

## Relationship Between Academic Stress and College Life Adaptation for Dental Hygiene Students: Focus on Self-efficacy, Burnout, Social Support\*

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### ABSTRACT

The purpose of this study is to investigate the academic stress, self efficacy, burn out, social support and college life adaptation of dental hygiene students and their correlations with related factors influencing college life adaptation. A total of 265 students were selected as stratified sampling methods at the universities in which the department of dental hygiene was established nationwide. From September 1, 2015 to October 22, 2015, the self report questionnaire was used. The main variables were college life adaptation, academic stress, self efficacy, burn out, social support, and analyzed using SPSS 21.0. College life adaptation was 5.17 out of 9 points, academic stress was 2.88 points out of 6 points, self efficacy, burn out, and social support were 3.35, 2.60, and 3.54 out of 5, each respectively. Self efficacy and stress due to task and class were significant influences on individual-emotional adaptation in college life adaptation. In the case of college environment adaptation, exhaustion, self efficacy and social support were significant influencing factors. In the case of social adaptation, self efficacy and social support were significant influencing factors. Overall, academic stress and college life adaptation were closely related, and social psychological factors such as burn out, self efficacy and social support were mediated. Therefore, it is suggested that it should be applied to college education in order to increase adaptation of dental hygiene students, to reduce academic stress and burn out, and to develop intervention strategies that can enhance self efficacy and social support.

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## **1. Introduction**

Modern men are doing their best to adapt to diversified knowledge system and information, development of cutting edge science and technology in such a rapidly evolving society. The college life in which the new environment and full-fledged social life begin is very important as it is a transition from adolescence to adulthood and also a period of accepting various changes in the surroundings. According to the National Statistical Office (NSO), 70.9% of 632,983 high school graduates, or 448,817, are entering college. However, most of the high school students in Korea undergo college entrance examination when they prepare for the college entrance exam score through the injection type education centered around the entrance examination rather than the individual's aptitude, interest and talent. There is a lack of preparatory education to accomplish this. As a result, 3 out of 10 college students were on leave of absence (Korea Educational Development Institute, 2012), and over 60% of college students were not satisfied with college life, and are struggling with academic, economic, relationship problems (Kim & Kim, 2009).

In particular, dental hygiene students are required to have rigorous and extensive study without any room in the curriculum for diversity of major subjects when compared with college students of other majors, and it is expected that they will experience more stress during adaptation to college life due to their difficulties, psychological burden of passing the national examination, and strict norms of behavior. Also in the previous study of nursing, another field of health service, a significant correlation was discovered between the nursing students' academic stress and college life adaptation (Choi & Lee, 2015). In addition, modern dental hygienists need to cultivate a healthy mind as a specialist who can take care of and manage the social psychological factors of the local community residents. Dental hygiene students should be able to positively develop social and psychological factors. In order to produce competent dental hygienists, the students' satisfaction with college life is important, and it is necessary to grasp the influence of academic stress on college life and examine the mediating effects of social psychological factors such as self efficacy, burn out and social support, which should be reflected in student guidance.

Accordingly in this study, we have attempted to investigate academic stress, self efficacy, burn out and social support, adaptation to college life, and related factors influencing interrelationship and adaptation to college life were identified.

## **2. Materials and Methods**

### *2.1 Subject*

This study was carried out on 383 students who were enrolled in six universities in Korea by dividing the universities that have dental hygienist departments nationwide into Gyeonggi Province, Chungcheong Province, Gangwon Province, Jeolla Province and Gyeongsang Province. In general, the sensitivity of the data is increased and the size of the sample is more than 200 suitable for model validation (Lee & Lim, 2009), and about 400 people were decided as the subjects of the

study in view of the difficulty of collecting data. The ethical consideration of the subjects was reviewed and approved by the Bioethics Committee of the Public Health Agency (IRB No: P01-201511-22-003).

## *2.2 Measurement*

The research tool consisted of 7 questions of general character, 45 questions of academic stress, 61 questions of adaptation to college life as dependent variables, 10 questions of self efficacy as a parameter, 10 questions of burn out, and 15 questions of social support.

Academic stress was used by 45 items developed by Park & Park (2012). The measure is a 6-point Likert type scale, which means that the higher the score from 'not sure (1 point)' to 'definitely (6 points)' indicates the greater level of academic stress if the score is higher. The results of the exploratory factor analysis to verify the validity by combining homogeneous factors of academic stress were as follows: 45 items were defined as three items of parent and teacher caused stress, grade related stress, self perception stress related to task. Cronbach's  $\alpha$  of stress caused by parents and professors was 0.957, that for grade related stress was 0.926, and Cronbach's  $\alpha$  for self-perception stress and sub-factors related to task and class were 0.899.

Self efficacy was measured using the standard developed by Jerusalem and Schwarzer (1992) as a Korean version of the scale. Measurements were answered with a 5-point Likert scale ranging from 'not at all (1 point)' to 'very much in agreement (5 points)'. Higher score meant higher self efficacy. Cronbach's  $\alpha$  in this study was 0.83.

The burn out was based on 10 items of Professional Quality of Life Scale (ProQOLS): Compassion satisfaction/fatigue subscale-version 5(Korea) Stamm (2009) revised and supplemented based on Compassion satisfaction / Fatigue Self test for Helpers developed by Figely (1995). The results were as follows: answers were taken based on a 5-point Likert scale from 'not at all (1 point)' to 'very much in agreement (5 points)', and the total score ranged from 10 to 50 points, burn out meant 'low' for 22 points or below, 23 to 41 meant 'normal', and 42 or higher means 'high'. In this study, Cronbach's  $\alpha$  was 0.64.

We used the tool developed by Park (1985) to measure the social support of college students. The measure was taken on a 5-point Likert scale from 'not at all (1 point)' to 'very much in agreement (5 points)', and the higher the score, the higher the social support. Cronbach's  $\alpha$  in this study was 0.87.

The measurement of adaptation to college life was based on a questionnaire developed by Baker and Sirky (1984), which was further developed by Hyun (1992) with the Student to College Questionnaire (SACQ). A total of 67 items were included, and a 9-point Likert scale indicated that the higher the score, the better the adaptation. A total of 61 items were used for the analysis except for the six items with factor scores of 0.3 or less. In the case of college life adaptation items, four sub-factors were derived and named as personal-emotional adaptation, college environment adaptation, social adaptation, and academic adaptation, and Cronbach's  $\alpha$  of each factor was 0.867, 0.884, 0.800, and 0.690.

### 2.3 Data collection

From September 1, 2015 to October 22, 2015, the professor of the school asked for a prior consent by e-mail and telephone, and the self-filled questionnaire was mailed together with the return envelope. First, 83 preliminary surveys were conducted for college students, and 603 copies were distributed to the remaining 5 universities. A total of 383 copies were sent and 373 copies were collected, and 373 copies were selected as the final subjects (97%) excluding unfaithful respondents.

### 2.4 Statistical analysis

The collected data were calculated using the IBM SPSS Statistics 21.0 program. Differences in academic stress, college adjustment, self efficacy, burn out, and social support were analyzed by Independent t-test and Duncan multiple comparison analysis after one-way ANOVA with the significance level decided at  $\alpha = 0.05$ . Pearson's correlation analysis was used to examine the relationship between academic stress, college life adaptation, self efficacy, burn out, and social support. Hierarchical regression analysis was applied to the factors related to adaptation to college life. Factor analysis was used to extract the subscales of academic stress and college life adaptation items. Principal component analysis was selected as the factor extraction method, and the eigenvalues of each factor were obtained, and VARIMAX law to determine the relevant factors.

## 3. Results

### 3.1 Dental hygiene students' level of perception of academic stress, self efficacy, burn out, social support, and college life adaptation

**Table 1.** Academic stress, self efficacy, burn out, social support, and level of college life adaptation

Variable	Frequency	Minimum	Maximum	Mean $\pm$ S.D
College life adaptation	373	2.51	7.55	5.17 $\pm$ 0.69
Academic stress	373	1.00	5.20	2.88 $\pm$ 0.87
Self efficacy	373	1.90	5.00	3.35 $\pm$ 0.66
Burn out	373	1.40	3.70	2.60 $\pm$ 0.45
Social support	373	1.93	4.73	3.54 $\pm$ 0.52

Table 1 shows the perceptions of college life adaptation, academic stress, self efficacy, burn out and social support. The adaptation to college life was 5.17 points out of 9 points on average. The academic stress was found to be under the medium stress from the point of 6 points to 2.88 points. Self efficacy and social support had the highest score of 5 points, and mean scores were 3.35 and 3.54, respectively.

3.2 Adaptation to college life according to general characteristics

Table 2. College life adaptation following general characteristics

Characteristics	N	College life adaptation			
		Individual	College environment	Society	Academics
		Mean ± S.D. P	Mean ± S.D. P	Mean ± S.D. P	Mean ± S.D. P
Age		0.001	0.003	0.791	0.718
20 or below	193	5.12±1.04	5.19±0.99	6.35±1.18	4.36±1.00
21 or above	180	4.76±1.05	4.90±1.05	6.39±1.20	4.32±1.10
Grade		<0.001	<0.001	0.038	0.275
1	92	5.29±1.15 <sup>c</sup>	5.47±1.05 <sup>b</sup>	6.50±1.24 <sup>ab</sup>	4.38±0.98
2	107	5.06±0.87 <sup>bc</sup>	4.85±0.91 <sup>a</sup>	6.15±1.15 <sup>a</sup>	0.20±0.96
3	108	4.77±1.05 <sup>ab</sup>	4.92±0.84 <sup>a</sup>	6.31±1.25 <sup>ab</sup>	4.35±1.09
4	66	4.53±1.04 <sup>a</sup>	4.98±0.73 <sup>a</sup>	6.64±1.04 <sup>b</sup>	4.50±0.98
Residential type		0.108	0.002	0.942	0.935
Home	157	5.08±1.01	5.24±0.92 <sup>b</sup>	6.35±1.33	4.36±0.98
Living on one's own	100	4.83±1.18	5.00±0.93 <sup>a</sup>	6.40±0.99	4.34±0.99
Other	116	4.86±1.00	4.84±0.90 <sup>a</sup>	6.38±1.017	4.32±1.06
Academic year system		0.118	0.623	0.710	0.157
4 years	197	4.86±1.01	5.03±0.83	6.39±1.07	4.41±0.95
3 years	176	5.03±1.11	5.07±1.03	6.35±1.32	4.26±1.05
Reason for choosing major		0.089	0.085	0.016	0.014
Based on grades and scores	57	4.94±1.10	4.81±0.97	6.10±1.26 <sup>a</sup>	4.11±0.99 <sup>a</sup>
At parents' or teachers' recommendations	89	4.72±1.06	5.01±0.91	6.24±1.26 <sup>ab</sup>	4.19±1.00 <sup>ab</sup>
For high employment rate after graduation	167	4.98±1.01	5.07±0.87	6.40±1.11 <sup>a</sup>	4.38±0.99 <sup>ab</sup>
For aptitude	52	5.23±1.14	5.31±1.08	6.83±1.06 <sup>a</sup>	4.72±0.93 <sup>b</sup>
GPA		0.102	0.024	0.021	<0.001
A	41	4.87±1.21	5.13±0.80 <sup>b</sup>	6.43±1.06 <sup>b</sup>	5.29±0.92 <sup>c</sup>
B	224	5.05±1.03	5.14±0.94 <sup>b</sup>	6.50±1.20 <sup>b</sup>	4.44±0.87 <sup>b</sup>
C or below	98	4.74±1.11	4.85±0.94 <sup>ab</sup>	6.11±1.11 <sup>ab</sup>	3.77±0.97 <sup>a</sup>

\* by independent t-test or one way ANOVA test at p<0.05  
<sup>a,b,c</sup> Means followed by different letters (Duncan) are significantly different at  $\alpha =0.05$

Table 2 shows the results of analyzing the difference in the degree of adaptation to college life according to general characteristics. Among the four subscales of college life adaptation, college environment adaptation factors showed significant differences in age (P = 0.003), grade (P <0.001),

residential type ( $P = 0.002$ ), and average grade ( $P = 0.024$ ). Social adaptation factors showed significant difference in grade ( $P = 0.038$ ), reason for selection ( $P = 0.016$ ) and average grade ( $P = 0.021$ ). In the case of adaptation factor of college environment, the adaptation of college life was best at 5.47 points for students in the first year and 6.64 for the fourth years students in social adaptation factors. Differences in grades showed that students with B grade are good at adapting to college environment and adapting to society, and students with C credits have the lowest adaptation to college life. The higher the score, the better adaptation to college life.

### 3.3 Dental hygiene students' correlation analysis of academic stress, self efficacy, burn out, social support, and college life adaptation

**Table 3.** Correlation analysis between academics stress, self efficacy, burn out, social support, and college life adaptation

Variables	College life adaptation			Academic stress			Self efficacy	Burn out	Social support	
	Individual emotion	College environment	Society	Academics	Parents and professors	Grades				Tasks and classes
College life adaptation										
Individual emotion	1									
College environment	0.310**	1								
Society	0.469**	0.376**	1							
Academics	0.269**	0.368**	0.111**	1						
Academic stress										
Parents and professors	-0.284**	-0.150**	-0.312**	-0.199**	1					
Grades	-0.274**	-0.067	-0.172**	-0.376**	-0.663**	1				
Tasks and classes	-0.464**	-0.272**	-0.304**	-0.344**	0.678**	0.643**	1			
Self efficacy	0.308**	0.330**	0.251**	0.161**	-0.219**	-0.262**	-0.355**	1		
Burn out	-0.494**	-0.410**	-0.435**	-0.185**	0.332**	0.213**	0.376**	-0.430**	1	
Social support	0.345**	0.443**	0.332**	0.230**	-0.271**	-0.151**	-0.385**	0.369**	-0.456**	1

\*\* by the Pearson correlation at  $\alpha = 0.01$

Table 3 shows the correlation between dental hygiene students' academic stress, self efficacy, burn out and social support, and college life adaptation. There was a negative correlation between college life adaptation, academic stress, and burn out, and there was a positive correlation between college life adaptation, self efficacy, and social support. The personal adaptation and burn out of college life adaptation showed a strong negative correlation ( $r = -0.494$ ), and the college environment adaptation and social support showed a strong positive correlation ( $r = 0.443$ ). There was a strong negative correlation between parent and teacher caused stress and grade caused stress ( $r = -0.663$ ).

3.4 Factors impacting dental hygiene students' college life adaptation

**Table 4.** Related factors affecting individual emotions, a sub factor of college life adaptation of dental hygiene students

Variables	Division	Model I		Model II		Model III		
		$\beta$	t	$\beta$	t	$\beta$	t	
General characteristics	Age (Ref.= $\geq 21$ )	<20	0.070	0.899	0.066	0.966	0.042	0.642*
	Grade	1	0.387	4.163*	0.340	4.150*	0.306	3.813*
		2	0.299	3.421*	0.279	3.642*	0.226	3.028*
		3	0.131	1.890	0.190	3.130*	0.135	2.259
	Reason for choosing major (Ref.=For aptitude)	Based on grades and scores	-0.099	-1.534	-0.072	-1.277	-0.078	-1.438
		At parents' or teachers' recommendations	-0.177	-2.571*	-0.097	-1.625	-0.057	-0.990
		For high employment rate after graduation	-0.122	-1.545	-0.039	-0.616	-0.024	-0.399
	GPA (Ref.=Dor below)	A	0.045	0.422	-0.075	-0.802	-0.117	-1.280
		B	0.162	1.059	-0.006	-0.044	-0.034	-0.265
		C	-0.008	-0.057	-0.131	-1.069	-0.099	-0.835
Burn out				0.075	1.526	0.012	0.255	
Self efficacy				-0.407	-7.737*	-0.366	-7.078*	
Social support				0.093	1.842	0.043	0.849	
Academic stress								
	Stress caused by parents and professors					0.082	1.268	
	Grade related stress					-0.095	-1.502	
	Stress perceived on one's own related to task and class					-0.269	-4.055*	
			$R^2=0.107$		$R^2=0.337$		$R^2=0.394$	
			adjust $R^2=0.082$		adjust $R^2=0.313$		adjust $R^2=0.367$	
			$F=4.355(P<0.001)$		$F=14.025(P<0.001)$		$F=14.458(P<0.001)$	

\* Statistically significant differences by hierarchical regression analysis at  $\alpha = 0.05$

Table 4 summarizes the results of hierarchical regression analysis to identify the influence factors of four sub-factors of college life adaptation as dependent variables.

Self efficacy ( $\beta = -0.366$ ) and stress due to task and class ( $\beta = -0.269$ ) were significant factors influencing individual-emotional sub-factor of college life adaptation.

**Table 5.** Related factors affecting college environment adaptation, a sub factor of college life adaptation of dental hygiene students

Variables	Division	Model I		Model II		Model III		
		$\beta$	t	$\beta$	t	$\beta$	t	
General characteristics	Age (Ref.= $\geq 21$ )	<20	-0.079	-1.013	-0.100	-1.140	-0.113	-1.671
	Grade (Ref.=4)	1	0.205	2.221*	0.104	1.267	0.068	0.821
		2	-0.081	-0.935	-0.147	-1.934	-0.171	2.212*
		3	-0.013	-0.189	-0.001	-0.013	-0.014	-0.221
	Reason for choosing major (Ref.=For aptitude)	Based on grades and scores	-0.171	-2.655*	-0.121	-2.153*	-0.113	-2.024*
		At parents' or teachers' recommendations	-0.098	-1.444	-0.030	-0.495	-0.033	-0.574
		For high employment rate after graduation	-0.124	-1.735	-0.051	-0.819	-0.047	-0.741
	GPA (Ref.=Dor below)	A	0.209	1.979*	0.088	0.953	0.112	1.177
		B	0.375	2.467*	0.218	1.639	0.226	1.697
		C	0.188	1.340	0.069	0.568	0.077	0.628
Burn out				0.134	2.748*	0.136	2.705*	
Self efficacy				-0.212	-4.050*	-0.205	-3.841*	
Social support				0.264	5.224*	0.245	4.721*	
Academic stress								
Stress caused by parents and professors						0.032	0.485	
Grade related stress						0.106	1.636	
Stress perceived on one's own related to task and class						-0.125	-1.828	
			$R^2=0.124$		$R^2=0.343$		$R^2=0.352$	
			adjust $R^2=0.100$		adjust $R^2=0.320$		adjust $R^2=0.323$	
			$F=5.122(P<0.001)$		$F=14.455(P<0.001)$		$F=12.089(P<0.001)$	

\* Statistically significant differences by hierarchical regression analysis at  $\alpha = 0.05$

Table 5 illustrates the results of analyzing the factors influencing the adaptation of the college environment. The results showed that burn out ( $\beta = 0.136$ ), self efficacy ( $\beta = -0.205$ ) and social support ( $\beta = 0.245$ ) were significant, and academic stress was not significant.



**Table 6.** Related factors affecting adaptation to society, a sub factor of college life adaptation of dental hygiene students

Variables	Division	Model I		Model II		Model III		
		$\beta$	t	$\beta$	t	$\beta$	t	
General characteristics	Age (Ref.= $\geq 21$ )	<20	-0.021	-0.257	-0.030	-0.421	-0.051	-0.719
	Grade (Ref.=4)	1	-0.037	-0.385	-0.100	-1.163	-0.112	-1.299
		2	-0.170	-1.904	-0.201	-2.500*	-0.229	-2.844*
		3	-0.108	-1.531	-0.065	-1.020	-0.057	-0.892
	Reason for choosing major (Ref.=For aptitude)	Based on grades and scores	-0.186	-2.822*	-0.155	-2.621*	-0.161	-2.761*
		At parents' or teachers' recommendations	-0.167	-2.388*	-0.098	-1.559	-0.081	-1.294
		For high employment rate after graduation	-0.148	-2.004*	-0.082	-1.238	-0.093	-1.422
	GPA (Ref.=D or below)	A	0.155	1.418	0.039	0.394	-0.027	-0.278
		B	0.310	1.981*	0.154	1.097*	0.097	0.700
C		0.148	1.027	0.033	0.255	0.002	0.018	
Burn out				0.050	0.963	0.045	0.850	
Self efficacy				-0.332	-6.008*	-0.288	-5.182*	
Social support				0.163	3.061*	0.126	2.319*	
Academic stress								
Stress caused by parents and professors						-0.211	-3.027*	
Grade related stress						0.094	1.383	
Stress perceived on one's own related to task and class						-0.054	-0.762	
				$R^2=0.070$	$R^2=0.266$	$R^2=0.296$		
				adjust $R^2=0.044$	adjust $R^2=0.239$	adjust $R^2=0.264$		
				$F=2.732(P<0.001)$	$F=10.007(P<0.001)$	$F=9.349(P<0.001)$		

\* Statistically significant differences by hierarchical regression analysis at  $\alpha = 0.05$

The factors affecting social adaptation in college life adaptation were self efficacy ( $\beta = -0.288$ ), social support ( $\beta = 0.126$ ), and parent and professor caused stress ( $\beta = -0.211$ ) turned out to be significant.

**Table 7.** Related factors affecting adaptation to academics, a sub factor of college life adaptation of dental hygiene students

Variables	Division	Model I		Model II		Model III		
		$\beta$	t	$\beta$	t	$\beta$	t	
General characteristics	Age (<20 (Ref.= $\geq 21$ ))	-0.090	-1.222	-0.102	-1.434	-0.103	-1.520	
	Grade (Ref.=4)	1	-0.065	-0.746	-0.121	-1.402	-0.129	-1.550
		2	-0.126	-1.537	-0.165	-2.051*	-0.192	-2.484*
		3	-0.034	-0.533	-0.040	-0.624	-0.114	-1.850
	Reason for choosing major (Ref.=For aptitude)	Based on grades and scores	-0.131	-2.174*	-0.104	-1.758	-0.111	-1.981*
		At parents' or teachers' recommendations	-0.139	-2.159*	-0.111	-1.756	-0.073	-1.209
		For high employment rate after graduation	-0.109	-1.617	-0.077	-1.163	-0.049	-0.787
GPA (Ref.=D or below)	A	0.455	4.555*	0.402	4.101*	0.397	4.189*	
	B	0.328	2.287*	0.262	1.864	0.277	2.077*	
	C	0.010	0.077	-0.040	-0.311	0.030	0.244	
Burn out				0.077	1.480	-0.004	-0.071	
Self efficacy				-0.048	-0.861	-0.043	-0.797	
Social support				0.151	2.829*	1.135	2.596*	
Academic stress								
	Stress caused by parents and professors					0.308	4.604*	
	Grade related stress					-0.300	-4.606*	
	Stress perceived on one's own related to task and class					-0.218	-3.181*	
		$R^2=0.219$		$R^2=0.265$		$R^2=0.351$		
		adjust $R^2=0.197$		adjust $R^2=0.239$		adjust $R^2=0.322$		
		F=10.147(P<0.001)		F=9.965(P<0.001)		F=12.024(P<0.001)		

\* Statistically significant differences by hierarchical regression analysis at  $\alpha = 0.05$

Table 7 shows the results of analyzing the factors related to academic adjustment in college life adaptation, and social support ( $\beta = 1.135$ ) and all sub-factors of academic stress were significant influencing factors.

#### 4. Discussion

The college life is a transitional period from adolescence to adulthood, and is a process of breaking away from the existing lifestyle and becoming an independent person. However, it is also a time to experience conflict, wandering, confusion and agitation in a new environment, and it is necessary to attain a task to adapt to a new life rather than an existing living environment. Therefore, many adaptation difficulties and psychological problems arise (Choi, 2001), and in fact, according to the results of a college student counseling center, a large number of college students are struggling with personality and adjustment problems, and 33% of students who visited the counseling center had problems with personality and adaptation (Hongik University Student Counseling Center, 2005). In this situation, the research on the relationship between dental hygiene and various social psychological factors influencing students' adaptation to college life is still inadequate. Therefore, in this study, we attempted to establish basic data to seek intervention strategies to improve adaptation to college life by identifying the relationship between dental hygiene and students' academic stress and college life adaptation.

In this study, the average score of self efficacy was 3.35 points, which was consistent with the results of the previous studies that examined the self efficacy of dental hygiene students (Yun, 2011; Jung, 2012).

The average score of burn out was 2.60, which was similar to the study of burn out of nursing students in similar disciplines (Kang, 2015). In the clinical staff, the burn out of the dental hygienist was 2.62, similar to that of the student (Lee, 2010), but the nurse was higher at 3.27 points because of the nature of the work (Ahn et al., 2011).

The average score of social support was 3.54 points, and the average score of dental hygiene students and students was 3.68 points in the previous study and 3.42 points in nursing students (Lim & Yun, 2014; Yang, 2014). The average of college life adaptation was 5.17 points, which was mid point based on the maximum score of 9 points. The score was similar to 3.14 points for nursing students surveyed with 5 points.

A negative correlation was found between academic stress and college life adaptation, which was consistent with the results of a survey of nursing students and newly entering college students (Choi & Lee, 2012). Kang (2015) also found that the lower the stress level of college students, the better the adaptation to college life. Therefore, it is suggested that the development of the academic program which can reduce the academic stress of the students is needed. There was a significant negative correlation between academic stress and self efficacy, and the relationship between college life adaptation and self efficacy was positively correlated.

Self efficacy was also found to be a significant factor in regression analysis. It turned out that self efficacy was a significant mediating effect in the relationship between newly entering students' academic stress and college life adjustment, and accordingly, the relationship with academic stress was negative and closely related to college life adjustment (Choi, 2012). These results suggest that self efficacy enhances students' ability to cope with problem-solving processes more effectively and understand them effectively. Social support, college life adaptation, and academic stress also showed positive relationship. In the study of Lee & Eo (2013), social support also showed a strong

positive correlation with college life adaptation. In addition, stress, social support, and response level of college students were closely related to mental and psychological adjustment, and the results of the study showed that depression was associated with lower levels of stress, anxiety and depression (Crockett et al., 2007).

These results combined show that academic stress and college life adaptation have a strong negative correlation and that social psychological factors such as self efficacy, burn out, and social support have mediating effects in relation to academic stress and college life adaptation. Therefore, it is expected that the adaptation of dental hygiene students to college life will be enhanced if academic stress and burn out are further reduced, and self efficacy and social support are increased. That is, in order to elevate the adaptation of dental hygiene students to college life, it is necessary to develop a program that can improve academic adaptation by seeking an intervention strategy that can reduce academic stress and burn out, and increase self efficacy and social support.

This study is meaningful in that it investigated the social psychological factors affecting the adaptation of college life to dental hygiene students. However, since it is a survey result of students with some dental hygiene students, it may be difficult to extend the analysis to the entire dental hygiene students. It is proposed that in the future research, it is necessary to conduct advanced research on the factors related to the practice such as the dental hygiene students' practical training which they experience, and a similar experimental study is needed to develop a program that can enhance the actual adaptation to college life.

## 5. Conclusion

This study investigated the relationship between dental hygiene students and college life adaptation and academic stress, and analyzed the mediating effects of self efficacy, burn out, and social support. The main results are as follows.

- 1) Dental hygiene students' adaptation to college life was 5.17, academic stress 2.88, self efficacy 3.35, burn out 2.60, and social support was 3.54.
- 2) There was a significant difference according to age ( $P = 0.003$ ), grade ( $P < 0.001$ ), residential type ( $P = 0.002$ ) and average grade ( $P = 0.024$ ), and there was a significant difference in social adaptation as in grade ( $P = 0.038$ ), reason for major selection ( $P = 0.016$ ), and average grade ( $P = 0.021$ ).
- 3) Adaptation to college life, academic stress, burn out were related to significant negativity, and college life adaptation, self efficacy, and social support were strongly positive. There was a strong negative correlation ( $r = -0.494$ ) between college life adaptation and personal emotional adaptation and burn out, and there was a strong positive correlation between college environment adaptation and social support ( $r = 0.443$ ).
- 4) Self efficacy ( $\beta = -0.366$ ) and stress due to task and class ( $\beta = -0.269$ ) were significant influential factors on individual-emotional adaptation of college life adaptation. Factors influencing college environment adaptation were social support ( $\beta = 0.245$ ), self efficacy ( $\beta = -0.205$ ), and burn out ( $\beta = 0.136$ ). The effect sizes of the factors influencing social adaptation were

in the order of self efficacy ( $\beta = -0.288$ ), stress caused by parents and professors ( $\beta = -0.211$ ), and social support ( $\beta = 0.126$ ). The factors influencing academic adjustment were social support ( $\beta = 1.135$ ) and all subscales of academic stress.

Based on the results above, it was found that academic stress and college life adaptation are closely related, and social psychological factors such as burn out, self efficacy and social support have mediating effects. Therefore, it is suggested that it should be applied to college education in order to increase adaptation of dental hygiene students, reduce academic stress and burn out, and develop intervention strategies that can enhance self efficacy and social support.

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