.35 ± 11.73	.03
	Recommendation of family and surroundings	67.15 ± 8.28	(.116)	151.61 ± 9.76	(.908)	105.38 ± 10.87	(.990)
	Other	71.37 ± 6.78		147.62 ± 11.86		107.12 ± 12.76	

Scheffé’s test among the three groups.

There was no significant difference in clinical competence and clinical practice satisfaction by demographic characteristics.

3.4 Correlations between satisfaction in major, clinical competence, and clinical practice satisfaction

The correlations between the study variables are shown in Table 4. Clinical practice satisfaction was positively correlated with satisfaction in major ($r = .42, p < .001$) and clinical competence ($r = .46, p < .001$). Satisfaction in major was also positively correlated with clinical competence ($r = .39, p < .001$).

<Table 4> Correlations between satisfaction in major, clinical competence, and clinical practice satisfaction ($N = 83$)

Variables	Satisfaction in Major	Clinical Competence
	r (ρ)	r (ρ)
Satisfaction in major	1	
Clinical competence	.39 (<.001)	1
Clinical practice satisfaction	.42 (<.001)	.46 (<.001)

3.5 Factors influencing clinical practice satisfaction

Stepwise multiple regression analysis was performed to identify factors affecting clinical practice satisfaction among nursing students. General demographics that showed no significant differences were excluded among independent variables. Satisfaction in major and clinical competence were included as independent variables.

〈Table 5〉 Factors influencing clinical practice satisfaction (N = 83)

	B	β	R^2	Adj R^2	t	p
(Constant)	39.48				3.26	.002
Clinical competence	.22	.35	.21	.20	3.41	.001
Satisfaction in major	.45	.28	.28	.26	2.75	.007
$F(2, 80) = 15.83, p < .001$						

The prediction model contained two of the three predictors and was reached in two steps with no variables removed. The model was statistically significant, $F(2, 80) = 15.83, p < .001$, and accounted for 26% of the variance of clinical practice satisfaction ($R^2 = .28$, Adjusted $R^2 = .26$).

Coefficients for the two variables were as follows: clinical competence $\beta = .35, p = .001$; satisfaction in major $\beta = .28, p = .007$ (Table 5).

4. Discussion

This study investigated satisfaction in major, clinical competency, and clinical practice satisfaction among Korean nursing students. Only 12 students were male out of 83 nursing students, reflecting the fact that nursing is still a predominantly female occupation in South Korea. However, the number of male students is increasing due to job security[34]. This study founded that 41.0% of the participants choose the nursing major because of employment accessibility. Additionally, 33.7% of nursing students were affected by their aptitude and interests in choosing their major. These results supported the understanding that the greatest

priority in choosing a major among nursing students was job security. The great influence of job security on nursing career choice could be increased due to the high level of youth unemployment in Korea[35] and in European countries[36].

In this study, satisfaction in major showed a similar level (mean = 3.90) as measured on a 5-point scale, compare to other studies (mean = 3.91)[29]. Clinical competency showed a lower level (mean = 3.36) as measured on a 5-point scale than Park & Han's study (mean = 3.55)[27]. A previous study included 36.7% senior students out of all participants, and they had 4 terms of clinical experience[27]. However, this study only included participants with one term of clinical experience. Clinical competency was closely related to clinical experience, which is an important outcome indicator in nursing education[28]. If our study had included students with clinical experience of more than 3 terms, it would have had similar results to those of previous study. Clinical practice satisfaction showed lower or higher levels than those of other studies [27,37,38]. This result can be depended upon research participants and education strategy in nursing. Therefore, repetitive study should be conducted to investigate clinical practice satisfaction in nursing students.

There was significant difference in satisfaction in major by age. This study is consistent with the results of previous studies[29,39], reporting that older students with personal or career aspiration showed higher satisfaction for their major in choosing to study nursing. However, there were no significant differences in clinical competence and clinical practice satisfaction by demographic characteristics. In previous study, clinical competency differed by health status and interpersonal relation. Further, clinical practice satisfaction differed by clinical experience, health status, and interpersonal relationships[19]. Our study excluded participants' health status and interpersonal relation in demographic variables. Future research should explore how clinical competency or clinical

practice satisfaction is related to factors including health-related or personal relationship variables.

In this study, higher scores in satisfaction in major and clinical competence corresponded with increased clinical practice satisfaction. Higher clinical competence scores also appeared to be related to greater clinical practice satisfaction. These findings reflect those of previous studies in which participants showing more satisfaction in the nursing major were found to demonstrate better performance in and lower stress, those with higher levels of academic achievement had higher images of the nursing profession[39-41].

Most nursing students experience an increased level of stress during their clinical practice. Experience of stress may be a factor in the increasing dropout from the nursing programmes[42]. Stress is also problematic in relation to students' development of professional competence. Thus, stress during undergraduate education may have an effect on the future working life of the nurse, in the form of psychological impairment and lack of competence, and thereby have an effect on the quality of care[43]. Therefore, nursing teachers need to be encouraged to resolve the negative feeling nursing students have in their setting. To improve clinical practice satisfaction of nursing student, clinical adaptation program is developed. Such an program might be to create a healthy and supportive clinical environment for nursing students by communicating learning expectations with the clinical instructors.

Perry[44] reported that enjoying/loving nursing can influence job satisfaction in nursing, and this was expressed by studying the major or doing their work well. Nursing teachers need to be encouraged to emphasize the aspiration nursing students have in their setting. In general, clinical practicum is the best setting for nursing students to integrate the knowledge they gained from curricular content to demonstrate their clinical judgment, competence, and clinical performance[45]. Many nursing students were more satisfied with clinical practice than with the theoretical part of nursing program[8]. Clinical instructors have an

important role to play in helping to reduce the theory - practice gap between what is learned in university and what actually happens during clinical practice[44]. Instructors need to identify the methods by which students can integrate theory and practice so that they are able to recognize the theoretical frameworks that underpin their nursing practice[46].

This study found that the factors influencing clinical practice satisfaction among Korean nursing students were clinical competence and satisfaction in major, which together explained 26% of the total variance. The results reflected those of previous research, showing that career satisfaction influenced higher recruitment and retention of nursing students[4] and that students who perform their nursing skills well in clinical settings have high practice satisfaction[28].

Career satisfaction include increased perceived self-efficacy and self-determination that may, ultimately, be of benefit for individuals seeking to adapt to a changing world[47]. Therefore, it is crucial to provide a nursing adaptation program to Korean nursing students to improve clinical practice satisfaction. An adaptation program including information on new nursing strategies might serve as a method of coping, thereby increasing interests and facilitating clinical confidence of Korean nursing students. However, this study differed from other previous studies that indicated that the variables influencing clinical practice satisfaction were number of supporting people and team satisfaction[41], and task orientation and individualization[48]. Clinical faculty can do more to enhance task orientation by planning specific assignments that meet clinical objectives and providing students with detailed instructions on how to organized patient care[48]. Future research clarifying the role of these factors is necessary.

This study had several limitations. First, the generalizability of our results to all nursing students is limited due to the limited number of male nursing students in our study. A convenience sample studying in one private university may not have been an adequate representation of the target population as a

whole. A survey of Korean nursing students across the other province would be beneficial in order to be able to generalize the results of this study. Additionally, this study did not include all the relevant variables of clinical practice satisfaction, such as self-esteem, copying style, self-leadership, and critical thinking. Nonetheless, by examining the relationship between satisfaction in major, clinical competency, and clinical practice satisfaction in Korean nursing students, this study has provided preliminary data that may be used to encourage clinical practice satisfaction and improve clinical competency among Korean nursing students. The nursing implications for this study should be included in the development of a clinical adaptation program based on an individual's competency style to increase satisfaction in the nursing major and clinical practice among Korean nursing students.

5. Conclusion

This study attempted to investigate the level of Korean nursing students' clinical practice satisfaction and related factors. Satisfaction in major and clinical competency were identified as factors predicting clinical practice satisfaction. Clinical nursing practice is the core of the nursing education component in nursing schools. Nursing schools in Korea should consider some changes in clinical practice content in order to improve students' satisfaction with clinical practice. To improve satisfaction in major and clinical competence among Korean nursing students, it will be necessary to provide nursing students with clinical adaptation programs and preceptor education. Such programs should be tailored to the level of clinical skill of nursing students. Nursing educators also should assess first why students choose nursing and what they want to study in theory and practice.

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