

The influence of general characteristics of physical therapy students in regards to major satisfaction and academic achievement

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Objective: To examine the relations between satisfaction in major, academic achievement and five personality factors of physical therapy students.

Design: Questionnaire study.

Methods: In order for a complete enumeration when selecting study subjects, we selected five representative schools through raffles. For about three weeks from May 21st to June 16th 2012, we distributed self-administered questionnaires comprised of questions related to five personality factor characteristics, satisfaction in major and academic achievement. Total of 510 questionnaires were distributed and 442 questionnaires were returned. Except the rest is not answered or unanswered call 73 questionnaire collected data from the 369 call. And 369 questionnaires were used for analysis. The frequency analysis was conducted to examine general characteristics of subjects.

Results: In the analysis of differences in personality factors for each individual variable in accordance with sex, women had higher degree of neuroticism than men ($p < 0.05$). Also men showed higher openness than women ($p < 0.05$). In the analysis of differences in personality factors for each individual variable in accordance with age, the lower the age was, the higher the degree of neuroticism was ($p < 0.05$). For satisfaction in major, "Satisfaction in school life" and "Motive for selecting the major" were significant factors ($p < 0.05$). academic achievement, "School type" and "Motive for selecting the major" were significant factors ($p < 0.05$).

Conclusions: In regards to the satisfaction in major and academic achievement, "Motive for selecting the major" was the major significant factor. Students who had high interest in their majors expressed higher satisfaction, which in turn correlated with higher academic achievement.

Key Words: Academic achievement, Five personality factors, Physical therapy, Satisfaction

Introduction

As stable and professional jobs have been preferred since IMF in 1997 [1], the physical therapy course became one of the popular departments. Contrary to the rapid increase of fixed number of university students due to thoughtless foundation of universities with unclear education philosophies

depending on the temporary excessive demands of higher education, universities failed to show innovative attempts to have their own differentiated competitiveness, which caused the accelerated change to health affiliation which has advantages in recruiting an entrance quota [2]. And recently, the unemployment problem got serious with an economic recession so that the popularity of a health area in which find-

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ing a job is relatively easier was more increased. Thus universities also competitively started expanding departments related to a health area.

According to recommendations of World Confederation for Physical Therapy, however, the school system of physical therapy pursues 3-4 year system [3]. Also the government carries out a policy to reform the structure of universities by selecting insolvent universities every year since 2011. According to the valuation standard based on the index of low-rank universities in 2012, the employment rate (20%) and the reinforcement rate of enrolled students (30%) occupy 50% of the total items [4]. In the openness of markets and globalized competition, however, schools that create qualitative great results can survive, instead of schools that simply recruit students to just show more employment statistics [5]. Such a long-term evaluation is the matter of producing graduates who build up professional experiences as leading roles by viably exploring careers after graduation [6]. Universities feel pressured to satisfy not only academic values traditionally pursued, but also practical demands in accordance with social/economic changes [7]. Students also experience discordance between their personality and majors or tend to be maladjusted to majors due to dim employment prospect after focusing on success or failure, rather than considering their own ability, aptitude or interest [8]. The starting point or the attitude toward major between students following their aptitude and talent, and students selecting majors unrelated to themselves can be different [9]. Therefore, the degree of achievement can be shown differently in dependent on individual personality characteristics or environment despite of the same factors [10]. In such reasons, the personality characteristics, satisfaction in major and major achievement of physical therapy students become more essential.

Thus this study aims to examine the relations between personality types, satisfaction in major and academic achievement based on five personality factors of physical therapy students.

Methods

Subjects

This study was conducted with total 369 physical therapy students (2nd year: 146, 3rd year: 161, 4th year: 62) in five universities (college and university), located in Seoul, Daejeon, Jinju, Pohang and Gunsan.

In order for a complete enumeration when selecting study subjects, we selected five representative schools through raffles. For about three weeks from May 21st to June 16th 2012, we distributed self-administered questionnaires comprised of questions related to five personality factor characteristics, satisfaction in major and academic achievement. Out of 510 questionnaires distributed, total 442 questionnaires were collected. Excluding 73 questionnaires with insincere or no answers, 369 questionnaires were used for analysis.

Research tools and data collecting process

Five personality factors

This study is based on the questionnaires about five personality factors, satisfaction in major and academic achievement. The questionnaires used the adaptation (by Yoo *et al.*[11]) of International Personality Item Pool produced by Goldberg [12-16].

This scale can be measured by five factors of individual personality like neuroticism, extroversion, openness, agreeableness, conscientiousness, and it is comprised of total 50 questions (10 questions per each factor).

In the advanced research by Mun [17], the Cronbach's α was 0.78. The reliability coefficients of five personality factors shown in this study are like below (Table 1).

Satisfaction in major

We used the course evaluation survey form developed by Illinois University, Braskamp, Wise and the course evaluation survey form used by Hengstler (1979) to measure university students' satisfaction in major [18].

Table 1. Reliability coefficients of five personality factors

Factor	Question no.	No. of question	Cronbach's coefficient α
Neuroticism	1, 3, 4, 12, 21, 28, 31, 37, 38, 41	10	0.8652
Extroversion	2, 8, 13, 17, 22, 26, 32, 36, 44, 49	10	0.8625
Openness	5, 9, 14, 18, 23, 27, 33, 39, 43, 47	10	0.7853
Agreeableness	6, 10, 15, 19, 24, 29, 34, 40, 46, 48	10	0.7532
Conscientiousness	7, 11, 16, 20, 25, 30, 35, 42, 45, 50	10	0.7515
Total		50	0.8925

This test was adapted by Dong Jin Na (1985), and then Dae Woon Jang *et al.* (1986) composed 34 questions after dividing it into five factors. Among them, Ha [19] selected seven questions of general satisfaction factors and five questions of cognition satisfaction to measure the course [19].

Table 2. Reliability coefficients of satisfaction in major

Factor	Questions no.	No. of question	Cronbach's efficient
General satisfaction	1, 2, 3, 4, 5	5	0.8658
Course satisfaction	6, 7, 8, 9, 10, 11	6	0.8291
Relational satisfaction	12, 13, 14, 15	4	0.8330
Cognition satisfaction	16, 17, 18, 19, 20, 21	6	0.8780
Career exploration	22, 23, 24, 25, 26	5	0.6166
Total		26	0.9270

We used a questionnaire recomposed suitable for satisfaction in major, by Cho [6] with the rest questions except for school satisfaction.

In the advanced research by Cho [6], the Cronbach's α was 0.92. The reliability coefficients of satisfaction in major shown in this study are like below (Tables 2, 3).

Research tools and data collecting process

After explaining the purpose of the study from May 15th to June 13th 2012, we got the selected subjects' agreement. After distributing the recomposed questionnaires to subjects, we explained about them and then they filled out the self-administered questionnaires. Out of 510 questionnaires distributed, total 442 questionnaires were collected. Excluding questionnaires with insincere or no answers, total 369 questionnaires were used for analysis.

Table 3. Sub-items of satisfaction in major

Section	Contents of questions
General satisfaction	I am interested in the curriculum of my department. Major books are worthy to learn. The courses of my department are suitable for me. I feel that I am learning something valuable in my department. I am satisfied with my department.
Course satisfaction	The curriculum of my department is overall well-organized. My department professors have distinct education goals and explain in easy. My department professors have profound knowledge of their area. The major exam is given in proper amount and is also helpful for study. There are proper opportunities to deepen the major study. The contents of major course are variously composed.
Relational satisfaction	Grades are fairly and carefully given. I can get professors' advice on contents or how to study. There is proper guidance on career after graduation. There are communications between professors and students.
Cognition satisfaction	I think that the department I belong to is a popular one. My parents will be proud of the department I am belonging to. Graduation from my department would work favorably to me. I proudly tell people about the department I am belonging to. My department is good enough for me. Many people would like to come to the department I belong to.
Career exploration	The current department is helpful for the career after graduation. I will go to a graduate school with the same department after graduation. I will go to a graduate school with a different department after graduation. I will get a job related to the department I belong to after graduation. I will get a job unrelated to the department I belong to after graduation.

Academic achievement

The grades of the whole years from the 2nd year to 4th year (4 year system) and 3rd year (3 year system) were divided into A + , A, B + , B, C + , C, D + , D and F [20].

Data and statistical analysis

This study used PASW Statistics 18.0 (IBM Co., Armonk, NY, USA) program for analysis [21]. The frequency analysis was conducted to examine general characteristics of

Table 4. General characteristics of physical therapy students (N=369)

Background factor	Section	Respondent (n)	Percentage (%)
Sex	Male	171	46.3
	Female	198	53.7
Age	20-25	318	86.2
	26-30	42	11.4
	31-35	9	2.4
School type	4 year system	235	63.7
	3 year system	134	36.3
Grade	2nd year	146	39.6
	3rd year	161	43.6
	4th year	62	16.8
Satisfaction in school life	Very much dissatisfied	6	1.6
	Dissatisfied	69	18.7
	Average	183	49.6
	Satisfied	97	26.3
	Very much satisfied	14	3.8
Motive for selecting the major	Suitable for aptitude	60	16.3
	Suitable for interest	54	14.6
	Great job prospect	156	42.3
	Matching with scores	23	6.2
	Parents' and others' recommendations	68	18.4
	Others	8	2.8
Persons giving influence when selecting the major	Parents	141	38.2
	Teacher in charge	22	6.0
	Siblings	17	4.6
	Relatives	17	4.6
	Friends	17	4.6
	Own intention	144	39.0
	Others	11	3.0

subjects. In order to analyze the differences in satisfaction in major for each individual variable, t-test and ANOVA were carried out for sex, age, school type, grade, satisfaction in school life, motive for selecting the major and persons giving influence when selecting the major.

In order to analyze the differences in five personality factors for each individual variable and for each age group, ANOVA and t-test were conducted.

Results

General characteristics of research subjects

As general characteristics of physical therapy students, we examined sex, age, school type, grade, satisfaction in school life and persons giving influence when selecting the major. In sex, female subjects (198, 53.66%) were a little more than males (171, 46.34%) as the biggest age group was 20-25 (318, 86.18%) and the second big age group was

Table 5. Analysis of differences in five personality factors in accordance with sex (N=369)

Variable	Male (n=171)	Female (n=198)	t	p
Neuroticism	2.82 (0.658)	3.19 (0.489)	30.77	0.000
Extroversion	3.15 (0.597)	3.27 (0.625)	4.06	0.046
Openness	3.23 (0.500)	3.13 (0.586)	5.44	0.020
Agreeableness	3.40 (0.490)	3.39 (0.463)	0.03	0.855
Conscientiousness	3.39 (0.490)	3.10 (0.431)	0.03	0.855

Values are presented as mean (SD).

Table 6. Analysis of differences in five personality factors in accordance with age (N=369)

Section	20-25	26-30	31-35	F	p
Neuroticism	3.04 (0.647)	2.93 (0.720)	2.48 (0.851)	3.68	0.026
Extroversion	3.23 (0.599)	3.23 (0.514)	2.80 (0.464)	2.29	0.103
Openness	3.18 (0.486)	3.29 (0.474)	2.98 (0.389)	1.83	0.163
Agreeableness	3.39 (0.466)	3.45 (0.336)	3.13 (0.638)	1.74	0.176
Conscientiousness	3.15 (0.493)	3.31 (0.494)	3.26 (0.471)	2.25	0.106

Values are presented as mean (SD).

26-30 (42, 11.38%). In the school type, the students (235, 63.69%) belonged to 4 year system were about twice more than the students (134, 36.13%) belonged to 3 year system. In regard of grades, the 3rd year was the most (161, 43.63%), and then the 2nd year was the second most (146, 39.57%). For satisfaction in school life, the most answer was 'average' (183, 49.59%), and the second most answer was 'satisfied' (97, 26.29%). In the motives for selecting the major, the most answer was 'great job prospect' (156, 42.28%) which was twice more than the second most answer, 'parents' and others' recommendations' (68, 18.43%). For the persons giving influence when selecting the major, their own intention was the most (144, 39.02%), and the second most answer was parents (141, 38.21%) (Table 4).

Analysis of differences in personality factors in accordance with sex

In the analysis of differences in personality factors for each individual variable in accordance with sex, women had higher degree of neuroticism than men ($F=30.77, p < 0.001$). Also men showed higher openness than women ($F=5.44, p < 0.05$). In other words, women feel more depressed and nervous than men while men are more open to others than women (Table 5).

Analysis of differences in five personality factors in accordance with age

In the analysis of differences in personality factors for

Table 7. Satisfaction in major in accordance with general characteristics of physical therapy students (N=369)

Variable	Section	Respondent (n)	Mean (SD)	t/F	p
Sex	Male	171	3.572 (0.54670)	0.33	0.566
	Female	198	3.542 (0.45307)		
Age	20-25	318	3.554 (0.48856)	0.59	0.554
	26-30	42	3.604 (0.55549)		
	31-35	9	3.409 (0.58321)		
School type	4 year system	235	3.538 (0.49501)	0.84	0.361
	3 year system	134	3.587 (0.50014)		
Grade	2nd year	146	3.604 (0.49984)	1.14	0.321
	3rd year	161	3.519 (0.48318)		
	4th year	62	3.537 (0.53078)		
Satisfaction in school life	Very dissatisfied	6	2.958 (0.51998)	32.97	0.000
	dissatisfied	69	3.251 (0.39146)		
	Average	183	3.478 (0.39146)		
	Satisfied	97	3.866 (0.43902)		
	Very satisfied	14	4.172 (0.6118)		
Motive for selecting the major	Suitable for aptitude	60	3.745 (0.50825)	4.38	0.001
	Suitable for interest	54	3.603 (0.57581)		
	Great job prospect	156	3.522 (0.44224)		
	Matching with scores	23	3.242 (0.51605)		
	Parents' and others' recommendations	68	3.509 (0.47793)		
	Others	8	3.759 (0.51380)		
Persons giving influence when selecting the major	Parents	141	3.560 (0.48461)	1.01	0.419
	Teacher in charge	22	3.408 (0.61973)		
	Siblings	17	3.745 (0.52439)		
	Relatives	17	3.513 (0.47721)		
	Friends	17	3.450 (0.43587)		
	Own intention	144	3.559 (0.50471)		
Others	11	3.688 (0.37070)			

Table 8. Academic achievement in accordance with general characteristics of physical therapy students (N=369)

Variable	Section	Respondent (n)	Mean (SD)	t/F	p
Sex	Male	171	3.391 (0.66309)	3.26	0.0718
	Female	198	3.272 (0.60359)		
Age	20-25	318	3.325 (0.58655)	0.07	0.9279
	26-30	42	3.357 (0.77527)		
	31-35	9	3.277 (1.3254)		
School type	4 year system	235	3.406 (0.60943)	10.17	0.0016
	3 year system	134	3.190 (0.63528)		
Grade	2nd year	146	3.263 (0.65441)	1.96	0.1419
	3rd year	161	3.338 (0.63885)		
	4th year	62	3.451 (0.55596)		
Satisfaction in school life	Very dissatisfied	6	3.666 (0.81649)	2.26	0.0625
	Dissatisfied	69	3.224 (0.63324)		
	Average	183	3.292 (0.58181)		
	Satisfied	97	3.402 (0.59353)		
	Very satisfied	14	3.642 (1.1836)		
Motive for selecting the major	Suitable for aptitude	60	3.508 (0.57113)	2.35	0.0407
	Suitable for interest	54	3.453 (0.63890)		
	Great job prospect	156	3.291 (0.58738)		
	Matching with scores	23	3.282 (0.87679)		
	Parents' and others' recommendations	68	3.183 (0.65736)		
	Others	8	3.187 (0.65123)		
Persons giving influence when selecting the major	Parents	141	3.255 (0.70613)	1.29	0.2610
	Teacher in charge	22	3.227 (0.57169)		
	Siblings	17	3.264 (0.53378)		
	Relatives	17	3.588 (0.59253)		
	Friends	17	3.294 (0.61387)		
	Own intention	144	3.378 (0.58311)		
	Others	11	3.545 (0.56809)		

each individual variable in accordance with age, the lower the age was, the higher the degree of neuroticism was ($F=3.68, p < 0.05$). In other words, the higher the age is, the higher the tendency of sensitivity and concerns is. Other factors were not significant in accordance with age (Table 6).

Analysis of differences in satisfaction in major in accordance with general characteristics of physical therapy students

The higher the satisfaction in school life was, the higher the satisfaction in major was ($F=32.97, p < 0.001$). Also the students who applied for this major due to great job prospect or suitability for aptitude/interest showed high satisfaction

in major ($F=4.38, p < 0.001$) (Table 7).

Analysis of differences in academic achievement in accordance with general characteristics of physical therapy students

In the analysis of differences in academic achievement for each individual variable, students of four-year universities showed better school records ($F=10.17, p < 0.05$). Also the students who selected the major based on their aptitude or interest had high academic achievement ($F=2.35, p < 0.05$) (Table 8).

Discussion

This study examined five personality factors, satisfaction in major and academic achievement of physical therapy students. First, the summary of the study results for each research question is like below.

Women feel more depressed and nervous than men while men are more open to others than women. And the higher the age is, the higher the tendency of sensitivity and concerns is. In academic achievement for each individual variable, students of four-year universities showed better school records, also the students who selected the major based on their aptitude or interest had high academic achievement. Therefore, students enrolled according to the school score have been linked to the low life satisfaction with low academic achievement. If you have understand personality traits of students and teaching methods accordingly, and access to counseling students will feel more interested in the subject. And it will soon be linked to academic achievement.

In the relation of satisfaction in major in accordance with general characteristics, the satisfaction in major in accordance with aptitude and interest was statistically significant, which means that students who selected the major based on their aptitude and interest have high satisfaction in major. This accords with the study results by Cho [6], found that students with interest in major course showed high satisfaction in major.

Analysing differences in satisfaction in major for each grade after dividing sub-items of satisfaction in major into five items, none of them were significant, which means that satisfaction in major-general satisfaction, course satisfaction, relational satisfaction, cognition satisfaction and career exploration-does not show any differences in each grade.

The significance of this study is like below.

There have been various studies on satisfaction in major and academic achievement in accordance with university students' aptitude and interest [20,22,23]. However, this study determined the relations with personality as a factor that has influence on academic achievement and satisfaction in major of physical therapy students. This study also examined the satisfaction in major and academic achievement in the relation with personality characteristics. It is significant to provide a basic data that can raise the understanding about physical therapy students' satisfaction in major and academic achievement. Furthermore, this study will be a basic data as a predictive variable that predicts satisfactions in major

and academic achievement in accordance with students' personality and also raises satisfaction in major and academic achievement of physical therapy students. This study can possibly provide a basic data to develop/vitalize counseling/education programs for students with personality factors showing low satisfaction in major or low academic achievement. If individual personality factors, characteristics and professionalism/characteristics of department are properly combined together, it can bring in a synergy effect that can help us to move one step closer to the university goal which is to foster leading roles equipped with viability and professionalism.

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