

Effect of Exam Anxiety, Academic Stress and Alcohol Dependence on Academic Achievement of Nursing Students

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Abstract

Purpose: The purpose of this study is that the college age is an important transition period from youth to adulthood. Nursing students are unfamiliar with their field of study and need to adapt to a large amount of academic and practical training, so that they can have a better college life. An attempt was made to determine the effect of exam anxiety, academic stress, and alcohol dependence on the academic achievement of nursing students. **Research design, data, and methodology**: The subjects of the study were 130 students from all grades who agreed to participate in the study after expressing convenience among students attending the Department of Nursing at a university in Gyeongnam. The data collection period was from August 15 to September 15, 2023. It was about a month. The data investigation was conducted through a self-report survey. **Results**: Results showed that significant variables included exam anxiety, academic stress, alcohol dependency, parent relationships, peer relationships, and major satisfaction, explaining a total variance of 31.9%. Among these, the most influential factor was academic stress (β =-.352). **Conclusions**: This study identify factors influencing the academic achievement of nursing college students and hopes to contribute to formulating strategies for their growth and competence development.

Keywords: Nursng Student, Exam Anxiety, Academic Stress, Alcohol Dependence, Academic Achievement

JEL Classification Code : A22, I10, I21, I23

1. Introduction

The college years are a crucial transitional period from adolescence to adulthood, where individuals explore their career paths, establish their identity, and formulate lifelong plans (Moon & Park, 2007). Particularly for nursing students, the experience of a major field that differs significantly from high school curriculum leads to a sense of unfamiliarity. They reportedly face more stress compared to students in other departments due to the adaptation to numerous and diverse academic and practical challenges (Whang, 2006). Nursing students encounter various stresses during the completion of their education, including clinical practice, acquisition of skills, financial concerns in college life, interpersonal relationships, existing issues, and physical and mental health challenges. This stress is influenced by inadequate support and coping skills (Ratanasiripong, et al, 2012). Moreover, nursing students, especially those experiencing high levels of stress, tend to exhibit lower problem-focused coping abilities and clinical satisfaction, along with a higher correlation with depression (Park & Jang, 2010; Ratanasiripong, et al., 2012). Additionally, nursing students with higher levels of depression tend to experience more stress (Jimenez et al, 2010).

Anxiety is a negative emotional response that can manifest in the face of stressful or threatening situations. It represents vague discomfort when confronted with unfamiliar or role-related situations without clear targets and involves fearful thoughts without specificity. Anxiety can be broadly categorized into trait anxiety, explained as an inherent temperament, and state anxiety, a temporary condition felt in specific situations (Spielberger, 1980; Cho, et al., 2001). For most university students, exam anxiety related to exams represents a state of anxiety experienced during evaluations perceived as crucial. Exam anxiety is not limited to the actual exam period but extends to a psychological process that continues from the anticipation of an upcoming exam. While appropriate exam anxiety can help in preparing for exams, excessive anxiety adversely affects the learner's performance and has negative effects on academic achievement, leading to increased stress (Choi & Moon, 2004).

Academic achievement in university life refers to how successfully students acquire knowledge and skills within the course outcomes (Park et al., 2010). Factors influencing university students' academic achievement include university satisfaction, course satisfaction, and class attitudes (Shin et al., 2008). Academic achievement has been shown to impact students' confidence in academics and influence their career choices after graduation, closely related to self-directed learning abilities (Bae & Sung, 2016).

Academic stress in university refers to psychological

states of dissatisfaction such as tension, fear, burden, and depression related to studies and grades (Shin, 2016). If not appropriately prevented and effectively addressed, academic stress can lead not only to psychological disorders but also to behavioral disorders such as frustration, rebellion, poor academic performance, excessive drinking, headaches, hypertension, heart disease, cancer, and other physical illnesses (Han et al., 2007). Han et al. (2000) suggest that failure to timely resolve stress can negatively affect the formation of positive nursing and nursing professionalism and may hinder studying nursing and nursing performance (Yang et al., 2014).

Upon entering university, as the legal drinking age is reached, most students naturally encounter drinking culture. Influenced by seniors, clubs, and gatherings, students initiate drinking. Statistics on drinking among Korean university students explain this atmosphere. According to a survey on the drinking habits of university students, 23.6% of freshmen experience their first drinking in the first year, 60.4% drink once or twice a week, and 28.1% drink 3 to 5 times a month. Moreover, 23% of students engage in binge drinking once every two weeks, and 19.2% engage in binge drinking twice in the same period (Park, 2017; Yang, 2014). There is also research suggesting that university students are more likely to drink when faced with emotional perception abilities involving academic stress (Bae, 2019; Lee, 2021; Kwon, 2022). Studies have shown that emotional factors, such as depression or anxiety, play a significant role in alcohol-related issues. Depression or anxiety, resulting from stress, is used as a means to alleviate negative emotions, leading to increased alcohol consumption (Yang & Yoon,

The purpose of this study is to investigate the correlation among exam anxiety, academic stress, alcohol dependence, and academic achievement in nursing students, and to understand how these variables influence the level of academic achievement. The specific objectives are as follows:

First, explore differences in exam anxiety, academic stress, alcohol dependence, and academic achievement according to the general characteristics of the subjects.

Second, examine the correlation among exam anxiety, academic stress, alcohol dependence, and academic achievement in nursing students.

Third, identify the variables within the correlation of exam anxiety, academic stress, and alcohol dependence in nursing students that impact academic achievement.

2. Materials and Methods

2.1. Research Design

This study is a descriptive survey research using a self-report questionnaire to understand the correlation among exam anxiety, academic stress, alcohol dependence, and academic achievement in nursing students, and to investigate the impact of these variables on academic achievement.

2.2. Research Subjects

The participants of this study were students enrolled in the nursing department at a university located in Gyeongnam. The study included those who voluntarily expressed their willingness to participate among students from all grades, and the final sample consisted of those who agreed to take part in the research. To verify the appropriateness of the sample size of nursing students, the G-power 3.1.9.7 program was utilized. Regression analysis with a moderate effect size (.15), a significance level of α (.05), and a power of the test (.80) was used to predict 12 predictor variables, resulting in a minimum required sample size of 127. Considering potential dropout rates, 153 sets of data were collected for the study's objectives. After accounting for incomplete responses or excluding surveys, a total of 130 sets of data were used for the final analysis.

2.3. Measures

2.3.1. Exam Anxiety

In this study, the level of Exam anxiety was measured using the Korean translated version of the Generalized Anxiety Disorder-7 (GAD-7). This tool consists of seven items rated on a Likert 4-point scale, ranging from 'not at all bothered' (0 points) to 'bothered nearly every day' (3 points). The total score ranges from 0 to 21. Interpretation of scores categorizes scores of 5 or above as mild anxiety, 10 or above as moderate anxiety, and 15 or above as severe anxiety. The reliability Cronbach's α value for this tool was .90 during its development, and for this study, the reliability Cronbach's α value was .85.

2.3.2. Academic Stress

In this study, academic stress was assessed using the Maslach Burnout Inventory-Student Survey (MBI-SS) developed by Schaufeli et al. (2002) and adapted by Shin Dong-woo (2012). This tool consists of a total of 15 items, including emotional exhaustion (5 items), cynicism (4 items), and reduced efficacy (6 items). Responses are rated on a 4-point Likert scale from 'not at all' (1 point) to 'very much' (4 points), where higher scores indicate higher

academic stress. The reliability Cronbach's alpha value for the tool during its development was .87, and for this study, the reliability Cronbach's alpha value was .81.

2.3.3. Alcohol Dependence

In this study, the level of alcohol dependence was assessed using the Korean Alcohol Urge Questionnaire (AUQ-K). The AUQ-K was translated by a mental health specialist proficient in English, and to address potential meaning loss due to direct translation resulting from cultural differences, it underwent adaptation. Subsequently, a panel consisting of one mental health specialist, one psychiatrist, one nurse, and one clinical psychologist, all proficient in English, gathered to review the translated content for content validity. The AUQ-K comprises a total of 8 items, with each item measuring the intensity of alcohol craving on a 7-point Likert scale ranging from 0 (not at all) to 6 (extremely). The internal consistency of the English version of AUQ, as measured by Cronbach's α , was 0.91, and for this study, the reliability Cronbach's α value was .70.

2.3.4. Academic Achievement

In this study, academic achievement was measured through subjective academic achievement. This tool refers to the Cognitive, Affective, and Psychomotor Perceived Learning Scale (CAP), developed by Rovai et al. (2009) to measure academic achievement in the cognitive, affective, and psychomotor domains among university students. The instrument was adapted by Park et al. (2010). Consisting of a total of 9 items, the negative items were reverse-scored, and higher scores indicate higher perceived academic achievement by the learner. Each item is rated on a 5-point Likert scale ranging from 'Not at all true' (1 point) to 'Always true' (5 points). The tool demonstrated a reliability Cronbach's α of .79 during its development, and for this study, the reliability Cronbach's α value was .81.

2.4. Data Collection & Ethical Consideration

The data collection for this study was conducted from August 15, 2023, to September 15, 2023. The collection method involved the researcher explaining the research purpose and method. Once the Google Form was completed through self-reporting, it was automatically collected. The research explanation and consent instructions provided information about the research, confidentiality and protection of personal information, participation procedures, methods, anticipated risks and benefits, withdrawal of consent, compensation for research participation, and access to data by relevant institutions.

2.5. Statistical Analysis

The data analysis was performed using IBM SPSS/22.0 statistical software, and the significance level for the results was set at .05.

First, the general characteristics of the subjects were analyzed using descriptive statistics, including frequency (percentage) for categorical variables and mean and standard deviation for continuous variables.

Second, differences in variables according to the general characteristics of the subjects were examined using t-tests and one-way ANOVA.

Third, the correlation between variables was analyzed using Pearson's correlation coefficient.

Forth, hierarchical multiple regression analysis was conducted to identify the factors influencing academic achievement.

3. Research Results

3.1. Characteristics of Nursing Student

The general characteristics of nursing students are presented in Table 1. Among nursing students, the majority were female (86 students, 66.2%), and the most common age group was '21 years old and above, 25 years old and below' (68 students, 52.3%). Regarding the academic year, the highest number of students were in the '4th year' (38 students, 29.2%), and in terms of the relationship with parents, 'good' was the most common response (77 students, 59.2%). The majority reported having a 'good' relationship with peers (96 students, 73.8%), and most students indicated 'no' involvement in religious activities (88 students, 67.7%). As for club participation, 'non-participation' was reported by 69 students (53.1%). Living arrangements with parents were primarily 'residing' (61 students, 46.9%), and in terms of major satisfaction, 'average' was the most common response (60 students, 46.2%).

3.2. Differences in Variables Based on General Characteristics of Nursing Students

The results of the analysis of differences in variables based on the general characteristics of nursing students are presented in Table 2. There were statistically significant differences in exam anxiety based on 'Parental Relationship' (F=14.66, p<.001) and 'Peer Relationship' (F=7.57, p<.001). Post hoc analysis revealed that in 'Parental Relationship,' 'Difficult' was higher than 'Good,' and 'Average' was higher than 'Good.' In 'Peer Relationship,' 'Difficult' was higher than 'Average' and 'Good. For academic stress, there was a statistically significant difference based on Major

Satisfaction'(F=4.37, p=.003). Regarding academic achievement, there were statistically significant differences based on 'Parental Relationship' (F=5.24, p=.007), 'Peer Relationship' (F=6.00, p=.003), and 'Major Satisfaction' (F=7.46, p=.005). Post hoc analysis indicated that in 'Parental Relationship,' 'Good' was higher than 'Average,' and in 'Peer Relationship,' 'Good' was higher than 'Difficult'.

Table 1: Characteristics of Nursing Student

Characteristics	Categories	No. of sample	Percentage %		
Sex	Male	44	33.8		
Sex	Female	86	66.2		
	≥20	48	36.9		
Age	21-25	68	52.3		
	≤26	14	10.8		
	1 st Year	30	23.1		
Grade	2 nd Year	36	27.7		
Grade	3 rd Year	26	20.0		
	4 th Year	38	29.2		
D ()	Poor	4	3.1		
Parental Relationship	Average	49	37.7		
	Good	77	59.2		
	Poor	4	3.1		
Peer Relationship	Average	30	23.1		
	Good	96	73.8		
Religious activities	Yes	42	32.3		
Religious activities	No	88	67.7		
Participation in	Yes	61	46.9		
clubs	No	69	53.1		
	Yes	61	46.9		
Living with Parents	No	38	29.2		
	Etc.	2	1.5		
	Very Dissatisfied	1	0.8		
	Dissatisfied	4	3.1		
Major Satisfaction:	Neutra	60	46.2		
	Satisfied	42	32.3		
	Very satisfied	23	17.7		

3.3. The Correlation between Exam Anxiety, Academic Stress, Alcohol Dependency, and Academic Achievement in Nursing Students

The present study examined the correlation between exam anxiety, academic achievement, and academic stress among nursing students, and their impact on the level of alcohol dependence, as presented in Table 3. Academic achievement was found to be negatively correlated with exam anxiety (r=-.28, p<.001), academic stress (r=-.54, p<.001), and alcohol dependence (r=-.10, p=.003).

3.4. The Impact on Academic Achievement in Nursing Students

The results of the multiple regression analysis conducted to identify factors influencing academic achievement in nursing students are presented in Table 4. The Durbin-Watson statistic, assessing the independence of residuals in the regression model for the independent variables, was 2.231, close to 2, indicating no autocorrelation. Tolerance values ranged from 0.872 to 0.946, all above 0.1, and

Variance Inflation Factors (VIF) ranged from 1.058 to 1.146, below the threshold of 10, confirming the absence of multicollinearity and satisfying the basic assumptions for conducting multiple regression analysis. The regression model was found to be significant (F=34.67, P<.001), with a total of six significant variables: exam anxiety, academic stress, alcohol dependency, parent relationships, peer relationships, and major satisfaction, explaining a total variance of 31.9%. Among these, the most influential factor was academic stress (β =-.352).

Table 2: The differences in the Impact of Exam Anxiety, Academic Stress, Alcohol Dependence, Academic Achievement among Nursing

Characteristics	Categories	Exam Anxiety		Academic Stress		Alcohol Dependence		Academic Achievement					
		Mean±SD	t/F	p	Mean±SD	t/F	p	Mean±SD	t/F	р	Mean±SD	t/F	p
Sex	Male	1.59±0.76	0.45	.399	2.46±0.60	-0.85	.113	2.03±0.70	-0.59	.492	3.08±0.56	-1.14	.997
	Female	1.50±0.63			2.59±0.38			2.14±0.79			3.26±0.52		
Age	≥20	1.48±0.65	2.29	.106	2.65±0.23	1.88	.158	2.21±0.84	0.95	.390	3.16±0.54	2.20	.116
	21-25	1.44±0.60			2.57±0.47			2.14±0.80			3.33±0.51		
	≤26	1.85±0.73			2.40±0.50			1.88±0.34			3.04±0.56		
	1 st Year	1.40±0.64	1.35	.264	2.62±0.28	0.49	.691	2.23±0.59	0.81	.493	3.23±0.68	0.08	.974
	2 nd Year	1.55±0.65			2.50±0.38			1.95±0.63			3.25±0.37		
Grade	3 rd Year	1.34±0.50			2.54±0.51			2.06±0.86			3.19±0.62		
	4 th Year	1.65±0.72			2.62±0.42			2.23±0.84			3.25±0.50		
	Poor	2.57±0.97	14.66	p<.001	2.45±0.16	0.61	.543	1.56±0.59	1.28	.281	3.22±0.29	5.24	.007
Parental Relationship	Average	1.91±0.81		a>c b>c	2.66±0.42			2.24±0.87			2.91±0.54		b <c< td=""></c<>
	Good	1.35±0.47			2.56±0.42			2.13±0.75			3.32±0.53		
	Poor	2.54±1.07	7.57	p<.001	2.70±0.26	0.29	.750	1.75±0.27			2.53±0.25	6.00	.003
Peer Relationship	Average	1.63±0.67		a>b,c	2.60±0.34			1.98±0.54			3.11±0.44		a>c
	Good	1.39±0.54			2.56±0.46			2.21±0.86			3.33±0.54		
Religious	Yes	1.37±0.48	-1.17	.020	2.45±0.45	-1.60	.831	2.20±0.91	0.44	.435	3.31±0.60	0.72	.438
activities	No	1.55±0.68			2.61±0.40			2.10±0.73			3.21±0.51		
Participation in	Yes	1.52±0.67	0.11	.748	2.57±0.49	-0.13	.232	2.71±0.81	0.52	.699	3.23±0.57	-0.45	.598
clubs	No	1.50±0.63			2.58±0.36			2.09±0.75			3.24±0.50		
Living with Parents	Yes	1.59±0.72	2.52	.085	2.60±0.42	0.96	.386	2.24±0.88	2.11	.127	3.22±0.59	0.85	.432
	No	1.36±0.42			2.52±0.41			1.97±0.54			3.27±0.41		
	Etc.	2.14±1.41			2.87±0.28			1.50±0.35			2.78±0.47		
Major Satisfaction	Very Dissatisfied		1.01	.407		4.37	.003		0.67	.615		7.46	p<.001
	Dissatisfied	2.07±0.94			2.85±0.24			1.94±0.73			3.00±0.45		
	Neutra	1.54±0.69			2.65±0.34			2.10±0.67			3.08±0.38		
	Satisfied	1.41±0.54			2.57±0.42			2.19±0.86			3.27±0.49		
	Very satisfied	1.53±0.70			2.42±0.47			2.14±0.83			3.65±0.61		

Table 3: The Correlation between Exam Anxiety, Academic Stress, Alcohol Dependency, and Academic Achievement in Nursing Students

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Categories	Exam Anxiety $r(p)$	Academic Stress	Alcohol Dependence $r(p)$	Academic Achievement $r(p)$		
Exam Anxiety	1					
Academic Stress	r=.23 (p<.001)	1				
Alcohol Dependence	r=.19 (p<.001)	r=.15 (p=.004)	1			
Academic Achievement	r=28 (p<.001)	r=54 (p<.001)	r=10 (p=.003)	1		

Table 4: The Impact on Academic Achievement in Nursing Students

Categories	В	SE	β	t	p	VIF
(Constant)	2.27	.18		12.336	<.001	
Exam Anxiety	155	.12	230	-1.24	<.001	1.146
Academic Stress	221	.14	352	-1.51	<.001	1.058
Alcohol Dependence	316	.18	.171	-7.67	.008	1.086
Parental Relationship	.376	.12	.181	3.45	.003	1.123
Peer Relationship	.244	.11	.252	12.1	<.001	1.025
Major Satisfaction	.231	.16	.284	11.4	<.001	1.136

Adj-R²=.319, F=34.67, p<.001 Durbin-Watson = 2.231 VIF=1058~1.146 Tolerance = 0.872~0.946

4. Conclusions

The period of being a college student is an adolescence-to-adulthood transition, a crucial time in life to establish self-identity, find one's career path, and formulate lifelong plans. This is particularly significant for nursing students, as they experience a major difference from high school curricula, encountering unfamiliarity in their major field. They face more stress factors than students in other disciplines due to adapting to a substantial amount of academic and practical training.

Firstly, in this study, the most significant factor influencing the academic achievement of nursing students was found to be academic stress. Secondly, the factors influencing the academic achievement of nursing students in this study appeared in the following order: major satisfaction, peer relationships, exam anxiety, parent relationships, and alcohol dependency.

This research highlights the need for exploring ways to reduce academic stress for nursing students to enhance their academic achievement during university life. Particularly, the adaptation of nursing students, who are growing into healthcare professionals, should be further investigated concerning its correlation with social issues such as turnover rates in clinical settings. Their academic achievement will elevate the professionalism of clinical nurses and, consequently, directly impact the health and lives of the nation

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