



Original Article

Students' level of satisfaction with graduation research during the COVID-19 pandemic

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Abstract. [Purpose] We investigated the effects of the state of emergency declared following the spread of coronavirus disease on the level of satisfaction with graduation research. [Participants and Methods] The study included 320 students who graduated from a university in northern Tochigi Prefecture between March 2019 and 2022. Participants were categorized into the non-coronavirus group (graduation in 2019 and 2020) and the coronavirus group (graduation in 2021 and 2022). Levels of satisfaction with the content and rewards of graduation research were assessed using a visual analog scale. [Results] Levels of satisfaction with the content and rewards of graduation research were >70 mm in both groups and were significantly higher in females in the coronavirus group than in the non-coronavirus group. [Conclusion] The study highlights that despite the pandemic, educational engagement can improve students' satisfaction with graduation research.

Key words: Satisfaction, Graduation research, Coronavirus disease 2019 (COVID-19)

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INTRODUCTION

Healthcare college students are one of the most affected groups by self-quarantine due to Coronavirus disease 2019 (COVID-19)^{1, 2)}. After the outbreak of COVID-19, health deterioration in physical therapy students have been considered a health concern. Prolonged self-restraint due to the spread of COVID-19 has increased inactivity among physical therapy students, which had a multifaceted impact on physical condition and mental health^{3, 4)}.

Son et al. suggested a considerable negative impact of the COVID-19 pandemic on a variety of academic-, health-, and lifestyle-related outcomes³⁾. According to their findings, many students indicated difficulty concentrating on academic work due to various sources of distraction, and a heightened level of social isolation; thus, their stress and anxiety had increased due to the pandemic. Ishizaka et al. reported that study hours and sleep duration were associated with depression during the outbreak of the COVID-19 in physical therapy students who lost part-time work or had decreased work⁴⁾. Chesterton et al. indicated that online physiotherapy delivery during the COVID-19 pandemic produced low student satisfaction, leaving respondents feeling disadvantaged⁵⁾. However, Rossetini et al. reported that online teaching in entry-level Physiotherapy seems to be a feasible option to face COVID-19 pandemic, as satisfies students as well as face-to-face courses and leading to a similar performance⁶⁾.

To investigate the anxiety level experienced by physical therapy students in their college life as a result of activity restrictions imposed to limit the spread of the COVID-19 pandemic, Hirose et al. conducted an online questionnaire survey of 377 first to fourth-year students. They reported that the anxiety score regarding job hunting activity was significantly higher among the third- and fourth-year students than among the first- and second-year students⁷⁾.

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Fourth-grade undergraduate students must engage in graduation research, and in that context, the impact of COVID-19 has been serious. Lectures relating to graduation research were conducted in a large classroom and according to the necessary social distancing protocol.

The number of graduation studies conducted in 2018, 2019, 2020, and 2021 was 23, 22, 23, and 16, respectively. The faculty took steps to ventilate the laboratory frequently, sanitize hands, equipment, and instruments, wear masks, maintain physical distance, and increase research method options such as using online. Since 2018 (four years ago), the number of online surveys conducted each year was 0, 4, 5, and 2 surveys.

To understand how this declaration affects the level of satisfaction with the content and rewards of graduation research, we conducted a cross-sectional survey among fourth-year undergraduate students with the aim of examining the impact of the state of emergency declared following the outbreak of COVID-19 over the four-year period from 2019 to 2022, determined by the same survey method before and during the COVID-19 outbreak. This is the second effort following the previous study focusing on the impact of COVID-19 via a student satisfaction survey conducted in an observational study⁸). We hypothesized that the impact of the COVID-19 would reduce the satisfaction.

PARTICIPANTS AND METHODS

Participants in this cross-sectional study were 347 fourth-year physical therapy students who graduated from the International University of Health and Welfare, Otawara campus in Tochigi prefecture, in March of the years for four years from 2019 to 2022.

A total of 320 students were included in this study. Their average age was 22.1 ± 1.4 years old (mean \pm SD). Twenty-seven students were excluded from the study; among these, 12 students did not take the course and 15 students did not cooperate with this survey. The study was approved by the Ethics Committee of the International University of Health and Welfare (Approval No. 21-Io-1). The research design is an observational study.

The level of satisfaction with the activities of content and reward of graduation research was assessed using a visual analog scale (VAS). The survey, as part of the study covering the years 2019 to 2022, was carried out in mid-February each year, about one week before the national examination in the fourth grade, using a standard form based on previous studies⁸⁻¹⁰). The participants indicated “not at all satisfied” on the left end or “extremely satisfied” on the right end of 100-mm straight line. These all three 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.

Participants were divided into two groups: COVID and non-COVID. Those who graduated in 2021 and 2022 were placed in the COVID group (age: 22.1 ± 1.4 years, 92 males and 63 females), and those who graduated in 2019 and 2020 were placed in the non-COVID group (age: 22.1 ± 1.4 years, 86 males and 79 females).

In the statistical analysis, the level of satisfaction with the content and rewards of graduation research was compared between the groups using the Mann–Whitney test. $P < 0.05$ was considered statistically significant. All analyses were performed with IBM SPSS26.0 (IBM Corp., Armonk, NY, USA).

RESULTS

The two groups' VAS scores on satisfaction with content and rewards are presented in [Table 1](#). A significant difference was observed in the level of satisfaction with content and rewards of graduation research between them, with females in the COVID group showing significantly higher satisfaction in these two items than those in the non-COVID group.

DISCUSSION

The study objective was to examine the pandemic's impact on the level of satisfaction with the content and rewards of graduation research. In this study, there was no significant difference in the level of satisfaction with the content and rewards of graduation research between the two groups. However, the interquartile range of the level of satisfaction with the content of graduation research was 33 for the COVID group and 22 for the non-COVID group. In other words, there was a large variation in satisfaction level for the COVID group. This tendency was characteristic of males in particular ([Table 1](#)).

When interpreted from the median, with or without the spread of the COVID-19, the level of satisfaction with the content and rewards of graduation research was above 70 mm.

Therefore, even under conditions of infection restriction, if graduation research is practiced while taking appropriate measures, it is possible for both males and females to experience a high degree of satisfaction in their college life.

In the analysis results by gender, the level of satisfaction was significantly higher among females in the COVID group. This gender difference is one of the findings in this study. A previous study showed that the coping of expecting social support tends to be used more frequently by females, and it may be a characteristic feature of the Japanese¹¹). In this study, females also had better coping strategies than males when seeking help. Therefore, it is considered that females have higher satisfaction because they can ask their supervisors for help, even during stressful times due to the pandemic.

Table 1. The two groups' VAS scores on satisfaction with content and rewards

| | COVID | Non-COVID |
|---------------------------------------|------------|------------|
| Total | n=155 | n=165 |
| Satisfaction with | | |
| content of graduation research (mm) | 76 (58–91) | 72 (60–82) |
| rewarding of graduation research (mm) | 74 (58–89) | 70 (54–83) |
| Males | n=92 | n=86 |
| Satisfaction with | | |
| content of graduation research (mm) | 72 (53–90) | 72 (59–82) |
| rewarding of graduation research (mm) | 72 (54–90) | 71 (55–84) |
| Females | n=63 | n=79 |
| Satisfaction with | | |
| content of graduation research*(mm) | 77 (68–91) | 72 (61–82) |
| rewarding of graduation research*(mm) | 76 (62–89) | 70 (54–81) |

Median (first quartile–third quartile).

* $p < 0.05$.

VAS: visual analog scale; COVID: Coronavirus disease.

As mentioned above, this is the second effort following the previous study focusing on the impact of COVID-19 via a student satisfaction survey conducted in an observational study⁶). However, as pointed out in the previous study, certain limitations of this study should be noted. First, the survey using VAS may be less specific and require additional clarification. Second, the sample used was from one campus. Further studies are needed to determine the pandemic's effects.

Conflict of interest

The authors declare no conflicts of interest in this work.

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