Factors Influencing the State Anxiety of Nursing Students before Initial Clinical Experience

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Abstract

Objectives: The purpose of this study was to identify the level of state anxiety among the nursing students before their initial clinical experience and also to examine factors that influenced on their level of anxiety. **Methods/Statistical Analysis**: In order to achieve the purpose of this study, a survey has been conducted on freshmen students who attended three different nursing colleges from November 24th to December 5th, 2014. An analysis has also been implemented by using data collected from 207 students. Multiple regressions were utilized for the data analysis by using SPSS WIN 18.0 program. **Findings**: As for variables that influenced on the level of anxiety among nursing freshmen students before their initial clinical experience, factors including satisfaction on major (p<.001), satisfaction on campus practice (p=.021), trait-anxiety (p<.001), competency of core nursing skill (p<.001), self-efficacy (p<.001) turned out to be significant. Before their initial clinical experience of nursing students, variables of Trait-anxiety (β=.366, p<.001), self-efficacy (β=-.173, p=.017), and major satisfaction (β=.135, p<.047) explained the level of anxiety. In addition, the explanation power of these variables turned out to be 30.8%. **Improvements/Applications**: What is required to relieve anxiety before initial clinical experience among nursing students in the future includes self-efficacy enhancing programs, major satisfaction, and train-anxiety relief.

Keywords: Competency of Core Nursing Skill, Nursing Students, Self-Efficacy, The State Anxiety before Initial Clinical Experience, Trait-anxiety

1. Introduction

Education for professional nurses serves as a crucial role in nursing science, in which clinical practice based on theoretical knowledge is now increasingly emphasized that can be applied to a clinical setting [1]. Practical training that cultivates clinical competency in nursing education is an indispensable, compulsory course to bring up competent nurses. The clinical curriculum in nursing aims to enable students to directly experience a process that applies a nursing course to patients to attend, and what's

most emphasized in the process is exact clinical decision-making abilities, critical thinking, and obtaining clinical competence[2,3].

On one hand, clinical practice provides a positive change on nursing students through clinical practice. Such a positive change includes a better understanding of human being, solid identity of nursing, a sense of achievement, and maturity. On the other hand, there are negative states that nursing students experience during clinical practice. Such negative states include stress, tension, fear, anxiety, fatigue, and anger from a disparity

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between theory and practice, non-educational setting in practice, a lack of experience in an interpersonal relationship, nursing practice routines, and insufficient expertise and confidence[4].

In[5] classified clinical practice-related stress factors into the following factors: volunteers in practice, clinical setting, practice instruction, and student preparation on practice. Namely, stress factors are classified into a factor 'volunteers in practice' who are stressed out arising from communication conflict among, and evaluation on them, a factor 'clinical setting' caused by shift work, change in clinical training places, and environment of practical training institutions, a factor 'practice instruction' caused by unclear guidelines for practice instruction, and a factor 'student preparation on practice' caused by preparation for assigned work and nursing skill. Further,[6] reported that 'practicum burden' is the highest stress factor in that students should hold overburdened work together with preparing reports during clinical practice.

Anxiety is an important response appearing in a stress situation, arousing high frequency of anxiety caused by a stress factor, a situation of clinical practice. According to preceding research, an initial clinical practice causes the highest level of stress and anxiety.

Constraint factor of nursing performance includes psychological adjustment disorder as well as anxiety experienced by nursing students from their initial clinical practices. This prevents them from appropriately reacting with stressful situations[7–9]. Major variables that affect clinical practice reported in preceding research demonstrate that a high level of anxiety was found among freshmen nursing students in initial clinical practice. This was caused by fear, lack of knowledge, technique, and communication skills between nurses and doctors as well as unfamiliarity with hospital setting[10–12]. According to[13], conferences, classes and practices, and satisfaction of clinical practice are of factors representing the level of anxiety, while clinical practice stress indicates a statistically significant difference.

In [14] reported that nursing students perceived anxiety if they would make a mistake in clinical practice due to a lack of expertise and technique, and those who felt burdened by professors' evaluation and did not have a good physical health and a good interpersonal relationship felt high levels of anxiety. If nursing educators can exactly identify circumstances that cause anxiety and control them in advance, the anxiety of students will be reduced[10].

Therefore, nursing educators need to identify problems caused before and during clinical practice by examining the conditions on anxiety and stress in practicing environment and also find alternatives to reduce the level of anxiety and stress factors. Many of the researches have been conducted dealing with stress, anxiety, and fatigue of nursing students in clinical practice[14], relationship among stress, coping strategies, and self-esteem in Nursing Students Taking Clinical Experience[15,16], and also the one among stress, coping strategies, and self-esteem in Nursing Students Taking Clinical Experience[6,15]. However, there have not been any of the researches in dealing with trait-anxiety, self-core nursing competencies on the state anxiety prior to clinical practice, or self-efficacy in terms of their effects on freshmen students.

Hence, this study is intended to identify the state anxiety among nursing students in regard of practice before clinical practice and to examine factors that affect their anxiety.

2. Methodology

2.1 Design

As for the research design, this study is of a descriptive research aiming to seek for plans to identify the factors that affect the state anxiety among nursing students before their initial clinical experience by utilizing self-report questionnaires. This way, nursing students are able to adjust in and also be immersed in clinical practice.

2.2 Participants and Data Collection Methods

This study has been conducted on freshmen nursing students without an experience of clinical practice who completed fundamental nursing and core basic nursing skills as well as completed the Nightingale pledge. For this, survey has been conducted on nursing students attending three different nursing colleges from October to December, 2014. Total 221 students participated on the survey after understanding the purpose of the study and agreeing with the survey. Total 207 copies of questionnaires were used for the final analysis after excluding copies with unreliable answers. Researchers have explained the purpose of the study in details to participants and received

an agreement from them while providing a small gift in exchange for participation.

To determine a sample of the participants, the G*Power 3.1.4 program was used, and 138 participants were required for the minimum sample size when effect size required for regression analysis is .15, a level of significance ⃞=.05, Powerβ=95%, and the number of predictors is 5. Based on this, the copies of questionnaire were distributed to 223 students, and out of the collected data, a total of 207 data were used for final analysis except for those insincerely answered.

2.3 Instruments

2.3.1 The State Anxiety before Initial Clinical experience

The Korean Version of the State-Trait Anxiety Inventory (STAI-S)[17] developed by[18] was used to measure nursing students' state anxiety before initial clinical experience. This instrument consisted of a total of 20 questions on a 4-point scale, which is a tool that distinguishes clinical anxiety from psychiatric anxiety disorders. The positive question items were reverse coded, and high scores of them were manipulated into high levels of anxiety. The reliability of Kim's study[17] and this study was 86 and 85, respectively.

2.3.2 Trait-anxiety

The Korean Version of the Trait Anxiety Inventory (STAI-T)[17] developed by Spielberger[18] was used to measure trait-anxiety of nursing students. The scale consisted of 20 questions on a 4-point scale, and the positive question items were reverse coded, and high scores of them were manipulated into high levels of anxiety. The reliability of study[17] and this study was .86 and .81, respectively.

2.3.3 Competency of Core Nursing Skill

Competency of Core Nursing Skill of nursing students was assessed with 5-point scale questions converted from 20 questions of Competency of Core nursing skill presented by Korean Accreditation Board of Nursing Education[19]. Higher scores of them were manipulated into higher levels of Competency of Core nursing skill. The reliability of this study was .90.

2.3.4 Self-efficacy

Self-efficacy of nursing students was assessed with a Korean questionnaire[20] adopted from the Self-Efficacy Scale (SES) create[21] based on the concept of Bandura's self-efficacy theory. The questionnaire consisted of 23 questions on a 5-point scale, and the negative question items were reverse coded, and higher total scores of them were manipulated into higher levels of self-efficacy. The reliability at development time, Korean questionnaire[20] intended for university students, and this study was .86, .86, and .87, respectively.

2.3.5 Academic Achievement

Academic achievement of nursing students was assessed with responses (4.0 or above, 3.0 to less than 4.0, 2.0 to less than 3.0, and 2.0 or below) to the question "how was your last GPA?"

2.4. Data Analysis

The data used for this study were used for the following analysis where SPSS 18 (PASW Statistics 18) was used.

1. Frequency analysis was conducted to measure the general characteristics of nursing students, Trait-anxiety, Competency of Core nursing skill, Self-Efficacy, and their state anxiety before initial clinical experience.
2. A t-test and ANOVA were conducted for analysis on the mean difference of the state anxiety before initial clinical experience according to Trait-anxiety, Competency of Core nursing skill, and Self-Efficacy of nursing students' general characteristics, and Scheffe test was conducted for a post hoc test.
3. Multiple regression analysis was conducted to identify variables influencing their state anxiety before initial clinical experience of nursing students.

3. Results

1. The state anxiety before initial clinical experience according to general characteristics

The state anxiety before initial clinical experience according to general characteristics is shown as in Table 1. Out of the study population, female students accounted for 91.8% (190 participants), and the state anxiety related

to clinical practice according to gender did not show a statistically significant difference (t=-1.935, p=.067).

The mean age of the study population was 21.71 years, and the age distribution of them under 20 and in 20-29 was 56.6% (116 participants) and 36.3% (73 participants), respectively. The state anxiety related to clinical practice according to age did not show a statistically significant difference (F=2.193, p=.090).

Out of the domestic economic state of the study population, 'Average' accounted for the highest proportion, 75.4% (156 participants), and the state anxiety related to clinical practice according to economic state did not show a statistically significant difference (F=1.202, p=.303).

The study population with religion and no religion accounted for 45.4% (94 participants) and 54.6% (113 participants), respectively, and the state anxiety related to clinical practice according to religion did not show a statistically significant difference (t=-1.334, p=.184).

2. The state anxiety before initial clinical experience according to major variables

The state anxiety before initial clinical experience according to major variables of the study population is shown in Table 2. Out of the GPA of the study population, 3.0 to less than 4.0 accounted for the largest proportion, 56.0% (116 participants), followed by 2.0 less than 3.0 accounting for 32.9% (68 participants). The state anxiety related to clinical practice according to academic achievement did not show a statistically significant difference (F=1.292, p=.278).

Out of the major satisfaction of the study population, 'Average' accounted for the largest proportion, 52.2% (108 participants), followed by 'Satisfactory' accounting for 44.9% (93 participants). The state anxiety related to clinical practice according to major satisfaction showed a statistically significant difference (F=11.624, p<.001), indicating that the less satisfied students were with major, the higher clinical practice-related anxiety they had.

Out of the satisfaction of campus practice of the study population, 'Average' accounted for the largest proportion, 55.1% (114 participants), followed by 'Satisfactory' accounting for 38.6% (80 participants). The state anxiety related to clinical practice according to satisfaction of campus practice showed a statistically significant difference (F=3.921, p=.021), indicating that the students not satisfied with campus practice showed higher clinical practice-related anxiety, compared to those satisfied or neutral.

Out of the study population, students who had high levels of trait-anxiety accounted for 50.7% (105 participants), whereas those who had low levels of it accounted for 49.3% (102 participants). The clinical practice-related state anxiety according to trait-anxiety showed a statistically significant difference (t=-6.269, p=<.001), indicating that the students with high levels of trait-anxiety showed higher clinical practice-related state anxiety, compared to those with low levels of trait-anxiety.

Out of the study population, students who had high levels of Competency of Core nursing skill accounted for 54.6% (113 participants), whereas those who had low lev-

Table 1. The state anxiety of nursing students before initial clinical experience according to the general characteristics   (N=207)

Variable		n	%	Mean	SD	SE	t/F	p
Gender	Male	17	8.2	46.24	10.32	2.51	-1.935	.067
	Female	190	91.8	51.27	9.08	.65		
Age	<20	116	56.0	51.54	8.84	.82	2.193	.090
	20-29	73	35.3	50.95	9.83	1.15		
	30-39	10	4.8	48.00	6.79	2.14		
	40≤	8	3.9	43.62	10.31	3.65		
	Mean±SD : 21.71±6.31 , Range : 18~47							
Economic state	High	6	2.9	46.00	7.04	2.87	1.202	.303
	Average	456	75.4	50.71	9.36	.74		
	Low	45	21.7	52.02	9.11	1.35		
Religion	Yes	94	45.4	49.94	7.51	.77	-1.334	.184
	No	113	54.6	51.61	10.47	.98		

els of it accounted for 45.4% (94 participants). The clinical practice-related state anxiety according to Competency of Core nursing skill showed a statistically significant difference (t=3.532, p=<.001), indicating that the students with low levels of Competency of Core nursing skill showed higher clinical-related anxiety, compared to those with high levels of Competency of Core nursing skill.

Out of the study population, students who had high levels of self-efficacy accounted for 50.2% (104 partici-

pants), whereas those who had low levels of self-efficacy accounted for 49.8% (103 participants). The clinical practice-related state anxiety according to self-efficacy showed a statistically significant difference (t=6.051, p=<.001), indicating that the students with low levels of self-efficacy showed higher clinical-practice anxiety, compared to those with high levels of self-efficacy.

3. Factors influencing their state anxiety before initial clinical experience

Table 2. The state anxiety of nursing students before initial clinical experience according to the major variables (N=207)

Variable		n	%	Mean	SD	SD	t/F	p	Sheffe test
Academic achievement	4.0≤ [a]	16	7.7	51.06	5.13	1.28	1.292	.278	
	3.0~3.99 [b]	116	56.0	49.80	9.14	.84			
	2.0~2.99 [c]	68	32.9	52.57	10.11	1.22			
	2.0≥ [d]	7	3.4	51.28	8.95	3.38			
Satisfaction of major	satisfactory [a]	93	44.9	48.11	9.02	.93	11.624	<.001	a<b<c
	average [b]	108	52.2	52.58	8.63	.83			
	poor [c]	6	2.9	62.33	9.17	3.74			
Satisfaction of campus practice	satisfactory [a]	80	38.6	48.87	9.26	1.03	3.921	.021	a, b<c
	average [b]	114	55.1	51.75	9.23	.86			
	poor [c]	13	6.3	55.23	7.17	1.99			
Trait -anxiety	high group	105	50.7	54.51	8.06	.78	-6.269	<.001	
	low group	102	49.3	47.09	8.94	.88			
	Mean±SD : 47.47±8.31 , Range : 29~74								
Competency of core nursing skill	high group	113	54.6	48.84	9.17	.86	3.532	<.001	
	low group	94	45.4	53.28	8.82	.91			
	Mean±SD : 64.34±8.74 , Range : 41~96								
Self-efficacy	high group	104	50.2	47.27	8.70	.85	6.051	<.001	
	low group	103	49.8	54.47	8.40	.82			
	Mean±SD : 77.49±12.41 , Range : 44~111								

Table 3. Influencing factors on the state anxiety of nursing students before initial clinical experience   (N=207)

Variables	B	S.E	β	t	p	Tolerance limit
(Constant)	42.000	8.874		4.733	<.001	
Satisfaction of major	2.273	1.189	.135	1.912	.047	.674
Satisfaction of campus practice	.025	1.029	.002	.024	.981	.787
Trait-anxiety	.408	.077	.366	5.308	<.001	.708
Competency of core nursing skill	-.104	.069	-.098	-1.500	.135	.787
Self-efficacy	-.129	.054	-.173	.2.400	.017	.647
Statistics	R=.573, R2=.328, Adjusted R2=.308 F=16.259, p<.001 Durbin-Watson=2.149					

Table 3 demonstrates a multiple regression model analyzed with variables statistically significantly influencing nursing students' state anxiety before initial clinical experience. The variables influencing the anxiety of nursing students having clinical practice ahead included Trait-anxiety (β=.366, p<.001), Self-Efficacy(β=-.173, p=.017), and Satisfaction of Major (β=.135, p=.0471). The F value in the regression model showed a numerical value of 16.259, and the explanation power of the regression equation were 30.8%. As Durbin-Watson was 2.149, in proximity to 2, standard value, and not close to either 0 or 4, it is found that no correlation between residuals, which indicates that the regression model is not appropriate. Furthermore, as the model showed a numerical value, 0.1 or above, for a tolerance limit, there is nothing wrong with multicollinearity[22].

4. Discussion and Conclusion

This study aims to grasp the practice-related state anxiety of freshmen nursing students before initial clinical experience of them, and to investigate factors influencing their anxiety.

Results derived from investigating the relationship between state anxiety and general characteristics of study population, i.e. gender, age, economic state, and religion, show that they had no statistically significant difference between them. This was in accord with research results of [23] intended for students who completed with first year course of nursing. The anxiety level caused by religion was not in accord with research results of [13] that the anxiety level of students with no religion is higher compared to students with religion.

In this research, trait-anxiety, self-efficacy, and major satisfaction turned out to be the factors that affected the state anxiety of nursing students with an experience of clinical practice in advance[24,25]. The state anxiety related to clinical practice caused by academic achievement had no statistically significant difference. This was not supported from the research results[26,27] that students with high level of academic achievement represented significantly high self-efficacy, while the self-efficacy level and anxiety level of students who were satisfied with nursing major, lectures, and practice of basic nursing turned out to be significantly high and low, respectively.

The state anxiety related to clinical practice resulting from major satisfaction showed a statistically significant difference, indicating the less satisfied students were with major, the higher anxiety related to clinical practice was. This is consistent with the findings of study[28], but not consistent with the findings[14,27,29] that the anxiety level of students satisfied with nursing major was statistically significant higher compared to their counterparts.

Higher level of anxiety related to clinical practice was found among students who were not satisfied with campus compared to those who were satisfied or neutral with campus practice. This was supported by findings from Study[13]. There was a statistically significant difference in the state anxiety related to clinical practice caused by trait-anxiety. This shows that students with a high level of train-anxiety represented higher level of the state anxiety related to clinical practice than those with low level of train-anxiety.

The clinical practice-related state anxiety resulting from Competency of Core nursing skill showed a statistically significant difference, indicating that the students with low levels of Competency of Core nursing skill showed high levels of clinical practice-related anxiety, compared to their counterparts. In study[30], self-efficacy showed a high explanation power in Competency of Core nursing skill, which indicates that confidence with which students can successfully perform behavior required to obtain desirable results, affects improving Competency of Core nursing skill, and reducing their anxiety.

The state anxiety related to clinical practice according to self-efficacy showed a statistically significant difference, and students with low levels of self-efficacy showed higher anxiety related to clinical practice, compared to their counterparts. This was consistent with the findings of research[6,15] that report that the higher self-efficacy students had, the less stressful they were in clinical practice.

In[10] reported that without support of professors, the anxiety of students would be higher, and their learning abilities would be lower. In[31] reported that it is not desirable to frequently change hospital rooms during practical training because students can feel less anxiety from the setting they make as time goes by. As there are individual differences in anxiety and it has changing nature depending on outside environment and time[27], professors supervising students' practice operation are required to control frequent changes in clinical training places, proactively support students, and plan and help systematic practice so that students can have confidence in clinical practice.

Further, methods of practice orientation need to be changed. In the findings of study[32] investigating students who had a chance to experience contents related to first clinical training places (i.e. practice training-related knowledge, reverse capacity calculation, chief nurses' virtual orientation, nursing cases, and nursing courses) in advance before practice by identifying a part that students perceive difficult and afraid in clinical practice, orientation using e-learning improves students in terms of adapting to clinical practice, communication skill, and scores of clinical practice ability. Further, the findings of study[33] using self-growing program demonstrate it had the effect reducing the state anxiety before clinical practice in that the experimental group had a low anxiety score as a result of the post-test.

In summary, it is required to find a way to apply e-learning, detailed practice orientation in the use of various multimedia, and intervention program to reduce the level of anxiety before initial clinical experience. This way, students who participate in clinical practice in advance are able to improve their adaptability to them and reduce their anxiety. Furthermore, the development and application of anxiety prevention, lower body training, and sight- and oral health-related programs are required.

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