

# Effect of satisfaction in major at university on academic achievement among physical therapy students

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**Abstract.** [Purpose] The purpose of this study was to investigate satisfaction in major among physical therapy students and to identify the sub-factors of satisfaction in major affecting academic achievement. [Subjects and Methods] We distributed a self-administered questionnaire, comprising items relating to satisfaction in major and academic achievement to 369 physical therapy students located in Seoul, Daejeon, Jinju, Pohang, and Gunsan. [Results] General satisfaction and academic achievement showed the greatest correlation ( $r = 0.235$ ), followed by course satisfaction ( $r = 0.123$ ). [Conclusion] Several sub-factors were found to affect academic achievement. The results of this study can be used as the basis for programs that aim at development of satisfaction in major and academic achievement among clinical physical therapists.

**Key words:** Major satisfaction, Academic achievement, Physical therapy students

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## INTRODUCTION

Satisfaction in major refers to an individual's evaluation of their current major, as compared to a set of criteria for a career or job. A good match between major and career choice, and a school with a good reputation and social awareness have a positive impact on major satisfaction<sup>1)</sup>. However, current unemployment problems have made college student employment a social problem, and accordingly, stable and professional jobs are highly sought after. Therefore, the employment potential of a college and specific major has become an important factor in determining the course that students choose. Health-related license-issuing departments are no exception; competition between students trying to enter health-related departments with high employment rates, in particular physical therapy departments, has become fierce. Given that college students are increasingly selecting majors based on grades, not their aptitude or interests, there is increasing major dissatisfaction<sup>2)</sup>. As indicated above, if students are selecting majors based on grades at the time of matriculation or upon parents' recommendations, satisfaction in major is likely to be low<sup>3)</sup>, and low satisfaction in major has a negative effect on forming the correct beliefs and attitudes for getting a job after graduation<sup>4)</sup>. It is therefore desirable to maintain a high level of satisfaction in major for

individuals to form a positive attitude towards the careers emanating from their majors<sup>5)</sup>. In addition, satisfaction in major is related to academic achievements, and groups with high academic achievement have higher satisfaction in major than groups with low academic achievement. Causal relationship analysis between college students' academic achievement and the factors influencing academic achievement indicate that college and curriculum satisfaction<sup>6)</sup> have a greater impact on class attitude than students' Korean SAT grades, and ultimately, class attitude has a decisive effect on academic achievement.

There are many studies on satisfaction in major and academic achievement, but none have specifically targeted students majoring in physical therapy. Thus, we investigated the satisfaction in major of students majoring in physical therapy, with the aim of identifying the sub-factors of satisfaction in major that most affect academic achievement.

## SUBJECTS AND METHODS

The survey was completed by 369 physical therapy students located in Seoul, Daejeon, Jinju, Pohang, and Gunsan, Republic of Korea. For a complete enumeration of study subjects, we randomly chose five representative schools at which to distribute the self-administered questionnaires. The questionnaires comprised questions relating to satisfaction in major and academic achievement. Out of 510 questionnaires distributed, a total of 442 (86.7%) completed questionnaires were collected. Of these, 73 (14.3%) were excluded because they were incomplete or contained insincere answers. A total of 369 (72.4%) questionnaires were used for the final analysis. The experiment was conducted under the approval of the Institutional Review Board of S University (SYUIRB

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University students' satisfaction in major was evaluated using the course evaluation survey form developed by Braskamp Wise of Illinois University, and the course evaluation survey form used by Hengstler<sup>7)</sup>. The test was adapted by Na in 1985, and then again by Jang et al. in 1986. The test is composed of 34 questions and assesses satisfaction in five factors. Among these, Ha<sup>9)</sup> included seven questions on general satisfaction and five questions on cognition satisfaction for a course. We used a composite questionnaire composed of suitable satisfaction in major questions developed by Cho<sup>8)</sup>, but the school satisfaction questions were omitted.

In the advanced research conducted by Cho<sup>8)</sup>, the Cronbach's  $\alpha$  coefficient was 0.92. In this study, the Cronbach's  $\alpha$  coefficient was 0.83.

The grades for the whole year were divided into A+, A, B+, B, C+, C, D+, D, and F<sup>10)</sup>.

The statistical software SPSS ver. 18.0 was used to analyze data. The characteristics of satisfaction in major and academic achievement are presented as frequencies and percentages. A one-way analysis of variance was used to analyze differences in academic achievement according to the categories of major satisfaction. The Scheffé test was used for post hoc analysis, and Pearson's correlation coefficient was used to examine the correlation between academic achievement and major satisfaction. Multiple regression analysis was used to examine the relative effect of these factors.

## RESULTS

The satisfaction in major and academic achievement of the 369 subjects are shown in Table 1. Academic achievement according to the sub-factors of satisfaction in major is shown in Tables 2–6. All of the sub-variables of general satisfaction were statistically significant; responses to “The courses of my department are suitable for me” ( $p < 0.001$ ) and “I am interested in the curriculum of my department” ( $p < 0.001$ ) showed a particularly high degree of difference. In the course satisfaction category, responses to “The major exam is appropriate and is also helpful for study” ( $p < 0.05$ ) showed a high degree of difference. In the relationship satisfaction category, responses to “Grades are fairly and carefully given” ( $p < 0.05$ ) showed a high degree of difference. In the awareness satisfaction category, responses to “Many people would like to come to the department I belong to” ( $p < 0.05$ ) showed a high degree of difference. In the occupation survey, most responses showed statistically significant differences, especially those for “I will go to a graduate school with the same department after graduation” ( $p < 0.001$ ) and “I will get a job related to the department I belong to after graduation” ( $p < 0.01$ ).

The correlation between satisfaction in major sub-factors and student academic achievement is shown in Table 7. General satisfaction and academic achievement showed the greatest correlation ( $r = 0.235$ ,  $p < 0.01$ ), followed by course satisfaction ( $r = 0.123$ ,  $p = 0.018$ ).

**Table 1.** Major satisfaction and academic achievement of physical therapy students

Background factor	Category	Respondents (n)	Percentage (%)
Gender	Male	171	46.3
	Female	198	53.7
Major satisfaction	Satisfied	177	48.0
	Average	140	37.9
	Dissatisfied	52	14.1
	Less than 2.0 (D+-F)	5	1.4
Academic achievement	2.0–3.0 (C-C+)	52	14.1
	3.0–4.0 (B-B+)	222	60.2
	4.0 or more (A-A+)	90	24.4

**Table 2.** Academic achievement according to the general satisfaction of physical therapy students

Detailed contents	Academic achievement	M $\pm$ SD
I am interested in the curriculum of my department.	Less than 2.0 (D+-F)	3.00 $\pm$ 0.707 <sup>a</sup>
	2.0–3.0 (C-C+)	3.04 $\pm$ 0.816 <sup>b</sup>
	3.0–4.0 (B-B+)	3.30 $\pm$ 0.739 <sup>c</sup>
	4.0 or more (A-A+)	3.71 $\pm$ 0.851 <sup>d</sup>
	Total	3.36 $\pm$ 0.806 <sup>***</sup>
Scheffe		d > b, d > c
The major books are worth studying.	Less than 2.0 (D+-F)	3.40 $\pm$ 0.548 <sup>a</sup>
	2.0–3.0 (C-C+)	3.69 $\pm$ 0.805 <sup>b</sup>
	3.0–4.0 (B-B+)	3.84 $\pm$ 0.657 <sup>c</sup>
	4.0 or more (A-A+)	4.08 $\pm$ 0.722 <sup>d</sup>
	Total	3.87 $\pm$ 0.705 <sup>**</sup>
Scheffe		d > b
General satisfaction: The courses of my department are suitable for me.	Less than 2.0 (D+-F)	2.60 $\pm$ 0.548 <sup>a</sup>
	2.0–3.0 (C-C+)	2.85 $\pm$ 0.697 <sup>b</sup>
	3.0–4.0 (B-B+)	3.05 $\pm$ 0.838 <sup>c</sup>
	4.0 or more (A-A+)	3.60 $\pm$ 0.884 <sup>d</sup>
	Total	3.15 $\pm$ 0.868 <sup>***</sup>
Scheffe		d > b, d > c
I feel that I am learning something valuable in my department.	Less than 2.0 (D+-F)	3.80 $\pm$ 0.447
	2.0–3.0 (C-C+)	3.48 $\pm$ 0.918
	3.0–4.0 (B-B+)	3.58 $\pm$ 0.818
	4.0 or more (A-A+)	3.84 $\pm$ 0.860
	Total	3.63 $\pm$ 0.846 <sup>*</sup>
I am satisfied with my department.	Less than 2.0 (D+-F)	3.20 $\pm$ 1.095 <sup>a</sup>
	2.0–3.0 (C-C+)	3.17 $\pm$ 0.785 <sup>b</sup>
	3.0–4.0 (B-B+)	3.36 $\pm$ 0.905 <sup>c</sup>
	4.0 or more (A-A+)	3.62 $\pm$ 0.990 <sup>d</sup>
	Total	3.40 $\pm$ 0.921 <sup>*</sup>
Scheffe		d > b

M: mean; SD: standard deviation; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$

**Table 3.** Academic achievement according to the course satisfaction of physical therapy students

	Detailed contents	Academic achievement	M ± SD
Course satisfaction	The curriculum of my department is overall well organized.	Less than 2.0 (D+-F)	3.20 ± 1.095
		2.0-3.0 (C-C+)	3.25 ± 0.783
		3.0-4.0 (B-B+)	3.34 ± 0.801
		4.0 or more (A-A+)	3.52 ± 0.851
		Total	3.37 ± 0.811
	My department professors have distinct educational goals and explain these clearly.	Less than 2.0 (D+-F)	3.40 ± 1.140
		2.0-3.0 (C-C+)	3.44 ± 0.639
		3.0-4.0 (B-B+)	3.45 ± 0.832
		4.0 or more (A-A+)	3.71 ± 0.811
		Total	3.51 ± 0.811
	My department professors have a profound knowledge of their area.	Less than 2.0 (D+-F)	4.00 ± 0.707
		2.0-3.0 (C-C+)	3.88 ± 0.878
		3.0-4.0 (B-B+)	3.89 ± 0.791
		4.0 or more (A-A+)	4.02 ± 0.734
		Total	3.92 ± 0.788
	The major exam is appropriate and is also helpful for study.	Less than 2.0 (D+-F)	3.40 ± 0.548 <sup>a</sup>
		2.0-3.0 (C-C+)	3.00 ± 0.792 <sup>b</sup>
		3.0-4.0 (B-B+)	3.17 ± 0.777 <sup>c</sup>
		4.0 or more (A-A+)	3.53 ± 0.985 <sup>d</sup>
		Total	3.24 ± 0.849 <sup>*</sup>
	There are proper opportunities to deepen my understanding of my major.	Less than 2.0 (D+-F)	3.60 ± 0.894
		2.0-3.0 (C-C+)	3.02 ± 0.804
		3.0-4.0 (B-B+)	3.06 ± 0.770
		4.0 or more (A-A+)	3.24 ± 0.964
Total		3.11 ± 0.830	
The contents of the major courses are varied.	Less than 2.0 (D+-F)	3.40 ± 1.140	
	2.0-3.0 (C-C+)	3.56 ± 0.802	
	3.0-4.0 (B-B+)	3.40 ± 0.747	
	4.0 or more (A-A+)	3.54 ± 0.823	
	Total	3.46 ± 0.779	

M: mean; SD: standard deviation; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001

## DISCUSSION

In this study, we examined academic achievement and major satisfaction, which can affect the formation of job concepts, of students from five physical therapy departments nationwide.

General satisfaction examined a student's interest and suitability for a major, the value of the major, and department satisfaction. Academic achievement was significantly different among students of different general satisfaction levels, and these correlations were greater than those for any other items in the correlation analysis. This is consistent with the research findings of Kim<sup>10)</sup>, which indicate that students who select their department based on their aptitude or interests have a higher satisfaction in major than those who do not. It is also consistent with the research findings

**Table 4.** Academic achievement according to the relationship satisfaction of physical therapy students

	Detailed contents	Academic achievement	M ± SD
Relationship satisfaction	Grades are fairly and carefully given.	Less than 2.0 (D+-F)	3.20 ± 1.643 <sup>a</sup>
		2.0-3.0 (C-C+)	3.33 ± 0.901 <sup>b</sup>
		3.0-4.0 (B-B+)	3.26 ± 0.804 <sup>c</sup>
		4.0 or more (A-A+)	3.62 ± 0.829 <sup>d</sup>
		Total	3.36 ± 0.848 <sup>**</sup>
	I can get professors' advice on course contents and how to study.	Less than 2.0 (D+-F)	3.20 ± 1.483
		2.0-3.0 (C-C+)	3.40 ± 0.891
		3.0-4.0 (B-B+)	3.37 ± 0.887
		4.0 or more (A-A+)	3.63 ± 0.977
		Total	3.44 ± 0.922
	There is proper guidance on careers after graduation.	Less than 2.0 (D+-F)	3.20 ± 1.304
		2.0-3.0 (C-C+)	3.21 ± 0.848
		3.0-4.0 (B-B+)	3.05 ± 0.838
		4.0 or more (A-A+)	3.30 ± 0.977
		Total	3.14 ± 0.885
	There is good communication between professors and students.	Less than 2.0 (D+-F)	3.40 ± 1.517
		2.0-3.0 (C-C+)	3.46 ± 0.917
		3.0-4.0 (B-B+)	3.23 ± 0.911
		4.0 or more (A-A+)	3.48 ± 0.877
		Total	3.33 ± 0.916

M: mean; SD: standard deviation; \* p < 0.05, \*\* p < 0.01; \*\*\* p < 0.001

of Sin et al.<sup>11)</sup>, which indicate that college and curriculum satisfaction affect class attitude and that ultimately, class attitude has a decisive effect on academic achievement. The research of Jo<sup>8)</sup> has also shown a relevant correlation between satisfaction in major and academic achievement; the academic achievement of students with high general satisfaction was found to be highest. This is consistent with the research findings of Park<sup>12)</sup>, which indicate that interest in major was a more important variable in determining satisfaction in major.

The sub-variables of satisfaction in major that impacted overall academic achievement had a significant impact on whether the career choice of an individual was in the field of their major. This is consistent with the results of Jo<sup>8)</sup>, who found that students with high general satisfaction got high academic scores in both cultural studies and their majors, and tended to select careers related to their major.

When satisfaction in major and academic achievement were analyzed together, the groups with generally high academic achievements showed statistically significant satisfaction in major. This shows the importance of the affective domain in addition to the cognitive domain in academic achievement. A study by Gwak<sup>13)</sup> included positive self-concepts, interest in subjects, maintaining good friendships with schoolmates, and motivation for learning as factors that affect an individual's performance, and subsequently impact what he/she generally does and feels. However, despite the importance of affective achievement, previous studies have

**Table 5.** Academic achievement according to the cognition satisfaction of physical therapy students

	Detailed contents	Academic achievement	M ± SD
Cognition satisfaction	I think that the department I belong to is a popular one.	Less than 2.0 (D+-F)	3.40 ± 1.140
		2.0-3.0 (C-C+)	3.54 ± 0.896
		3.0-4.0 (B-B+)	3.74 ± 0.768
		4.0 or more (A-A+)	3.84 ± 0.702
		Total	3.73 ± 0.780
	My parents would be proud of the department I belong to.	Less than 2.0 (D+-F)	4.20 ± 0.837
		2.0-3.0 (C-C+)	3.96 ± 0.766
		3.0-4.0 (B-B+)	3.95 ± 0.744
		4.0 or more (A-A+)	3.99 ± 0.841
		Total	3.96 ± 0.771
	Graduation from my department will work favorably for me.	Less than 2.0 (D+-F)	3.80 ± 0.837
		2.0-3.0 (C-C+)	3.75 ± 0.789
		3.0-4.0 (B-B+)	3.57 ± 0.791
		4.0 or more (A-A+)	3.59 ± 0.898
		Total	3.60 ± 0.818
	I proudly tell people about the department I belong to.	Less than 2.0 (D+-F)	3.80 ± 1.095
		2.0-3.0 (C-C+)	3.81 ± 0.768
		3.0-4.0 (B-B+)	3.82 ± 0.824
		4.0 or more (A-A+)	3.93 ± 0.832
		Total	3.85 ± 0.820
My department is good enough for me.	Less than 2.0 (D+-F)	3.80 ± 0.837	
	2.0-3.0 (C-C+)	3.62 ± 0.844	
	3.0-4.0 (B-B+)	3.65 ± 0.797	
	4.0 or more (A-A+)	3.91 ± 0.830	
	Total	3.71 ± 0.817	
Many people would like to come to the department I belong to.	Less than 2.0 (D+-F)	3.40 ± 1.140	
	2.0-3.0 (C-C+)	3.58 ± 0.776	
	3.0-4.0 (B-B+)	3.55 ± 0.810	
	4.0 or more (A-A+)	3.82 ± 0.801	
	Total	3.62 ± 0.813*	

M: mean; SD: standard deviation; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001

**Table 6.** Academic achievement according to the career exploration of physical therapy students

	Detailed contents	Academic achievement	M ± SD
	My current department is helpful with regard to career planning for after graduation.	Less than 2.0 (D+-F)	4.00 ± 0.707
		2.0-3.0 (C-C+)	3.83 ± 0.734
		3.0-4.0 (B-B+)	3.90 ± 0.761
		4.0 or more (A-A+)	4.10 ± 0.720
		Total	3.94 ± 0.749
	I will go to a graduate school with the same department after graduation.	Less than 2.0 (D+-F)	2.20 ± 1.643 <sup>a</sup>
		2.0-3.0 (C-C+)	2.73 ± 1.012 <sup>b</sup>
		3.0-4.0 (B-B+)	2.94 ± 1.047 <sup>c</sup>
		4.0 or more (A-A+)	3.49 ± 1.104 <sup>d</sup>
		Total	3.04 ± 1.097***
Career exploration	I will go to a graduate school with a different department after graduation.	Less than 2.0 (D+-F)	1.40 ± 0.548
		2.0-3.0 (C-C+)	2.40 ± 1.053
		3.0-4.0 (B-B+)	2.23 ± 1.022
		4.0 or more (A-A+)	2.48 ± 1.052
		Total	2.30 ± 1.037*
	I will get a job related to the department I belong to after graduation.	Less than 2.0 (D+-F)	4.60 ± 0.548 <sup>a</sup>
		2.0-3.0 (C-C+)	3.75 ± 0.926 <sup>b</sup>
		3.0-4.0 (B-B+)	4.09 ± 0.779 <sup>c</sup>
		4.0 or more (A-A+)	4.21 ± 0.786 <sup>d</sup>
		Total	4.08 ± 0.812**
I will get a job unrelated to the department I belong to after graduation.	Less than 2.0 (D+-F)	1.20 ± 0.447	
	2.0-3.0 (C-C+)	2.31 ± 1.020	
	3.0-4.0 (B-B+)	2.02 ± 0.927	
	4.0 or more (A-A+)	2.27 ± 1.243	
	Total	2.11 ± 1.056*	

M: mean; SD: standard deviation; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001

**Table 7.** Correlation between sub-satisfaction in major and academic achievement

	General satisfaction	Course satisfaction	Relational satisfaction	Cognition satisfaction	Career exploration
Academic achievement	0.253** (0.001)	0.123* (0.018)	0.092 (0.079)	0.073 (0.160)	0.107* (0.039)

\*\*p<0.01; \*p<0.05

principally focused on cognitive achievement as a study target variable; the educational objectives of a school are diverse, but a student’s cognitive achievement is clearer and simpler to objectively measure than his/her noncognitive achievement. Therefore, that study was limited in that it used a numerical indicator to score academic achievement; this numerical indicator was used to reliably measure cognitive achievement and aid statistical analysis.

In a review of the research relating to the learning of students majoring in physical therapy, Kim<sup>10)</sup> examined

satisfaction in major and academic achievement according to vocational personality types. Many students majoring in physical therapy were shown to belong to the “social type,” and students belonging to the social type showed generally high satisfaction in major. The research of Sin<sup>14)</sup> compared satisfaction in major in health-related departments in Busan and showed that students majoring in physical therapy showed higher satisfaction in major than those studying other health-related majors. As indicated above, there are relatively few studies on the factors affecting school life

status and satisfaction and the academic achievement of college students majoring in physical therapy. Therefore, it is hoped that the results of this study can be used as basis for satisfaction in major and academic achievement development programs for clinical physical therapists.

Furthermore, related topics should be actively discussed, and studies should be conducted to understand how to enable students to adapt well to school life and aid their career decisions. Future studies are also important because high satisfaction in major affects the formation of the correct beliefs and attitudes for employment after graduation.

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