



Original Article

Contents of supervision needed by physical and occupational therapists for ability development: focusing on their clinical experience

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Abstract. [Purpose] This study examined the contents of supervision needed by novice therapists to develop clinical abilities, focusing on their clinical experience and using an original evaluation table. [Subjects and Methods] An evaluation of clinical abilities basic attitudes, therapeutic skills, and clinical practice-related thoughts was conducted in 29, 21, and 9 therapists with clinical experience of 0–1 (1 year group), 1–2 (2 years group), and 2–3 (3 years group) years, respectively. [Results] There were no significant differences among the 3 groups in basic attitudes. Therapeutic skills markedly varied between the 1 and 3 years groups. In clinical practice-related thoughts, significant differences were observed between the 1 and 3 years groups and between the 2 and 3 years groups. [Conclusion] It may be appropriate for educators to provide technical education regarding skills that are achievable for students in the early stages in consideration of applied movements. Also, education for novices should be provided with importance attached to abilities influenced by clinical experience.

Key words: Ability development, Supervision, Clinical experience

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INTRODUCTION

With the recent advancement of medical technologies and enhancement of patients' awareness of medical services, the necessity for therapists to improve the quality of their services is consistently increasing¹⁾. However, the basic scholastic ability of those desiring to be admitted into training schools is decreasing every year, resulting in decreases in the quality of therapists, particularly their abilities, and this is regarded as a challenge to be addressed²⁾. As of 2010, the majority of the members of the Japanese Physical Therapy Association were young therapists in their 20s or 30s³⁾, and this suggests the possibility of insufficient provision of education due to lack of supervising therapists, leading to a decrease in the quality of therapists. In 2005, the minimum pre-graduation education goal specified in the Physical Therapy Education Guidelines was changed from "becoming able to perform basic physical therapy" to "becoming able to perform basic physical therapy with some advice and supervision"⁴⁾. Furthermore, according to a survey to examine the status of clinical services provided by novice physical therapists immediately after graduation, such therapists independently implement their duties only on limited occasions, and need advice from supervisors³⁾. Based on this, physical therapists immediately after certification possibly lack sufficient clinical abilities, requiring postgraduate education, such as that provided by staff at facilities they belong to and participation in training seminars, as essential approaches.

In other professional areas, for example, in physician education, the provision of 2 years of postgraduate clinical training

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has become compulsory, and the goals of such training have been determined⁵). Postgraduate training goals and guidelines on supervision have also been established in nursing education⁶). Based on the results of qualitative studies examining behavioral goals that must be met by physical therapists before graduation from training schools and those for clinical supervisors, clinical evaluation scales have been developed in the United States, and studies on them have been reported^{7, 8}). The American Physical Therapy Association has set professionalism-related goals as “core values,” and evaluation tables corresponding to them are available^{5, 9}). In some reports, it has been recommended that final goals should be shown to promote self-directed learning based on adult learning theories¹⁰); for continuous provision of specialized education in particular, goal setting is necessary.

However, goals for therapists after certification have not yet been determined. In addition, the decreases in the quality of therapists have recently been so serious that supervision is needed for novice therapists in extensive areas, such as basic attitudes, therapeutic skills, and clinical practice-related thoughts. The authors previously conducted interviews and questionnaires in therapists with experience supervising other therapists to examine the abilities necessary to independently implement duties as a therapist¹¹); in these surveys, semistructured interviews were conducted to extract such abilities using a qualitative, inductive study method¹²), which were followed by 2 self-administered questionnaires, adopting the Delphi technique, to determine highly needed abilities for independent implementation of duties. Subsequently, based on the results, a clinical ability evaluation table (evaluation table) was developed, and its reliability was confirmed (Table 1). This paper reports the results of a study that used this evaluation table to examine the contents of supervision needed by novice therapists for ability development.

SUBJECTS AND METHODS

Therapists working in hospitals were asked to evaluate the clinical abilities (basic attitudes, therapeutic skills, and clinical practice-related thoughts) of those under their supervision, using the evaluation table, which had been developed with 55 items extracted as abilities necessary for therapists to independently implement their duties. On evaluation, a 5-point rating method was adopted (total score: 0 to 220): 0=being inappropriate for implementation; 1=being unable to understand or adopt appropriate actions even under monitoring or supervision; 2=being able to understand and adopt appropriate actions to a certain extent under monitoring and supervision; 3=being able to accurately understand and adopt appropriate actions under monitoring and supervision; and 4=being able to accurately understand and adopt appropriate actions without supervision.

Therapists who belonged to 4 medical facilities, which were located in the Tokai area, and consented to cooperate with the study were studied. One and 4 of the study facilities specialized in acute and acute to post-acute care (including outpatient and visiting rehabilitation services), respectively. The inclusion criteria were as follows: (1) therapists targeted for evaluation: those with experience of less than 3 years after certification; and (2) supervisors: those with 3 or more years of experience who were supervising targeted therapists daily. As ethical considerations, the participants were provided with oral or written explanations regarding this study, and their participation in it was regarded as their consent.

For statistical analysis, Predictive Analytics Software (PASW) Statistics 18.0 was used. Scores for items related to basic attitudes (10; 76 points), therapeutic skills (20; 80), and clinical practice-related thoughts (16; 64) were converted to percentage. To compare the means of experience-based groups (1 year group: 29 therapists with 0–1 year of clinical experience; 2 years group: 21 therapists with 1–2 years of clinical experience; and 3 years group: 9 therapists with 2–3 years of clinical experience), one-way analysis of variance and Tukey-kramer multiple comparisons were performed. The significance level was set at 5%. This study was conducted with the approval of the Ethics Committee of Fujita Health University (13-254).

RESULTS

On comparison of scores for the 55 evaluation items focusing on clinical experience, there were no significant differences in those for basic attitudes-related items among the 3 groups, while those for therapeutic skills-related items markedly varied between the 1 and 3 years groups. In scores for clinical practice-related thoughts-related items, significant differences were observed between the 1 and 3 years groups and between the 2 and 3 years groups. On comparison of scores among the items in each group, there were marked differences between those related to basic attitudes and clinical practice-related thoughts in the 1 and 2 years groups. On comparison of scores among basic attitudes-related items, significant differences were observed between “appropriately implementing reporting, communication, and consultation procedures” and “identifying problems that are difficult to independently address” (Table 2). On comparison of scores among therapeutic skills-related items, there were marked differences among “adopting appropriate measures to manage sudden changes in patients’ conditions,” “appropriately dealing with individual patients in consideration of their symptoms,” “appropriately listening to patients and their families to clarify their needs,” “having medical knowledge necessary for a therapist,” and “appropriately evaluating muscle tone.” On comparison of scores among clinical practice-related thoughts-related items, significant differences were observed among “clarifying individual patients’ general characteristics,” “identifying individual patients’ possible risks,” “logically examining the causes of problems in movements or activities of daily living,” “developing treatment programs to achieve goals,” “appropriately managing risks related to medical accidents,” “providing appropriate range-of-motion training,” “providing appropriate assistance and guidance for the maintenance of standing positions, standing from a seat, transfer, and gait training,” and “continuously evaluating patients in the progress of treatment” (Table 3).

Table 1. Postgraduate evaluation table for physical and occupational therapists

Evaluation items
Basic attitudes
Dressing appropriately as a member of society
Using appropriate language as a member of society
Adhering to appointed times and deadlines
Complying with rules in the workplace
Understanding the role and duties of a therapist as a team member
Adopting appropriate actions in consideration of the role of the therapist as a team member
Contributing to the improvement of coordination as a team member
Efficiently performing duties to complete them within working hours
Appropriately understanding and considering confidentiality and personal information management
Performing appropriate infection control measures (including washing hands)
Performing appropriate equipment management (before and after use)
Performing treatment with a sense of responsibility
Appropriately managing the his/her own physical condition and schedule and avoiding interference with his/her duties
Appropriately implementing reporting, communication, and consultation procedures (developing and expressing his/her own thoughts) at all times
Identifying problems that are difficult to independently address
Consulting about problems that are difficult to independently address with appropriate persons in appropriate situations
Seriously accepting and addressing issues noted by a supervisor or his/her own failures
Developing positive attitudes and making efforts to achieve knowledge and skills
Performing treatment and duties based on learned outcomes and experience
Therapeutic skills
Adopting appropriate measures, such as life-saving techniques, to manage sudden changes in patients' conditions
Appropriately dealing with individual patients in consideration of their symptoms
Using appropriate verbal or nonverbal communication methods for individual patients
Showing empathy when communicating with patients in consideration of their psychological conditions
Appropriately listening to patients and their families to clarify their needs
Having the medical knowledge necessary for a therapist
Selecting appropriate evaluation items for individual patients
Performing vital (blood pressure and heart rate) measurements, according to each situation
Appropriately (and accurately and efficiently) conducting medical interviews with patients
Appropriately (and accurately and efficiently) examining reflexes
Appropriately (and accurately and efficiently) conducting orthopedic examination
Appropriately (and accurately and efficiently) evaluating pain
Appropriately (and accurately and efficiently) evaluating coordination
Appropriately (and accurately and efficiently) evaluating muscle tone
Appropriately (and accurately and efficiently) measuring range of motion
Appropriately (and accurately and efficiently) evaluating muscle strength
Appropriately (and accurately and efficiently) conducting sensory examination
Appropriately (and accurately and efficiently) performing morphometry
Appropriately (and accurately and efficiently) evaluating the motor function of patients with paralysis (using the SIAS and Brunnstrom Stage Test)
Appropriately (and accurately and efficiently) evaluating activities of daily living (using instruments, such as the FIM and Barthel Index)
Clinical practice-related thoughts
Clarifying individual patients' general characteristics
Identifying individual patients' possible risks based on the results of examination
Logically examining the causes of problems in movements or activities of daily living
Developing treatment programs to achieve goals (also referring to literature)
Safely implementing treatment programs
Safely handling treatment devices
Appropriately managing risks related to medical accidents, such as tube removal and bleeding

Table 1. Continued

Evaluation items
Appropriately managing risks related to falls
Providing appropriate range-of-motion training
Providing appropriate muscle-strengthening training
Providing appropriate assistance and guidance for the maintenance of sitting positions
Providing appropriate assistance and guidance for the maintenance of standing positions
Providing appropriate assistance and guidance for standing from a seat
Providing appropriate assistance and guidance for transfer
Providing appropriate assistance and guidance for gait training
Continuously evaluating (and observing) patients in the progress of treatment
Ratings
4=being able to accurately understand and adopt appropriate actions without supervision
3=being able to accurately understand and adopt appropriate actions under monitoring and supervision
2=being able to understand and adopt appropriate actions to a certain extent under monitoring and supervision
1=professionally incompetent
0=inappropriate assessment item

Table 2. Comparison of scores for postgraduate evaluation items (related to basic attitudes, therapeutic skills, and clinical practice-related thoughts) among experience-based groups

	1 year n=29	2 years n=21	3 years n=9	1 year vs. 2 years	1 year vs. 3 years	2 years vs. 3 years
Basic attitudes	87.7±11.3	91.7±7.2	91.5±7.9			
Therapeutic skills	81.5±15.3	89.5±9.0	93.9±6.7		*	
Clinical practice-related thoughts	74.8±13.2	82.3±13.7	94.4±4.3		*	*
Basic attitudes vs therapeutic skills						
Basic attitudes vs clinical practice-related thoughts	*	*				
Therapeutic skills vs clinical practice-related thoughts						

*p<0.05. Average±SD

Table 3. Comparison of scores among the post-graduate evaluation items (related to basic attitudes, therapeutic skills, and clinical practice-related thoughts) in each group

Evaluation items	1 year n=29	2 years n=21	3 years n=9	1 year vs. 2 years	1 year vs. 3 years	2 years vs. 3 years
Basic attitudes						
Dressing appropriately as a member of society	96.6±11.0	98.8±5.5	91.7±12.5			
Using appropriate language as a member of society	94.0±14.4	98.8±5.5	97.2±8.3			
Adhering to appointed times and deadlines	92.2±16.5	96.4±12.0	91.7±17.7			
Complying with rules in the workplace	94.0±14.4	98.8±5.5	91.7±12.5			
Understanding the role and duties of a therapist as a team member	86.2±17.1	90.5±16.7	91.7±12.5			
Adopting appropriate actions in consideration of the role of the therapist as a team member	85.3±19.5	89.3±12.7	91.7±12.5			
Contributing to the improvement of coordination as a team member	88.8±15.8	91.7±14.4	91.7±12.5			
Efficiently performing duties to complete them within working hours	81.9±22.1	82.1±22.6	86.1±18.2			
Appropriately understanding and considering confidentiality and personal information management	94.8±12.3	96.4±12.0	97.2±8.3			
Performing appropriate infection control measures (including washing hands)	98.3±6.4	96.4±9.0	100.0±0.0			
Performing appropriate equipment management (before and after use)	96.6±8.8	100.0±0.0	97.2±8.3			
Performing treatment with a sense of responsibility	86.2±18.4	90.5±16.7	97.2±8.3			

Table 3. Continued

Evaluation items	1 year n=29	2 years n=21	3 years n=9	1 year vs. 2 years	1 year vs. 3 years	2 years vs. 3 years
Appropriately managing the his/her own physical condition and schedule and avoiding interference with his/her duties	93.1±14.8	96.4±9.0	94.4±11.0			
Appropriately implementing reporting, communication, and consultation procedures (developing and expressing his/her own thoughts) at all times	75.9±20.6	89.3±16.9	83.3±17.7	*		
Identifying problems that are difficult to independently address	70.7±21.2	84.5±16.7	86.1±13.2	*		
Consulting about problems that are difficult to independently address with appropriate persons in appropriate situations	76.7±24.0	82.1±17.9	86.1±13.2			
Seriously accepting and addressing issues noted by a supervisor or his/her own failures	88.8±18.4	94.0±10.9	91.7±17.7			
Developing positive attitudes and making efforts to achieve knowledge and skills	84.5±19.4	83.3±19.9	83.3±21.7			
Performing treatment and duties based on learned outcomes and experience	82.8±20.2	83.3±16.5	88.9±18.2			
Therapeutic skills						
Adopting appropriate measures, such as life-saving techniques, to manage sudden changes in patients' conditions	60.3±15.7	77.4±20.8	83.3±17.7	*	*	
Appropriately dealing with individual patients in consideration of their symptoms	68.1±18.8	75.0±19.4	91.7±12.5		*	
Using appropriate verbal or nonverbal communication methods for individual patients	80.2±19.3	86.9±17.0	91.7±12.5			
Showing empathy when communicating with patients in consideration of their psychological conditions	81.0±19.7	84.5±16.7	86.1±18.2			
Appropriately listening to patients and their families to clarify their needs	75.0±20.0	84.5±18.5	94.4±11.0		*	
Having the medical knowledge necessary for a therapist	64.7±15.7	76.2±18.5	88.9±13.2	*	*	
Selecting appropriate evaluation items for individual patients	78.4±20.8	84.5±12.4	88.9±13.2			
Performing vital (blood pressure and heart rate) measurements, according to each situation	94.0±12.8	97.6±7.5	94.4±11.0			
Appropriately (and accurately and efficiently) conducting medical interviews with patients	82.8±19.0	88.1±17.0	97.2±8.3			
Appropriately (and accurately and efficiently) examining reflexes	91.4±18.0	97.6±7.5	97.2±8.3			
Appropriately (and accurately and efficiently) conducting orthopedic examination	85.3±19.5	89.3±18.7	91.7±12.5			
Appropriately (and accurately and efficiently) evaluating pain	81.0±22.8	86.9±17.0	91.7±12.5			
Appropriately (and accurately and efficiently) evaluating coordination	84.5±20.5	95.2±10.1	94.4±11.0			
Appropriately (and accurately and efficiently) evaluating muscle tone	81.9±22.1	94.0±10.9	100.0±0.0	*	*	
Appropriately (and accurately and efficiently) measuring range of motion	88.8±18.4	97.6±7.5	100.0±0.0			
Appropriately (and accurately and efficiently) evaluating muscle strength	87.1±20.7	97.6±7.5	100.0±0.0			
Appropriately (and accurately and efficiently) conducting sensory examination	87.9±20.7	96.4±9.0	97.2±8.3			
Appropriately (and accurately and efficiently) performing morphometry	87.9±20.7	96.4±9.0	97.2±8.3			
Appropriately (and accurately and efficiently) evaluating the motor function of patients with paralysis (using the SIAS and Brunnstrom Stage Test)	86.2±19.6	92.9±14.0	97.2±8.3			
Appropriately (and accurately and efficiently) evaluating activities of daily living (using instruments, such as the FIM and Barthel Index)	82.8±21.2	91.7±12.1	94.4±11.0			
Clinical practice-related thoughts						
Clarifying individual patients' general characteristics	75.9±21.6	81.0±17.5	94.4±11.0		*	
Identifying individual patients' possible risks based on the results of examination	69.0±17.2	76.2±16.7	91.7±12.5		*	

Table 3. Continued

Evaluation items	1 year	2 years	3 years	1 year	1 year	2 years
	n=29	n=21	n=9	vs. 2 years	vs. 3 years	vs. 3 years
Logically examining the causes of problems in movements or activities of daily living	63.8±15.8	72.6±17.5	86.1±13.2		*	
Developing treatment programs to achieve goals (also referring to literature)	64.7±12.5	79.8±18.7	91.7±12.5	*		*
Safely implementing treatment programs	83.6±15.3	85.7±16.9	94.4±11.0			
Safely handling treatment devices	89.7±14.2	92.9±14.0	97.2±8.3			
Appropriately managing risks related to medical accidents, such as tube removal and bleeding	77.6±20.4	86.9±18.7	97.2±8.3			*
Appropriately managing risks related to falls	78.4±20.8	86.9±17.0	94.4±11.0			
Providing appropriate range-of-motion training	80.2±19.3	91.7±14.4	100.0±0.0	*		*
Providing appropriate muscle-strengthening training	86.2±20.7	90.5±14.7	100.0±0.0			
Providing appropriate assistance and guidance for the maintenance of sitting positions	80.2±22.5	85.7±16.9	97.2±8.3			
Providing appropriate assistance and guidance for the maintenance of standing positions	73.3±20.0	83.3±18.3	97.2±8.3			*
Providing appropriate assistance and guidance for standing from a seat	70.7±16.5	78.6±18.2	97.2±8.3			*
Providing appropriate assistance and guidance for transfer	68.1±13.2	78.6±16.4	91.7±12.5	*		*
Providing appropriate assistance and guidance for gait training	62.1±14.4	71.4±18.2	88.9±13.2			*
Continuously evaluating (and observing) patients in the progress of treatment	73.3±21.1	75.0±17.7	91.7±12.5			*

Criteria:

Ratings

4=being able to accurately understand and adopt appropriate actions without supervision

3=being able to accurately understand and adopt appropriate actions under monitoring and supervision

2=being able to understand and adopt appropriate actions to a certain extent under monitoring and supervision

1=professionally incompetent

0=inappropriate assessment item

*p<0.05. Average±SD

DISCUSSION

In Japan's super-aging society, the numbers of certified physical and occupational therapists are rapidly increasing to meet increased social demands for rehabilitation. Under these circumstances, it is necessary to give more importance to postgraduate education in workplaces, in addition to improving school education systems. School education should enable students to sufficiently learn about items necessary to achieve more specialized knowledge and skills after graduation rather than about the application of skills that should be focused on in postgraduate education. In short, systems for teaching staff, clinical supervisors, and therapists in charge of postgraduate education to comprehensively provide standardized skill education before and after graduation¹³⁻¹⁷; it is particularly important to set education goals. In education for those specializing in medicine and medical services, education goals are frequently classified into 3 domains, cognitive, emotional, and psychomotor, based on taxonomy for the setting of educational goals¹⁸. Therapists with experience in supervising other staff members need to develop not only knowledge to simply implement therapy-related duties, perspectives on clinical practice, and techniques to conduct therapy evaluation but also appropriate attitudes as members of society, as well as a broad range of abilities, such as those related to self-management and self-education for continuous improvement.

In the present study, novice therapists' basic attitudes, therapeutic skills, and clinical practice-related thoughts were evaluated using an original clinical ability evaluation table to compare their clinical abilities. The results revealed that the longer the clinical experience, the higher the scores for these items. For example, those for clinical practice-related thoughts were significantly higher in the 3 years group compared with the 1 and 2 years groups, confirming the influence of differences in clinical experience on therapists' specialties.

Regarding the definition of each evaluation domain, basic attitudes covered abilities needed to work in clinical environments or as a member of society, self-management abilities required when working for a system, and self-education abilities required to continuously improve skills as a specialist, as mentioned in the Japanese Physical Therapy Association's ethics

code¹⁹). Therapeutic skills were regarded as information collection skills, such as those used to communicate with patients and in evaluation techniques necessary for therapists. Similarly, clinical practice-related thoughts were defined as processes such as integrating patient information obtained through therapy evaluation and examination results to identify problems, develop treatment programs, conduct reevaluation, and revise treatment programs.

On comparison of the evaluation items among the experience-based groups, the 3 years group showed significantly higher scores than the 1 and 2 years groups for therapeutic skills- and clinical practice-related thoughts-related items, both of which represented contents indicating improvement through clinical experience. The items for which the 1 year group showed markedly lower scores compared with the remaining groups were “adopting appropriate measures to manage sudden changes in patients’ conditions,” “having medical knowledge necessary for a therapist,” and “developing treatment programs to achieve goals”; these items covered the contents of supervision needed by a relatively large number of novices. On the other hand, the proportion of those showing high scores for some items, such as “appropriately evaluating muscle tone,” “providing appropriate range-of-motion training,” and “providing appropriate assistance and guidance for transfer,” which represent the contents of training for students that are, repeatedly provided at training schools or facilities, was 90% or higher in the 3 years group, while it was limited to 70% or lower in the 1 year group, indicating a high likelihood that basic therapeutic skills are mastered after employment. This may be explained by the influence of improvements in technical skills, such as “utilizing shifts in the center of gravity, rather than the arm strength” and “bringing patients’ potential abilities out to the fullest” as transfer techniques, through experience. Based on these results, which demonstrate that novice therapists need supervision in diverse areas from basic abilities to those requiring accumulated experience, it may be appropriate for educators to provide technical education regarding skills that, which are achievable for students in the early stages in consideration of applied movements. Also, education for novices should be provided with importance attached to abilities influenced by clinical experience.

On comparison of scores among the evaluation items in each group, scores for basic attitudes-related items were significantly higher than those for therapeutic skills-related items in the 1 and 2 years groups. In a clinical reasoning model developed by Edwards et al., the process of reasoning from the recognition and interpretation of information, development and revision of diverse hypotheses, and decision-making to reevaluation after intervention is defined²⁰. This may generally correspond to clinical practice-related thoughts extracted in the present study, indicating cognitive processes necessary for therapists to provide intervention for targets. Compared to with basic attitudes, clinical practice-related thoughts consist of more complex processes, and therefore, it may be necessary to establish educational systems that enable novice therapists with 1 or 2 years of experience to develop appropriate clinical practice-related thoughts.

Regarding study limitations, this study did not include mid-career therapists with four or more years of experience, so the extracted contents of supervision needed in clinical environments were limited to novices. Further studies should be conducted with a broader range of therapists to examine abilities necessary for managers and clinical supervisors, with the aim of nurturing them.

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