A questionnaire survey of difficulties in clinical practice perceived by physical therapy students

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Abstract. [Purpose] We aimed to investigate the difficulties perceived by physical therapy students during clinical practice, and to identify the associated factors based on the results of our previous interview survey. We collected opinions from these students through a questionnaire survey. Furthermore, we analyzed the relationships between the difficulties perceived by physical therapy students during clinical practice and the students’ level of achievement at the end of their clinical practice. [Participants and Methods] The study included 176 students, who had completed comprehensive clinical practice during their fourth year, to rate the difficulties perceived by them on an 11-point scale from 0 to 10. [Results] There were 127 responses. Through exploratory factor analysis, 43 items representing 5 factors were selected: Factor 1, difficulties related to communication of behavioral improvement/relationship building; Factor 2, difficulty obtaining supportive guidance/having appropriate learning environments coordinated; Factor 3, difficulty organizing/expressing clinical reasoning for physical therapy; Factor 4, difficulty learning in the clinical practice environment; and Factor 5, difficulty managing patients/adapting to the environment. [Conclusion] Regardless of the level of achievement at the end of clinical practice, the students strongly perceived “Factor 2: difficulty obtaining supportive guidance/having appropriate learning environments coordinated”. The results identified the factors associated with the difficulties perceived by physical therapy students during clinical practice, thereby providing a basis for resolving such difficulties.

Key words: Physical therapy students, Clinical practice, Questionnaire survey

INTRODUCTION

In curricula for physical therapy education, clinical education is an important program that connects in-school education and clinical environment. Therefore, approximately 20% of the Japanese physical therapist education programs has been devoted to clinical education1). However, the material and human resources, which are needed for physical therapy students (PTSs) in clinical practice, are generally managed by clinical instructors (CIs) and many factors affecting student in clinical practice are outside the control of physical therapist education program2). Therefore, it is important that teachers of educational institutions and CIs collaborate with each other to achieve high-quality education. McCallum CA et al. reviewed clinical education research in physical therapy and reported that they couldn’t find enough evidence about factors of methods and quality for better clinical practice2). Thus, the lack of best clinical practice methods and indicators for evaluating the quality of educational programs may be one of the factors that makes difficulties in clinical practice.

In clinical practice, CIs are expected to play many important roles such as professional, andragogic, interpersonal and communications skills3). Nevertheless, it was a problem in Japanese clinical practice that CIs hasn’t been demanded for...
special trainings for clinical education. As for a problem of PTSs, Davis DS. reported that negative student behaviors include tardiness and lack of personal responsibility\textsuperscript{4}. Thus, clinical practice in physical therapy faces a variety of challenges.

Matsui et al. reported that PTSs and occupational therapy students (OTSs) in Japan perceived difficulties due to their insufficient academic performance/experience, health conditions, and relationships with CIs during clinical practice\textsuperscript{5}. Other studies revealed stress in PTSs and their strategies to cope with it during clinical practice\textsuperscript{6-7}. Based on these findings, CIs and teachers are expected to manage stress in students while considering factors increasing such stress and student characteristics.

In medical education, there are growing concerns over “medical student abuse”\textsuperscript{8-9}, and countermeasures against abuse during clinical practice are increasingly required. Student abuse has also been reported in clinical practice for PTSs and OTSs\textsuperscript{10}, revealing the necessity of improving the situation as an environment for clinical education. In such a situation, PTSs may face various difficulties during clinical practice.

We previously interviewed PTSs, who had completed clinical practice. We organized the obtained data as narrative records, and performed content analysis. As a result, we reported a wide range of difficulties perceived by these students during clinical practice in detail\textsuperscript{11}. However, as some opinions were divided among the students, the necessity of collecting more extensive opinions from students was suggested. Moreover, the levels of the difficulties perceived remained unclear. Therefore, in the present study, we examined the levels of difficulties perceived by PTSs during clinical practice and associated factors. We also analyzed the relationships between such difficulties and students’ levels of achievement at the end of clinical practice.

\section*{PARTICIPANTS AND METHODS}

We requested 3 physical therapy schools, adopting a 4 year educational curriculum in Japan, to cooperate with us in this study, and obtained cooperation from 2 universities and 1 vocational school. The participants were physical therapy students belonging to these educational institutions, who had completed comprehensive clinical practice. We included a total of 176 students. At the 1 university, we collected data for 2 school years. In three schools, comprehensive clinical practice was conducted for two periods of every 7 or 8 weeks, in all of which the education style of “clinical clerkship” was recommended. The study period was from December 2017 to August 2018.

The questionnaire was designed to clarify: 1. gender, 2. type of educational institution, 3. style of clinical practice (multiple answers allowed), 4. Level of achievement at the end of clinical practice, and 5. Difficulties perceived during clinical practice. As for ‘4. Level of achievement at the end of clinical practice’, the level immediately after clinical practice was rated, with the level at the time of school enrolment being 0 and that needed to perform basic physical therapy with a certain degree of advice being 10.

We created items for ‘5. Difficulties perceived during clinical practice’ based on 62 sub-categories of such difficulties from our previous interview survey\textsuperscript{11}. We reorganized each sentence without changing its semantic content, and corrected the end of it. To avoid monotonously presenting items all regarding difficulties, we organized data related to ‘guidance needed by students’ as 3 items, and added them. Thus, we created a total of 65 items, which were rated on an 11-point scale from 0: “Strongly disagree” to 10: “Strongly agree”. The 3 additional items were finally excluded from analysis. As ‘3. Style of clinical practice’ allowed multiple answers, we calculated the ratio of the number of responses to the number of participants. ‘4. Level of achievement at the end of clinical practice’ and the 62 items for ‘5. Difficulties perceived during clinical practice’ were scored on a scale from 0 to 10.

On exploratory factor analysis, we examined the ceiling and floor effects by calculating the mean and standard deviation score for each item, and confirmed the correlations among the items. Subsequently, we performed factor analysis, adopting the maximum likelihood method and promax oblique rotation solution. We calculated Cronbach’s $\alpha$ to confirm the reliability of the scale obtained through factor analysis, and examined its internal consistency. With the factors selected through factor analysis as subscales, we calculated subscale scores and, by dividing total scores by the numbers of items, mean values. Furthermore, the factor score was calculated by the regression method, and the t-test was used to compare the low level clinical practice achievement group with high level clinical practice achievement. Based on the mean values of the level of achievement at the end of clinical practice, we divided the participants into two groups.

For statistical processing, we used SPSS Statistics ver. 24 (IBM Corporation), with the significance level set at 5%.

We conducted this study according to a research plan approved by the Ibaraki Prefectural University of Health Science Ethics Committee (Approval number: 798).

We distributed the questionnaire and a document explaining the study objective, placed a lockable box for response collection in each educational institution, and collected responses, adopting the leaving method. We regarded a response to the questionnaire dropped into the collection box as consent from a participant to cooperate.

\section*{RESULTS}

Among the 176 students, who belonged to the consenting educational institutions, and had completed clinical practice, 143 responded (response rate: 81.3%). Excluding 16 with missing data, we obtained 127 valid responses (valid response rate: 72.2%).
Table 1 shows the participants’ basic attributes, styles of clinical practice, and levels of achievement at the end of clinical practice. The most common style of clinical practice was ‘Students have sufficient opportunities to communicate with patients other than their main cases, and assist with physical therapy for these patients’, being chosen by most, 90.6%, of the students. The mean level of achievement at the end of clinical practice was 6.7.

From the 62 items representing difficulties perceived by students during clinical practice, we excluded 4 items, where a ceiling effect was observed on calculating the mean and standard deviation. There was no item with a floor effect. Through exploratory factor analysis for the 58 other items, adopting the maximum likelihood method and promax rotation, we obtained initial eigenvalues, which supported the validity of a 5-factor structure based on the screen plot and an eigenvalue of 1. Accordingly, we performed factor analysis, adopting the maximum likelihood method and promax rotation, again for a 5-factor structure. We repeated this process with a factor loading of 0.35 or greater, limiting the number of items for each factor to 3 or more items, considering the interpretability of the factors. Excluding 15 items without a sufficient factor loading, we finally adopted 5 factors and 43 items. Table 2 shows the pattern and inter-factor correlation matrices we obtained through these analyses.

Factor 1 consisted of 15 items, and those with a greater factor loading regarded behavioral improvement and feedback. Attributing the difficulty of communicating with CIs to unestablished student-CI relationships, we named Factor 1 “difficulties related to communication of behavioral improvement/relationship building”. Factor 2 consisted of 12 items, revealing negative judgment by CIs, their insincere attitudes, and students’ difficulty having appropriate learning environments coordinated. Therefore, we named this factor “difficulty obtaining supportive guidance/having appropriate learning environments coordinated”. Factor 3 consisted of 8 items, representing difficulties related to clinical reasoning for physical therapy, such as identifying problems, setting goals, and creating treatment plans for patients, as well as difficulty expressing one’s opinions. Therefore, we named this factor “difficulty organizing/expressing clinical reasoning for physical therapy”. Factor 4 consisted of 4 items, representing difficulties in appropriately communicating with patients and learning in clinical environments. Therefore, we named this factor “difficulty learning in the clinical practice environment”. Lastly, Factor 5 consisted of 4 items, representing difficulties in appropriately treating patients, managing them according to changes in their conditions, and adapting to the environment. Therefore, we named this factor “difficulty managing patients/adapting to the environment”.

The goodness of fit of this model was $\chi^2=913.17$ ($p<0.01$), with a cumulative contribution rate of 46.6%. Cronbach’s $\alpha$ for the reliability of all of the 43 items, representing the difficulties perceived by the students during clinical practice, was 0.913. Table 2 shows the reliability coefficient for each factor. Although the internal consistency of Factors 4 and 5 was not sufficient, as the coefficients were limited to 0.6 and 0.68, respectively, we also adopted these factors, placing importance on them to understand the difficulties perceived by students.

For each of the 5 factors selected through factor analysis, we calculated the subscale score and mean value by dividing the total score by the number of items, as shown in Table 3. “Factor 2: difficulty obtaining supportive guidance/having appropriate learning environments coordinated” achieved the highest mean subscale score.

Table 1. Participants’ basic attributes, styles of clinical practice, and levels of achievement

| Statement | Answer choice | N (%) |
|-----------|---------------|-------|
| 1. Gender | Male          | 68 (53.5) |
|           | Female        | 59 (46.5) |
| 2. Type of educational institution | University | 111 (87.4) |
|           | Vocational school | 16 (12.6) |
| 3. Style of clinical practice (multiple answers allowed) | Clinical clerkships | 25 (19.7) |
|           | Students and CIs assess and treat patients together. | 97 (76.4) |
|           | Students are in charge of main cases, and assess and treat these patients independently. | 75 (59.1) |
|           | CIs provide feedback for students based mainly on daily notes and case reports. | 81 (63.8) |
|           | CIs correct students’ skills on the spot when they treat patients. | 81 (63.8) |
|           | Students are allowed to freely observe other patients, except when they treat their main cases. | 96 (75.6) |
|           | Students have sufficient opportunities to communicate with patients other than their main cases, and assist with physical therapy for these patients. | 115 (90.6) |
|           | CIs do not provide guidance based on case reports or daily notes. | 25 (19.7) |
| 4. Level of achievement at the end of comprehensive clinical practice (0–10) | mean ± SD | 6.7 ± 1.5 |
|           | (Minimum–Maximum) | (2–10) |
Table 2. Pattern and inter-factor correlation matrices summarizing the difficulties perceived by physical therapy students

| Factor name (Cronbach's α)                                                                 | Factor loading |
|------------------------------------------------------------------------------------------|----------------|
| **Factor 1: difficulties related to communication of behavioral improvement/relationship building (α=0.87)** |
| Q1 It is confusing for students to be provided with behavioral advice at the end of clinical practice, because it is difficult for them to improve their behavior. | 0.78     |
| Q2 It is difficult for students to determine appropriate timings for asking questions to or consulting with CIs. | 0.62     |
| Q3 It is embarrassing for students to be provided with feedback in the presence of others. | 0.56     |
| Q4 It is confusing for students to be asked back when they ask questions to CIs. | 0.55     |
| Q5 It is difficult for students to speak to CIs or other staff members in a quiet atmosphere. | 0.53     |
| Q6 It is confusing for students to have several staff members in charge of clinical instructions, because they don't know who to consult with and what to consult about. | 0.52     |
| Q7 It is difficult for students to improve their behavior and attitudes for clinical practice without detailed behavioral guidance. | 0.52     |
| Q8 Students feel distressed when they need to reflect on and ask questions about what they have observed. | 0.49     |
| Q9 It is difficult for students to appropriately communicate with CIs and establish favorable relationships with them. | 0.47     |
| Q10 It is difficult for students to continue to actively participate in clinical practice after feeling depressed due to strict guidance provided by CIs. | 0.46     |
| Q11 It is difficult for students to fulfill behavioral requirements and rules, which vary among clinical practice facilities. | 0.45     |
| Q12 It is difficult for students to make observation schedules and obtain permission for observation from PTs in charge. | 0.40     |
| Q13 It is difficult for students to appropriately converse and communicate with patients. | 0.38     |
| Q14 It is difficult for students to correct their assessment/treatment skills at times other than the moments when they use these skills for patients. | 0.37     |
| Q15 Students feel uncomfortable when CIs stand close and watch them, as this makes them tense. | 0.36     |

| **Factor 2: difficulty obtaining supportive guidance/having appropriate learning environments coordinated (α=0.81)** |
| Q16 It is inappropriate for CIs to negatively judge students' characters and impressions. | 0.00     |
| Q17 It is inappropriate for students to have a reduced sleep time due to heavy burdens of submitting daily notes and reports. | 0.02     |
| Q18 It is inappropriate for CIs to show insincere attitudes toward students' questions and tasks. | 0.06     |
| Q19 It is difficult for students to determine the extent to which they can practice based on their own judgment when CIs are absent. | -0.08    |
| Q20 Students expect CIs not only to respect their opinions, but also provide advice for them from the perspective of CIs. | -0.44    |
| Q21 It is confusing for students to have delays in clinical practice due to unexpected discharge. | 0.08     |
| Q22 Students expect CIs to coordinate holidays for both parties, and let them know schedules early. | 0.01     |
| Q23 It is difficult for students to detect changes in patients' conditions unlike CIs, because they still lack such focuses and senses. | 0.04     |
| Q24 It is inappropriate to provide therapeutic interventions without confirming consistency between students' and CIs' ideas and treatment policies. | 0.11     |
| Q25 It is difficult for students to consult with CIs before organizing their opinions and questions. | -0.07    |
| Q26 It is confusing for students when criticized for something individual students cannot manage or not directly related to physical therapy. | 0.09     |
| Q27 Students feel confused on whether their commitments without sufficient knowledge and skills truly benefit patients. | -0.06    |
| Factor name (Cronbach’s α) | Factor loading |
|---------------------------|---------------|
| Factor 3: difficulty organizing/expressing clinical reasoning for physical therapy (α=0.83) | |
| Q28 It is difficult for students without sufficient knowledge of diseases to conduct assessment and set goals for patients. | -0.22 -0.07 0.77 0.19 0.06 |
| Q29 It is difficult for students to create detailed plans, with priority and time allocation in each physical therapy program taken into account. | -0.02 -0.03 0.69 -0.04 -0.01 |
| Q30 It is difficult for students to express their desires and requests during observation. | 0.02 -0.04 0.68 -0.38 0.06 |
| Q31 It is difficult for students to identify patients’ problems by connecting the results of examination, measurement, and observation. | 0.01 0.06 0.66 0.23 -0.20 |
| Q32 It is difficult for students to express their own opinions in writing, and clearly convey these opinions to CIs through theorized reports. | 0.09 0.14 0.54 -0.05 -0.02 |
| Q33 It is difficult for students to accurately express their opinions with words, and clearly convey them to CIs. | 0.29 0.00 0.53 -0.19 -0.10 |
| Q34 It is difficult for students lacking basic knowledge to assess patients and identify the causes of their problems. | 0.14 0.38 0.47 -0.07 -0.20 |
| Q35 It is difficult for students lacking senses that are achievable through the experience of treatment to detect changes in patients’ conditions. | 0.06 0.29 0.39 0.18 -0.05 |
| Factor 4: difficulty learning in the clinical practice environment (α=0.6) | |
| Q36 It is difficult for students to sufficiently communicate with patients in hospitals, where there are many patients, and limited timeframes are allocated to physical therapy. | 0.03 -0.06 -0.20 0.58 0.06 |
| Q37 It is confusing for students to appropriately manage patients’ anxiety and/or negative statements. | -0.06 0.05 0.15 0.50 0.20 |
| Q38 It is difficult for students to acquire necessary knowledge, and sufficiently absorb it during clinical practice. | 0.37 -0.22 0.08 0.38 0.05 |
| Q39 It is difficult for students to obtain feedback that helps them organize their thoughts and deepen their understanding at appropriate times. | 0.09 -0.09 0.24 0.37 0.09 |
| Factor 5: difficulty managing patients/adapting to the environment (α=0.68) | |
| Q40 It is difficult for students to appropriately treat pediatric patients and patients with dementia. | -0.21 -0.01 -0.13 0.13 0.81 |
| Q41 It is difficult for students to establish favorable relationships with patients and their families. | 0.14 -0.18 0.13 0.12 0.51 |
| Q42 It is difficult for students to flexibly change programs according to changes in patients’ conditions. | -0.16 0.12 0.25 0.28 0.48 |
| Q43 It is difficult for students to adapt to the atmosphere and environment during their first clinical practice. | 0.22 0.44 -0.25 -0.08 0.46 |

Inter-factor correlation matrix

| Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 |
|----------|----------|----------|----------|----------|
| Factor 1 | 1        |          |          |          |
| Factor 2 | 0.27     | 1        |          |          |
| Factor 3 | 0.54     | 0.40     | 1        |          |
| Factor 4 | 0.36     | 0.23     | 0.41     | 1        |
| Factor 5 | 0.34     | 0.23     | 0.38     | 0.18     | 1        |
were significantly higher in the low-achievement-level group than in the high-achievement-level group.

In a study by Seki et al.\(^{12}\), affirmative/supportive guidance was also reported to promote students’ satisfaction with clinical practice. Thus, CIs are expected to provide affirmative/supportive guidance for students.

To clarify the characteristics of five factors, we compared the factor scores of the two groups of the different achievement levels at the end of clinical practice. On comparing the low-achievement-level group and high-achievement-level group, the former’s score was significantly higher in Factor 1, 3, 5.

As previously mentioned, “Factor 2: difficulty obtaining supportive guidance/having appropriate learning environments coordinated” achieved the highest mean value of subscale scores, indicating that students tend to perceive such difficulty, regardless of their levels of achievement. Cole et al. noted the necessity of respecting students and their opinions to strengthen their learning experiences\(^{13}\), and this is consistent with findings of the present study, where students sought supportive guidance. Furthermore, when considering that learning environments and communication are effective clinical education approaches\(^{4}\), coordinating learning environments and actively communicating with students may be indispensable roles of CIs.

On the other hand, factor scores for “Factor 1: difficulties related to communication for behavioral improvement/relationship building” were significantly higher in the low-achievement-level group than in the high-achievement-level group.

### Table 3. Subscale scores and factor scores in the low- and high-achievement-level groups obtained through factor analysis

| Subscale score                                                                 | Total (n=127) | Low-achievement-level group (n=51) | High-achievement-level group (n=76) |
|--------------------------------------------------------------------------------|---------------|------------------------------------|------------------------------------|
| Mean ± SD                                                                       | Mean ± SD     | Mean ± SD                          | Mean ± SD                          |
| Factor 1: difficulties related to communication of behavioral improvement/relationship building | 5.17 ± 1.54   | 0.23 ± 0.86                        | −0.15 ± 0.97                       |
| Factor 2: difficulty obtaining supportive guidance/having appropriate learning environments coordinated | 7.24 ± 1.17   | 0.1 ± 1.01                         | −0.07 ± 0.88                       |
| Factor 3: difficulty organizing/expressing clinical reasoning for physical therapy | 6.26 ± 1.49   | 0.27 ± 0.89                        | −0.18 ± 0.94                       |
| Factor 4: difficulty learning in the clinical practice environment              | 5.09 ± 1.49   | 0.16 ± 1.01                        | −0.11 ± 0.8                        |
| Factor 5: difficulty managing patients/adapting to the environment             | 6.33 ± 1.64   | 0.24 ± 0.74                        | −0.16 ± 0.96                       |

**p<0.01, *p<0.05.

The high score for Factor 2 suggests that students regard CIs not adopting supportive attitudes toward students or not coordinating appropriate learning environments for them as problematic. In a study by Seki et al.\(^{12}\), affirmative/supportive guidance was also reported to promote students’ satisfaction with clinical practice. Thus, CIs are expected to provide affirmative/supportive guidance for students.

**DISCUSSION**

When asked about the style of clinical practice, 90.6% of all students chose ‘Students have sufficient opportunities to communicate with patients other than their main cases, and assist with physical therapy for these patients’, indicating that most students had sufficient opportunities to treat various patients. Based on this, it is likely that the current style enables students to acquire the experience of treating patients as a focus of clinical practice. ‘Students and CIs assess and treat patients together’ and ‘Students are in charge of main cases, and assess and treat these patients independently’ achieved answer rates of 76.4% and 59.1%, respectively. These two items apparently conflict with each other, but there were students, who simultaneously chose them. This may be explained by the fact that some students participated in clinical practice at multiple facilities, adopting different styles of clinical practice, or the style varied depending on the period.

Through factor analysis for the 62 items representing ‘difficulties perceived by students during clinical practice’, “Factor 1: difficulties related to communication of behavioral improvement/relationship building”, “Factor 2: difficulty obtaining supportive guidance/having appropriate learning environments coordinated”, “Factor 3: difficulty organizing/expressing clinical reasoning for physical therapy”, “Factor 4: difficulty learning in the clinical practice environment”, and “Factor 5: difficulty managing patients/adapting to the environment” were selected.

On calculating the mean subscale score by dividing the total score for each factor by the number of items, Factor 2 achieved 7.24, the highest mean value. As this factor included items regarding ‘negative/insincere attitudes toward students (Q16, Q18, Q26)’ and ‘difficulty having tasks adjusted or appropriate learning environments coordinated (Q17, Q21, Q22)’, we named this factor “difficulty obtaining supportive guidance/having appropriate learning environments coordinated” deeming it to represent students’ expectations from CIs. The high score for Factor 2 suggests that students regard CIs not adopting supportive attitudes toward students or not coordinating appropriate learning environments for them as problematic.

Table 3 shows the results of calculating the factor scores and the results of t-test between the high-level-achievement group (7–10) and low-achievement-level group (2–6) at the end of clinical practice. The factor scores for “Factor 1: difficulties related to communication of behavioral improvement/relationship building”, “Factor 3: difficulty organizing/expressing clinical reasoning for physical therapy”, and “Factor 5: difficulty managing patients/adapting to the environment” were significantly higher in the low-achievement-level group than in the high-achievement-level group.

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As previously mentioned, “Factor 2: difficulty obtaining supportive guidance/having appropriate learning environments coordinated” achieved the highest mean value of subscale scores, indicating that students tend to perceive such difficulty, regardless of their levels of achievement. Cole et al. noted the necessity of respecting students and their opinions to strengthen their learning experiences\(^{13}\), and this is consistent with findings of the present study, where students sought supportive guidance. Furthermore, when considering that learning environments and communication are effective clinical education approaches\(^{4}\), coordinating learning environments and actively communicating with students may be indispensable roles of CIs.

On the other hand, factor scores for “Factor 1: difficulties related to communication for behavioral improvement/rela-
ship building”, “Factor 3: difficulty organizing/expressing clinical reasoning for physical therapy”, and “Factor 5: difficulty managing patients/adapting to the environment” were significantly higher in the low-achievement-level group, revealing their greater sense of difficulty in these areas. Conversely, the level of achievement may have been higher among students, who did not develop such a sense, established favorable interpersonal relationships through smooth communication in the clinical practice environment, and were able to identify patients’ problems. Factor 3 consists of items regarding difficulties in ‘identifying problems, creating physical therapy plans, and setting goals for patients (Q28, Q29, Q31, Q34, Q35)’ and ‘expressing one’s opinions/ideas (Q30, Q32, Q33)’. The low-achievement-level group may have perceived difficulty in developing/expressing their clinical reasoning to assess patients and create physical therapy plans for them, suggesting that the experience of identifying and understanding patients’ problems promotes students’ levels of achievement at the end of clinical practice. Clinical reasoning, integrity, and honesty, which were defined by Davis4) as professional skills needed by physical therapists, are important elements of physical therapy education. Many CIs use instructor-designed materials to teach clinical reasoning15), but it may also be necessary to address this area of in-school education, in order to reduce students’ sense of difficulty during clinical practice. As the importance of reflective and critical thinking was also noted in a previous study16), such thinking should be promoted throughout the physical therapy education curriculum.

As study limitations, the students had participated in clinical practice at multiple facilities, and some of them simultaneously chose conflicting styles of clinical practice in the questionnaire. This consequently made it difficult for us to clarify the relationship between difficulties during clinical practice and its styles. Furthermore, involving only 3 educational institutions, the results of the present study may be limited.

With a revision of the regulations for the designation of physical/occupational therapy schools13) in April 2020, the model core curriculum17) began to recommend clinical clerkships. The curriculum emphasizes the importance of practicing physical therapy approaches developed by medical teams under CI supervision and guidance. In the present study, students’ answers for ‘3. Style of clinical practice’ confirmed that CIs provide opportunities for students to acquire hands-on experience. Therefore, it may be important to help students accumulate such experiences, and acquire skills through clinical practice.

During clinical practice, students experience new events and sensations. They may naturally face some learning difficulties to overcome. Overcoming such difficulties under CI guidance, and realizing that they have become able to identify patients’ problems and detect changes in patients’ conditions may also positively influence students’ levels of achievement. In order to help them participate in clinical practice more smoothly, CIs are also expected to coordinate appropriate learning environments, and provide supportive guidance.

**Conflict of interest**

The authors declare no conflicts of interest.

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