Psychological Factors Influencing Self-directed Learning Ability of 3rd Year Nursing Students at a University

Kyungmi Woo[1], Young-Ju Jee[2], Hyun Kyoung Kang[3]

[1]Associate Professor, College of Nursing, Dongwon Institute of Science and Technology, Korea

[2]Associate Professor, Department of Nursing, Kyungnam University, Korea

[3]Ph.D. Candidate in nursing, Dong-Eui University, Korea

[1]wgm9637@dist.ac.kr, [2]jeeyoungju@kyungnam.ac.kr and [3]kang9706031@hanmail.net

ABSTRACT

This descriptive research study aims to identify the influencing factors of self-directed learning ability in 3rd year nursing students enrolled in a nursing college. The subjects were 133 3rd year students from one nursing college located in K-do. The data collection period was from August 29 to September 22, 2022, and the collected data were analyzed using the SPSS WIN 18.0 program. The general characteristics and the degree of self-directed learning ability, academic resilience, academic self-efficacy, and critical thinking disposition were analyzed using descriptive statistics, while the correlations among academic resilience, academic self-efficacy, critical thinking disposition and self-directed learning ability were analyzed using Pearson's correlation coefficient, and the influencing factors of self-directed learning ability were analyzed using multiple regression. The results showed that 69.5% of self-directed learning ability was explained by academic resilience, academic self-efficacy, and critical thinking disposition. For the growth of nursing students as nurses, a key workforce in the rapidly changing health care environment, a continuous application of various intra- and extra-curricular programs that improve critical thinking disposition, academic resilience, and academic self-efficacy is recommended.

Keywords: Self-directed Learning Ability, Academic Resiliency, Academic Self-efficacy, Critical Thinking Disposition

1. INTRODUCTION

Since today's rapidly changing medical environment has become very complex and diverse, the requirements for nurses include the ability to efficiently cope with rapid changes in the medical environment and perform various nursing tasks [1].

In the 21st century where societies are already knowledge-based, the amount of information is exploding along with the development of cutting-edge technology, and the content of information is also rapidly changing, and the ability to acquire knowledge and information is emphasized.

College students are in the first stage to advance as future professionals and nursing students enter the department of nursing after deciding on a career, internalize the goals and values of the department during the undergraduate course, and form attitudes as professionals.

In addition, the nursing profession requires a lot of knowledge and skills, the ability to actively cope with rapid changes in the occupational world to perform the job as a professional, and the ability to cope with these changes throughout life.

Nursing students' awareness of their major and occupation changes as they complete major courses during the process of studying to become a nurse [2-3]. Most of the curriculum of the 1st year of the Department of Nursing is liberal arts [4].

Although some basic subjects and classroom practice are included in the curriculum of the 2nd year nursing students, the awareness of their major is not yet serious. Major subjects and clinical practice occupying most of the 3rd year curriculum establish their awareness of their major [5], making that period an important turning point.

Since the learning ability of nursing students during this period has a significant impact even on the nurse role after graduation, this period is the most efficient time for which diagnosis and intervention are implemented.

Nurturing nurses who meet the rapidly changing needs of the times requires nurses' self-directed learning about new information on the medical field, changing trends, treatment techniques, medical techniques, and scientific and professional knowledge [1].

These, original, flexible, critical and creative thinking skills, the ability to respond to change in active and self-directed ways, and the ability to create change are unlikely to be acquired through heteronomous and dependent learning but require self-directed learning in which one explores and solves problems [6].

The self-directed learning ability is one that allows the learner in a learning situation, to lead and manage the process of planning, execution, and evaluation of learning through interaction with learning assistants or by themselves [7]. This concept even includes responsibility for maintaining continuity after initiating behavior [8], and is the most essential ability that is required to be a successful learner in a rapidly changing information society [7].

Therefore, nursing students who need to perform knowledge-based nursing using the integrated ability of knowledge, skills, and attitudes need training to solve problems in a self-directed way by actively participating in the learning process.

In nursing education, self-directed learning ability is the ability and attitude to solve given tasks on their own so that students can become lifelong learners. Especially, after graduation, nursing students must properly perform what they have learned at school in the changing clinical field.

In addition, it is necessary to improve self-directed learning ability for learning because it is necessary to grow as an expert.

The self-directed learning ability essentially requires academic resilience, a complex set of qualities and competencies for self-overcoming academic stress and problems, flexible coping with problem situations, and successful direction setting [9][41].

Academic resilience, a relatively recent psychological concept, means high academic achievement even in adverse circumstances, high motivation and interest in school life, and the ability to faithfully follow school norms. In other words, it means the ability to effectively deal with failure, stress, and pressure of study.

Academic resilience includes not only high academic achievement or grades, but also a combination of qualities and abilities that are positively correlated with success in school and subsequent career achievement.

On the other hand, academic self-efficacy is the belief in one's ability to organize and practice to perform tasks in an academic setting [10], an important variable that enables learners to acquire and implement new knowledge and skills in new situations. It is also a learning motivation that induces learners to complete tasks with patience despite difficulties in learning situations and is an important factor linking learners' knowledge and performance [11].

Those with higher academic self-efficacy feel less anxiety about learning tasks and put more effort to complete given tasks successfully [10]. Since they use effective learning strategies in the process [12], an increase in academic self-efficacy was found to have a significant correlation with an increase in self-directed learning ability [13-14].

With the demand for high-quality nursing performances in the medical field increases that solve problems according to the situation based on the ability to quickly and accurately judge [15], the importance of critical thinking that enables correct execution of nursing practice based on quick and accurate judgment as well as synthesis and reasoning of information has been emphasized.

The critical thinking disposition refers to personal inclinations and habits that make self-regulating judgments for the purpose of problem-solving and decision making in personal or professional work [16].

This deposition is particularly significant for the nursing profession, which requires independent and critical judgment to solve problems.

As such, the curricula of nursing schools also include content to strengthen knowledge, skills, and attitudes about critical thinking and it has already been proven that a stronger critical thinking disposition leads to higher self-directed learning ability [17].

The purpose of this study was, therefore, to identify the influencing factors of self-directed learning ability in 3rd year nursing students by measuring the level of academic resilience, critical thinking disposition, academic self-efficacy, and self-directed learning ability and identifying their correlations, and to present the results to be used basic data for the development of programs and educational methods required in the rapidly changing nursing education field.

The specific purposes of this study are as follows:

· To measure the level of general characteristics in the subjects.

· To measure the level of   self-directed learning ability,   academic resiliency, academic self-efficacy, and critical thinking disposition in the subjects.

· Investigate the correlation between the subject's academic resiliency, critical thinking disposition, and self-directed learning ability.

· Identify the factors affecting the subject's self-directed learning ability.

2. METHOD

1) Design
This study is a descriptive study, and the conceptual framework is presented in Figure 1.
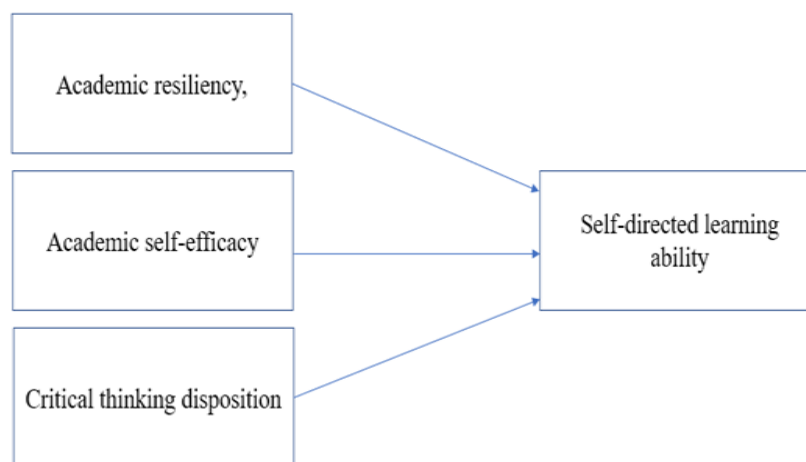

Figure 1: Concept framework

2) Subjects
The data was collected from 3rd year nursing college students located in K-do who voluntarily participated after an author explained the purpose of the study.

The minimum number of samples was calculated in the multiple regression analysis using the G*Power 3.1.2 program under the conditions of the significance level.05, effect size .15, power .95, and three predictive factors was 119 and, considering the dropout rate of 10%, 139 questionnaires were distributed.

After excluding six insufficient responses, data from 133 subjects was analyzed.

3) INSTRUMENTS

(1) Academic Resiliency
This study adopted a 29-item tool developed by Kim [9], and its composition ranged from 1 (not at all) to 5 (very much).

A higher score indicates a higher level of academic resilience. Cronbach's α was .72 in the developer's report and .91 in this study.

(2) Academic Self-Efficacy

This study used a seven-item tool developed by Park [18], and was composed of 1 (not at all) to 5 (very much).

A higher score indicates a higher level of academic self-efficacy. Cronbach's α was .893 in the developer's report and .891 in this study.

(3) Critical Thinking Disposition

This study used a 27-item tool developed by Yoon [19], and was composed of 1 (not at all) to 5 (very much).

A higher score indicates a higher level of critical thinking disposition.

No. 20 and 21 items were reverse-coded. Cronbach's α was .843 in Yoon [10] and .901 in this study.

(4) Self-directed Learning Ability

A self-directed learning ability instrument for college students/adults from the life competency instrument developed by the Korea Educational Development Institute was used [20][40].

It consisted of 45 items to measure three competency factors and eight sub-factors.

Learning planning ability element (n=20; learning needs diagnosis, learning goal setting, learning resources identification).

Learning execution ability element (n=15; basic self-management ability, learning strategy selection, continuity of learning execution).

Learning evaluation ability element (n=10; attribution of result to effort, self-reflection).

Items were responded to using a scale of 1 (very rarely) to 5 (very frequently).

A higher score indicates a higher level of self-directed learning ability.

No. 3, 4, 25, 32, 34, 35, 37, and 40 were reverse-coded. Cronbach's α was .94 in the developer's report and .937 in this study.

(5) The general characteristics of subjects included gender, age, primary motivation for admission, degree of satisfaction with department and major, and degree of adaptation to nursing department.

4) DATA COLLECTION & ANALYSIS

Considering the protection of the ethical aspects of the subjects, the researcher explained the background of the study in detail in the opening class of each group, and all participation was voluntary.

The questionnaire had no information about the identity of the subjects, and the subjects were was informed that no penalty would be imposed for refusal to participate or for their decision to drop out.

Since the research subjects are students taking classes, the researcher tried to remove the students' discomfort.

The questionnaire was uniformly distributed to students through student representatives.

Students who filled out the questionnaire placed it in a keyed box provided in the classroom.

Each day after work hours, the researcher retrieved the questionnaire from a box in the classroom.

The entire questionnaire was collected after the first promised 4 weeks had elapsed, and the researcher could not identify the student through the questionnaire.

After research analysis, the questionnaire will be stored in the researcher's laboratory for 2 years and will be shredded later.

Data collection was from August 29 to September 22, 2022, and the collected data were analyzed using the SPSS WIN 18.0 program.

(1) General characteristics were expressed using frequency, percentage, mean (M), and standard deviation (SD).

(2) The degree of self-directed learning ability, academic resilience, academic self-efficacy, and critical thinking disposition was expressed using M and SD.

(3) The correlations among academic resilience, academic self-efficacy, critical thinking disposition, and self-directed learning ability were analyzed using Pearson's correlation coefficient.

(4) Influencing factors of self-directed learning ability were analyzed using multiple regression.

3. RESULT

1) General Characteristics

Female students (n=110) comprised 82.6% of the total sample, while male students (n=23) comprised 17.3%. The mean age was 26.47 years old, and the highest age was 54 years old.

The most frequent motivation for admission was 'high employment rate after graduation' (n=52, 39.1%), and was followed by 'aptitude and hobby (n=36, 27.1%), 'recommendation of others (parents, teachers, etc.) (n=21, 15.8%), 'strong impression for the image of nurse' (n=12, 9.0%), 'consideration of entrance exam grades' (n=8, 6.0%), 'desire for socially volunteer job (e.g., overseas volunteering' (n=2, 1.5%), and 'others' (n=2, 1.5%).

The Mean score of Satisfaction with the nursing department was 2.241±0.83 out of five points.

The most frequent response was "satisfied" (n=58, 43.6%), "medium" (n=44, 33.1%), ''very satisfied" (n=25, 18.8%), "unsatisfied" (n=5, 3.8%), and one student (0.8%) chosen 'very dissatisfied'.

The mean score of Adaptation to the nursing department was 1.774±0.57 out of five points.

The options 'well' and 'very well' occupied 92.5% (n=123), 'very good' 30.1% (n=40), 'very bad' 0% (n=0), and the remaining (bad and very bad) 7.5% (n=10) (see Table 1).

Table 1: General Characteristics   (N=133)

Variable	Sub-categories	N (%)	mean±SD	Actual Range
Gender	Male	23(17.3)		
	Female	110(82.7)		
Ag			26.474±9.37	19-54
Motivation for admission	Consideration of entrance exam grades	8(6.0)		
	Aptitude and hobby	36(27.1)		
	Recommendation of others (parents, teachers, etc.)	21(15.8)		
	High employment rate after graduation	52(39.1)		
	Desire for socially volunteer job (e.g., overseas volunteering)	2(1.5)		
	Strong impression for the image of nurse	12(9.0)		
	Others	2(1.5)		
Satisfaction with major	Very satisfied	25(18.8)	2.241±0.83	
	Satisfied	58(43.6)		
	Medium	44(33.1)		
	Unsatisfied	5(3.8)		
	Very unsatisfied	1(0.8)		
Adaptation to nursing department	Very good	40(30.1)	1.774±0.57	
	Good	83(62.4)		
	Bad	10(7.5)		
	Very bad	0		

2) Characteristics of Variables Related to Self-directed Learning Ability

The mean score for academic resiliency was 115.323±13.98(Potential Range: 29-145, Actual Range: 79-145), and for academic self-efficacy was 27.053±4.68(Potential Range: 7-35, Actual Range: 17-35).

Critical thinking disposition was 103.135±12.51(Potential Range: 27-135, Actual Range: 72-135) and self-directed learning ability was 165.496±24.09(Potential Range: 45-225, Actual Range: 107-225) (see Table 2).

Table 2: Characteristics of Variables related to Self-directed Learning Ability   (N=133)

Variable	mean±SD	Potential Range	Actual Range
Academic Resiliency	115.323±13.98	29-145	79-145
Academic Self-efficacy	27.053±4.68	7-35	17-35
Critical Thinking Disposition	103.135±12.51	27-135	72-135
Self-directed Learning Ability	165.496±24.09	45-225	107-225

3) Correlation Among Self-Directed Learning Ability and Other Variables

The correlation coefficients of self-directed learning ability with academic resiliency, academic self-efficacy, and critical thinking disposition were r=.754(<.001), r=.644(<.001), and r=.742(<.001), respectively.

The correlation coefficients of academic resiliency with academic self-efficacy, and critical thinking disposition were r=.646(<.001) and r=.754(<.001) respectively.

The correlation coefficients of academic self-efficacy with critical thinking disposition were r=.644(<.001) (see Table 3).

Table 3: Correlation among Self-directed Learning Ability and other Variables   (N=133)

	Self-directed Learning Ability	Academic Resiliency	Academic Self-efficacy	Critical Thinking Disposition
	r(p)			
Self-directed Learning Ability	1			
Academic Resiliency	.754 (＜.001)	1		
Academic Self-efficacy	.644 (＜.001)	.646 (＜.001)	1	
Critical Thinking Disposition	.742 (＜.001)	.754 (＜.001)	.644 (＜.001)	1

4) Influencing Factors of Self-Directed Learning Ability

Before performing the multiple regression analysis, the equal variance test was performed through the residual chart to confirm whether the data were appropriate for the regression analysis.

The Durbin-Watson statistics performed to verify the independence of the residuals was 1.869, satisfying the independence assumption since it is close 2.

The variation inflation factor (VIF) to check the multicollinearity of independent variables was .472-.566, satisfying the assumption since it is 0.1-10.

The influencing factors of self-directed learning ability were critical thinking disposition (β=.401, p<.001), academic resilience (β=.389, p<.001), and academic self-efficacy (β=.173, p=.009), accounting for 69.5% of and the self-directed learning ability (see Table 4).

Table 4: Influencing Factors of Self-directed Learning Ability   (N=133)

	B	Beta	t	p
(Constant)	-15.493		-1.456	.148
Academic Resiliency	.671	.389	5.563	**＜.001**
Academic Self-efficacy	.889	.173	2.664	**.009**
Critical Thinking Disposition	.772	.401	6.269	**＜.001**
Adjusted R Square=.695, F=101.212, p ＜.001				

4. CONCLUSION & DISCUSSION

This study intended to provide basic data for the development of teaching-learning programs to improve self-directed learning ability by identifying the influencing factors of self-directed learning ability in 133 3rd year nursing students enrolled in a nursing college.

The mean age of the subjects was 26.474 years old, including a from 19 to 54 years-old student. This is probably proof that nursing students are at a good position to focus only on their studies since they have a clear career path and employment and that the number of transfer quotas for nursing departments is increasing due to the complex action of recognition of the reality of universalization of university education and lining up of universities in order [21-22].

Male students accounted for 17.3% of the subjects. This shows that the proportion of male students in the nursing department is increasing compared to the past, and reflects the reality that male students account for more than 20% of new nursing students as male students' avoidance of entering nursing school decreases due to job security [23]. Currently, with the increase in the number of nursing students, each university is increasing very much.

The most frequent motivation for admission is 'High employment rate after graduation', followed by 'Aptitude and hobby'.

However, as shown in the results of this study, there are an increasing number of students who choose a department expecting only a high employment rate and give up midway.

Therefore, it is important that college career guidance needs to be carefully conducted during the high school period.

The mean score for satisfaction with a major was 2.241, indicating a level above average. Choosing a major based on one's aptitude and interest is not only helpful for college life but also has a positive effect on the formation of values and attitudes toward one's own career after graduation [24-25].

Accordingly, it is important to explore one's aptitude and qualifications in middle and high school to select the right major, but in reality, many nursing students choose nursing based on the ease of employment, high school grades, and recommendation of others rather than their own aptitude and interest [26- 27].

Inconsistency between one's own unique characteristics, including interests, and majors not only lowers satisfaction with majors and reduces interest in learning, but also worsens the maladjustment to college life, and furthermore, has negative effects on adaptation to clinical environments after graduation [24].

The students themselves, parents, and schools, therefore, should involve in an empirical and in-depth exploration of students' major selection. In addition, major selection based on long-term concerns is considered a way to solve the problem of maladaptation to nursing and high nurse turnover after admission.

In this study on 3rd year nursing students, the mean score of academic resilience is 3.98 when converted into a five-point scale. Comparing the score in other studies applying this instrument, the mean score was 3.67 in Bae & Park [28] on 2nd year nursing students, and 3.77 in Roh [29] on 2nd and 3rd year nursing students.

However, contrary to expectations, the average score in 4th year students dropped sharply to 3.16 even after the biofeedback training intervention [30].

It is speculated that the academic resilience of nursing students rises until the 2nd and 3rd years, and then drops suddenly due to various stresses in the 4th year when they are required to prepare for employment and national exams while taking both theory classes and clinical practice.

This means that a plan should be developed to solidly improve the academic resilience of nursing students before they enter their fourth year.

Academic resilience is a variable that has a positive correlation with not only high academic achievement or grades, but also success in school and subsequent career achievement.

This is because the reduced academic resilience in the 4th year can predict negative results even when working as a nurse after graduation.

Kim et al. [31] reports that the active intervention of 'significant others' such as friends leads to the formation of a learner's positive self-concept and high academic achievement and by Hong [32] also reports that outside help and support are helpful in improving academic resiliency should be referred to.

Nursing educational institutions seeking to improve the academic resilience of nursing students, based on the results of this study, should develop and apply various learning strategies that enable mutual positive influence among nursing students who study together with the same goal as well as the utilization of internal and external resources of each student.

The mean score for academic self-efficacy was 27.053±4.68(3.86 out of 5), higher than the 3.57 reported for junior college students [33] and 3.21 reported before COVID-19 [34], which were measured with same the instrument, and lower than 4.11 measured with with another instrument by Lim [35].

Lim [35] explained that the difference in these scores is that nursing students in the post-COVID-19 era create a learning environment on their own in parallel with online and offline classes, and develop the ability to decide and judge the amount or content of learning on their own while proceeding with learning.

Although an exact comparison is limited due to differences in instruments, it was found that the experience of online and offline classes had a positive effect on academic self-efficacy, which is an important variable in acquiring knowledge and skills in a new situation.

The mean score of critical thinking disposition in this score was 103.035 (3.82 out of 5), which was higher than 3.38 in Kim & Kim [36] for 2nd year nursing students and 3.68 in Choi [17] for 3rd and 4th year nursing students. This is consistent with the result of Lee et al. [37][39] that 3rd year students have higher critical thinking dispositions than others.

It seems that it is necessary to develop and apply, rather than memorization-oriented learning, various educational methods that allow students to pose problems for themselves and practice systematic and logical thinking skills.

The strongest influence factor of self-directed learning ability of nursing students was found to be critical thinking disposition, and was followed by academic resilience and academic self-efficacy, accounting for self-directed learning ability to be as high as 69.5%.

In fact, nursing colleges devote much of their education to preparing for the national exam for nurses.

However, nursing education that is only focused on the results of the national examination cannot be sure of the safe and secure settlement of the future nursing world.

For the growth of nursing students as nurses, a key workforce in the rapidly changing healthcare environment, continuous application of various intra- and extra-curricular programs that improve critical thinking disposition, academic resilience, and academic self-efficacy is recommended.

It is further recommended to expand subjects to include all grades of nursing colleges nationwide, and to develop and research intervention programs that improve critical thinking disposition, academic resilience, and academic self-efficacy.

5. ACKNOWLEDGEMENTS

REFERENCE

[1] M. L. Savickas, L. Nota, J. Rossier, J. P. Dauwalder, M. E. Duarte, J. Guichard, S. Soresi, R. van Esbroeck and A. E. M. van Vianen, Life designing: A paradigm for career construction in the 21st century, Journal of vocational behavior., (2009), Vol.75, No.3, pp.239-250.

[2]   Torill Kloster , Magnhild Høie, Randi Skår, Nursing students' career preferences: a Norwegian study, Journal of advanced nursing., (2007), Vol.59, No.2, pp.155-162.

[3]   Bang, Kyung-Sook., Kim, Hyun Sook., Son,   Haeng-Mi., KANG, Jeong Hee., Ryu, Soo Jung., Kwon, Mikyung.,   AND Kim, Ji-Soo, Nursing Students' Awareness of Nursing and Future Career, The Journal of Korean Academic Society of Nursing Education., (2009), Vol.15, No.1, pp. 22-31.

[4]   Cho, In Young., The Relationship of Career Identity, Major Satisfaction and College Adaptation of Nursing Freshmen, Journal of Korea Academia-Industrial cooperation Society., (2014), Vol.15, No.5, pp. 2937-2945.

[5]   Yang, Young-Ok., Lee, Sun-ok.,The Relations of Self-Esteem, Major Satisfaction and Career Identity on the Nursing Students, Journal of The Korean Data Analysis Society., (2012). Vol.14, No.2, pp. 979-989.

[6]   Y.M. Kim, and Y.S. Lim, Structural Model of Democratic Parenting Style, Ego-resilience, Cell phone Dependency, Self-directed Learning, Studies on Korean Youth., (2012). Vol. 23, No. 2, pp. 273-299.

[7]   S. J. Lee, Y. K. Chang, H. N. Lee and K. Y. Park, A study on the development of life-skills: communication, problem solving, and self-directed learning. Seoul: Korean educational development institute, Dec (2003).

[8]   J. E. Jeong and C. Y. Jyung, The Causal Relationship of Undergraduate Students' Career Adaptability, Social Support, Self-Esteem and Self-Directed Learning. Journal of Agricultural Education and Human Resource Development. (2015), Vol.47, No.1, pp.79-96.

[9]   N. R. Kim, A Study on the Development and Validity of the Scale of Academic Resilience, Unpublished doctoral dissertation, Sookmyung Women's University, Seoul, Korea, 2008

[10]   A. Bandura, Self-efficacy: Toward a unifying theory of behavioral change, Psychological Review, (1997), Vol. 84, pp. 191-215.

[11] Y.H. Kim and Y.A. Kim, The Influence of Academic Self-efficacy, and Critical Thinking Disposition on Problem Solving Ability of Nursing Students, Journal of The Korea Academia-Industrial cooperation Society, (2016), Vol. 17, No. 9, pp. 589-598.

[12]   P.R. Pintrich, and E.V. De Groot, Motivational and Self-Regulated Learning Components of Classroom Academic Performance, Journal of Educational Psychology, (1990), Vol. 82, No. 1, pp. 33-40.

[13]   Song, So-Ra., and Kim, Young-Ju, Effect of a Self-Evaluation Method Using Video Recording on Competency in Nursing Skills, Self-Directed Learning Ability, and Academic Self-Efficacy, Journal of Korean Academy of Fundamentals of Nursing, **(2015),**   Vol.22, No.4 , pp.416 – 423.

[14]   Lee, Sunju., Kim, Jung Kyoung., Kim, wonjong.,The Effects of Self-Induced Learning Ability and Academic Self-Efficacy on Critical Thinking Propensity of Nursing College Students, Korean Association For Learner-Centered Curriculum And Instruction, (2020), Vol.20, No.14 , pp.1251 – 1265.

[15]   C.S. Park, and Y.J. Ko, Relationship between Self-Directed Learning Ability, Critical Thinking Disposition and Nursing Process Confidence of Nursing Students, Journal of the Korea Academia-Industrial cooperation Society, (2019), Vol. 20, No. 10, pp. 68-75.

[16]   H.S. Cho, A study on the Critical Thinking Disposition and Self-directed Learning Academic Achievement of Nursing Students, Journal of the Korean Society of Health Information and Health Statistics, (2007), Vol. 32, No. 2, pp. 57-72.

[17]   Choi, Eun-Young., Influence of Critical Thinking Disposition and Academic Self-Efficacy on Self-Directed Learning Ability of Nursing Students, The Journal of the Convergence on Culture Technology, (2021), Vol. 7, No. 4, pp.171-180.

[18] Park, Yoonhee., The Effect of Clinical Learning Environment on the Learning Performance among Nursing College Students: Focusing on the Mediating Effect of Self-directed Learning and the Moderated Mediating Effect of Academic Self-efficacy, Inje University, Pusan, Korea, 2020

[19] Yoon, J., Development of an instrument for the measurement of critical thinking disposition: In nursing. doctor's thesis. Catholic University, Seoul, Korea, 2004.

[20] S.J. Lee, Y.K. Jang, H.N. Lee, and K.Y. Park, A Study on Development of Measuring Tools for Life Capability: Focusing on Communication Ability, Problem Solving Ability, Self-Directed Learning Ability, Korea Educational Development Institute, (2003).

[21] PARK,HYOUNG-SOOK., Yun, Jungmi., Kim Young Mi., In Young Choi., Hwang, Jae Hyun., Critical Thinking, Self-Concept and Stress Adaptation of Transfer Nursing Students, Journal of Korean Academy of Fundamentals of Nursing, (2016), Vol.23, No.3, pp. 320-330.

[22] Eui-Young Cho, Jung Ae Kim, Ji-Young Kim, Hyun-Ji Kim, Eun-Soo Ra, Hye-Yeon Lee, The Factors Influencing Employment Stress of Nursing Students, The Journal of the Convergence on Culture Technology, (2016), Vol.2, No.1, pp. 35-43.

[23] Kyunghyang Newspaper. 2021. The ratio of male freshmen in nursing school exceeded 20% for the first time... "Reduced avoidance phenomenon, high evaluation of job stability" 2021.09.26.

[24] B. W. Seo, The effects of motivation for major choice of university students on vocational choice factors, The Journal of Employment and Career, (2013), Vol. 3, No. 2, pp. 65-81.

[25] D. Barron, E. West, R. Reeves, Tied to the job: affective and relational components of nurse retention, Journal of Health Services Research & Policy, (2007), Vol. 12, No. 1, pp. 46-51. DOI: http://dx.doi.org/10.1258/135581907780318419

[26] S. O. Choi, J. K. Park, S. H. Kim, Factors influencing the adaptation to the college life adaptation, The Journal of Korean Academic Society of Nursing Education, (2015), Vol. 21, No. 2, pp. 182-189. DOI: http://dx.doi.org/10.5977/jkasne.2015.21.2.182

[27] J. H. Choi, M. J. Park, Methodological triangulation method to evaluate adjustment to college life in associate nursing college students, The Korea Journal of Contents Association, (2013), Vol. 13, No. 7, pp. 339-349. DOI: http://dx.doi.org/10.5392/JKCA.2013.13.07.339

[28] Bae, Young Joo., Park, Sang Youn., Study on Predictors of Academic Resilience in Nursing Students, Journal of the Korea Academia-Industrial cooperation Society, (2014), Vol. 15, No. 3, pp. 1615-1622.

[29] Noh, Gie Ok., The Effects of Perfectionism and Academic Resilience on the Level of Students' Satisfaction with Nursing Major, The Journal of Korean Academic Society of Nursing Education, (2017), Vol. 23, No. 2, pp. 205-213.DOI: https://doi.org/10.5977/jkasne.2017.23.2.205

[30] Quan, Li-Hua., Kim, Sungjae., Effects of Biofeedback Training on Stress, Stress Response and Academic Resilience of Nursing Students, Perspectives in Nursing Science, (2018), Vol. 15, No. 2, pp. 107-114.

[31] G. J. Kim, K. H. Kim, K. S. Park, The Structural Analysis of Relations among Social Support, Career Decision Level and Academic Self-Efficacy Affecting Academic Achievement of Provincial College Student, Theory and practice of Education, (2012), Vol. 17, No. 2, pp. 1-25.

[32] E. S. Hong, Conceptual Understanding of Resilience and Instructional Suggestion, Korean Journal of Special Education, (2006), Vol. 41, No. 2, pp. 45-67.

[33] Kim Ji Young., Kim Eun Ji., Kim, Jungsub., The Mediation of Academic Self-Efficacy between Academic Stress and Adjustment to College, The Korean Journal of Thinking Development, (2018), Vol.14, No.1, pp. 53-73.

[34]   Juyeoun Kim., Kim Hyeon Ok., Lee Myung Ha, Academic Achievement of Nursing College Students according to Academic Self-efficacy: The Mediating Effect of Major Satisfaction, Child Health Nursing Research, (2019), Vol.25, No.2, pp. 205-213.

[35]   IM, Eun Ji., The Effects of Grit, Academic Self-Efficacy, and Self-Directed Learning Ability on Clinical Performance Ability of Nursing Students, Department of Nursing Graduate School Honam University Gwangju. Korea, 2022.

[36]   Y.H. Kim and Y.A. Kim, The Influence of Academic Self-efficacy, and Critical Thinking Disposition on Problem Solving Ability of Nursing Students," Journal of The Korea Academia-Industrial cooperation Society, (2016), Vol. 17, No. 9, pp. 589-598.

[37]   S.Y. Lee, S.Y. Jeon, and Y.Y. Kim, The Effects of Critical Thinking Disposition and Self-esteem to Self-leadership of Nursing Student, The Korean Journal of Health Service Management, (2016), Vol. 10, No. 1, pp. 155-165. http://dx.doi.org/10.12811/kshsm.2016.10.1.155

[38]   J.G. Kim, Change of Critical Thinking Disposition by Applying Learning Portfolio Completion," International Journal of Advanced Culture Technology, (2020), Vol. 8, No. 2, pp. 12-17. https://doi.org/10.17703/IJACT.2020.8.2.12

[39]   N. J. Je and M. Park. Effects of Bioethics Education on Biomedical Ethics Consciousness, Interpersonal Relationship Empathy and Social Empathy, Critical Thinking Tendency, and Moral Behavior. International Journal of Advanced Nursing Education and Research, vol.6, no.1, Apr. 2021, pp.1-8, doi:10.21742/IJANER.2021.6.1.01

[40]   O. Yee, J. Ha, and Y. Ahn. The Influences of Pair Discussion on Nursing Students' Learning Experience in Problem-Based Learning: A Qualitative Inquiry. International Journal of Advanced Nursing Education and Research, vol.3, no.1, May. 2018, pp.105-110, doi:10.21742/IJANER.2018.3.1.18

[41]   J. Lee and M. Gang. Impact of Academic Stress on Depression among Nursing Students: Testing for the Moderating Effect of Social Support. International Journal of Advanced Nursing Education and Research, vol.3, no.1, May. 2018, pp.99-104, doi:10.21742/IJANER.2018.3.1.17