Satisfaction with learning and life in physical therapy student: a 4 year longitudinal study

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Abstract. [Purpose] To examine the longitudinal satisfaction with learning and life according to gender over 4 years, from the first- to the fourth-year levels, in physical therapy students. [Participants and Methods] The participants were 41 males and 33 females enrolled in the International University of Health and Welfare in March 2016. Satisfaction levels were longitudinally assessed from the end of the first- to fourth-year levels using a visual analog scale. [Results] In the males, satisfaction with learning and life in the second year was significantly lower than that in the fourth year. The high and low satisfaction levels in the second year were related to the fourth-year satisfaction level. On the other hand, no significant differences were found during the 4 years in the females. However, satisfaction with life in the second and third years also reflects satisfaction with learning in the fourth year. [Conclusion] Our results suggest gender-related differences in the patterns of the longitudinal changes in satisfaction level. The levels of satisfaction with learning and life changed in the males. Satisfaction decreased significantly in the second year of university life. Thus, assistance from the second year is important. Among the female students, assistance for satisfaction with life is important.

Key words: Satisfaction with life, Satisfaction with learning, Longitudinal study

INTRODUCTION

Study hours and sleep duration were associated with depression during the outbreak of the coronavirus disease in physical therapy students who lost part-time work or had decreased work¹. Under such circumstances, it is important to understand the level of satisfaction in addition to mental aspects. In line with this, university teachers need to be aware of students’ satisfaction with learning and life.

A series of studies regarding students’ satisfaction with learning and life have been reported cross-sectionally²–⁵. Before the summer vacation in the first year, the level of satisfaction with learning was 65 points and that with life was 70 points, evaluated using a visual analog scale (VAS). There were no significant differences among university entry routes. Female students commuting from home reported significantly higher satisfaction with learning than those living alone³. At the end of the first half of the second year, satisfaction with learning was 60 points. At the end of the second half of the second year, the score was significantly reduced to 50 points. At the end of both the first and second half of the second year, satisfaction with life was 70 points³. In the three-year continuous cross-sectional observation survey from 2013, at the end of the second half of the third year the satisfaction with learning was 55 points and that with life ranged from 65 to 70 points. These scores for the three years were constant⁴. At the end of the second half of the fourth year, the satisfaction with learning was 55 points and that with life was 67 points⁵.
The three-year longitudinal influence was reported for second to fourth year undergraduates by gender. Satisfaction with learning significantly increased in the fourth year, and high satisfaction with life was maintained throughout the three-year period\(^6\).

However, longitudinal studies from the first to the fourth year have not been reported. Therefore, the purpose of the present longitudinal observation study was to examine the satisfaction with learning and life by gender, over four years.

**PARTICIPANTS AND METHODS**

The current study’s survey questionnaire was distributed to seventy-nine participants enrolled in the International University of Health and Welfare in May 2016. Seventy-four participants (41 males, age=19.4±2.0 years [mean±SD] and 33 females, age=19.2±2.0 years) completed the four-year observation survey. Five participants were excluded from the analysis (in the first and second years, one female student dropped out from each year; in the third and fourth years, one female student repeated the school year; consent was not obtained from one female participant). The study was approved by the institutional review board of the corresponding author’s university (Approval No. 17-Io-122). All data were treated with care to protect the participants’ privacy.

The registered survey was conducted in late January from the first to the third year and in mid-February in the fourth year. The reported satisfaction levels with learning and life were evaluated using a VAS. They were performed using a standard form based on previous studies\(^2–6\)). The participants indicated “not at all satisfied” on the left end or “extremely satisfied” on the right end of 100-mm straight line. All these sessions were conducted by the corresponding author. Specific explanations were not provided to participants regarding the level of satisfaction because the degree of satisfaction was subjective.

In the statistical analysis, the gender difference in satisfaction from the first to fourth year was analyzed using the Mann-Whitney test. The year-to-year comparison of satisfaction with learning and life by gender was analyzed using the Friedman test. Additionally, post hoc analysis was conducted with the Bonferroni method to determine the respective difference of each group compared with the others.

To examine the correlation between satisfaction from the first to the third and fourth years, correlation analysis was conducted using Spearman’s rank method. P<0.05 was considered statistically significant. All analyses were performed using IBM SPSS26.0 (IBM Corp., Armonk, NY, USA).

**RESULTS**

Satisfaction with learning and life by gender in each grade is shown in Table 1. There was no gender difference in all years for both learning and life satisfaction. In males, significant differences were found in learning and life satisfaction during the four years. In post hoc analysis, significant differences were found in satisfaction with learning between the second and fourth years (p<0.01) and the first and fourth years (p<0.05), and with life satisfaction between the second and fourth years (p<0.05). In females, no significant differences were found during the four years.

Table 2 shows the relationships between fourth year satisfaction and first, second, and third year satisfaction with learning and life by gender. In males, satisfaction with learning in the fourth year was significantly positively correlated with satisfaction with learning in the first (\(\rho=0.328\)), second (\(\rho=0.634\)), and third (\(\rho=0.503\)) years and that with life in the second (\(\rho=0.322\)) year. Satisfaction with life in the fourth year was significantly positively correlated with life in the second (\(\rho=0.357\)) and third

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**Table 1.** The satisfaction with learning and life by gender in each year

| Satisfaction level | Male (n=41) | Female (n=33) |
|-------------------|-------------|---------------|
| **Learning**      |             |               |
| First year        | 61 (48–75)\(^a\) | 63 (42–75)    |
| Second year       | 60 (44–72)\(^a\) | 57 (43–70)    |
| Third year        | 60 (47–74)  | 63 (43–70)    |
| Fourth year       | 70 (56–81)  | 67 (53–79)    |
| **Life**          |             |               |
| First year        | 74 (55–89)  | 70 (50–82)    |
| Second year       | 70 (58–79)\(^a\) | 66 (50–76)    |
| Third year        | 76 (51–85)  | 71 (56–81)    |
| Fourth year       | 81 (64–86)  | 74 (64–86)    |

Median (First quartile–Third quartile).
\(^a\)\(^p<0.01;\) Friedman test.
\(^p<0.05;\) Bonferroni test vs. Fourth year.

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**Table 2.** Relationships between fourth year satisfaction and first, second, and third year satisfaction with learning and life by gender

| Fourth year satisfaction | Male (n=41) | Female (n=33) |
|--------------------------|-------------|---------------|
| **Learning**             |             |               |
| First year satisfaction  | 0.328*      | 0.231         |
| Life                     | 0.217       | 0.270         |

**Life**

|                      | Male (n=41) | Female (n=33) |
|----------------------|-------------|---------------|
| Second year satisfaction | 0.634** | 0.560**       | 0.262 | 0.240 |
| Life                 | 0.322*      | 0.357*        | 0.426** | 0.363* |

|                      | Male (n=41) | Female (n=33) |
|----------------------|-------------|---------------|
| Third year satisfaction | 0.503** | 0.293         | 0.457** | 0.408* |
| Life                 | 0.210       | 0.438**       | 0.405* | 0.512** |

Spearman rank correlation coefficient. \(^*p<0.05;\) \(^**p<0.01.\)
learning and life interact with each other. Despite numerous psychological challenges, resilience stimulates positive aspects of psychological health in the students.7) Dyrbye LN, Power DV, Massie FS, et al.: Factors associated with resilience to and recovery from burnout: a prospective, multi-institutional study of US medical students. Med Educ, 2010, 44: 1016–1026. [Medline] [CrossRef]

In females, satisfaction with learning in the fourth year was significantly positively correlated with satisfaction with learning in the third year (ρ=0.457), and that with life in the second (ρ=0.426) and third years (ρ=0.405). Satisfaction with life in the fourth year was significantly positively correlated with that in the first (ρ=0.515), second (ρ=0.363), and third years (ρ=0.512) and that with learning in the third year (ρ=0.408).

DISCUSSION

We used participants of the longitudinal study to analyze the course of satisfaction. This is the first four-year longitudinal study that has identified sustained levels of satisfaction with learning and life by gender among physical therapy students. Among male students, significant differences were found in learning and life satisfaction during the four years, and significant differences were found in satisfaction with learning between the second and fourth years and between the first and fourth year. Further, significant differences were also found with life satisfaction between the second and fourth years in post hoc analysis. On the other hand, among females, no significant differences were found during the four years. Therefore, it is suggested that gender differences were found in the patterns of longitudinal change in satisfaction.

From the relationships among years (Table 2), satisfactions with learning for three years from the first to the third years were reflected in the satisfaction of the fourth year in males. However, satisfaction decreases significantly in the second year of university life, and assistance is crucial at this stage because the level of high and low satisfaction in the second year is related to the fourth year satisfaction in learning level.

On the other hand, in females, the satisfaction with life for three years from the first to the third years was reflected in the satisfaction of the fourth year; therefore, maintaining a level of satisfaction with life from the first year is important. The satisfaction with learning and life in the third year is related to another satisfaction, in addition to the corresponding satisfaction of the fourth year. The assistance offered toward maintaining satisfaction with life in the second and third years has a positive impact on satisfaction with not only life but also learning in the fourth year. This is because the satisfaction with life in the second and third years reflects in that of the fourth year.

The psychological aspect of satisfaction is vague. In this study, specific explanations were not provided to participants regarding the level of satisfaction. However, for the university students, the “learning” includes grades, classes, and learning environment. Moreover, the “life” includes friendships, club activities, part-time jobs, and living alone. Since there is a correlation between learning and life satisfaction, such a relation in satisfaction may indicate that the factors involved in learning and life interact with each other. Despite numerous psychological challenges, resilience stimulates positive aspects of psychological health in the students.7) Resilience is defined as the ability to withstand stressful events with adequate physical and psychological functioning8), and it correlates negatively with stress9, 10) and positively with life satisfaction11). These findings were supported by a study in China, where a relationship was found between resilience and satisfaction with life12).

The limitations of the study were that participants belonged to a single university, and data were collected through a self-reported VAS conducted by faculty members. Nevertheless, this four-year study was the first to identify sustained levels of satisfaction with learning and life among physical therapy students by gender.

Conflict of interest
The authors declare no conflicts of interest in this work.

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