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# Are Contents of Physical Therapy in Nine Japanese Hospitals for Inpatients with Stroke Related to Inpatients' and Physical Therapists' Characteristics?

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**Abstract.** [Purpose] This study investigated the factors that influence activities provided during physical therapy for stroke. [Subjects] Data were collected from 85 physical therapists and 216 inpatients with stroke. [Methods] Time spent on specific functional activities provided to inpatients with stroke was recorded at nine rehabilitation facilities. These were used as dependent variables. Physical therapists' characteristics, including years since acquiring a license, gender, and treatment concepts influencing physical therapy for stroke, were recorded. Inpatients' characteristics, including age, gender, affected side, days post stroke, score on the Modified Rankin Scale (mRS), and gait ability measured by the Functional Independence Measure (FIM gait), were also recorded. Physical therapists' and inpatients' characteristics were used as independent variables. The t-test, correlation coefficients, and analysis of covariance were used to investigate which independent variables correlated with which dependent variables. [Results] Pre-gait, advanced gait, and community mobility were significantly correlated with mRS and FIM gait ($|r_s|$ = 0.32–0.62). Time spent on other functional activities had a weak correlation with inpatients' characteristics. Time spent on functional activities had no or few correlations with physical therapists' characteristics. [Conclusion] Relationships between time spent on specific functional activities and physical therapists' characteristics were weaker than those for inpatients' characteristics. Physical therapy for stroke includes many factors.
**Key words:** Physical therapy, Rehabilitation, Stroke

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## INTRODUCTION

Physical therapy has been shown to be effective for stroke, although many clinical trials lack details about the contents of physical therapy. Many randomized clinical trial studies[1–9)] only report on the fact that an intervention took place, without providing details on the intervention itself. One reason for the lack of information about the contents of physical therapy is the diversity of therapists who provide physical therapy and the variability of techniques or treatment concepts used.

Stroke rehabilitation remains a black box[9, 10)] and we know only a little about what influences the contents of physical therapy for stroke. It has been determined that patterns of therapy activities vary among inpatients with different lengths of stay and the severity of impairment in terms of therapy activity patterns[11)]. When the contents of physical therapy were divided into impairment activities and functional activities, the time spent on these activities was shown to be similar based on the length of hospital stay[11)]. We reported on the contents of physical therapy for inpatients within 1 year of stroke onset and have suggested that time spent on specific functional activities is significantly correlated with activities of daily living and gait ability[12)].

Physical therapists tend to develop a repertoire of favorite interventions to achieve a treatment aim, and expert and novice therapists may deliver interventions differently[13, 14)]. Therapists have been classified into four therapist types, characterized by clinical behaviors (seekers, receptives, traditionalists, and pragmatists)[15)]. Therapy may also be influenced by such factors as ethos of the unit, constraints on therapists, and interests and expertise of therapists[16)]. However, the literature contains little information describing the relation between the characteristics of physical therapists and contents of physical therapy for stroke.

An accurate and detailed description of the interventions used is important, as it enhances the validity of a study, allows comparisons between studies to be replicated, and facilitates the application of successful interventions in clinical practice[17)]. The purpose of this study was to describe the contents of physical therapy provided to inpatients with stroke in rehabilitation hospitals in Japan and to investigate which factors influence the contents of physical therapy for stroke. In particular, we focused on relationships between the contents of physical therapy and both the characteristics of inpatients with stroke as well as the characteristics of the physical therapists providing treatment. We hypothesized that if physical therapists are influenced by a specific treat-

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ment concept when providing an intervention, they would tend to favor specific activities for their patients.

## SUBJECTS AND METHODS

*Subjects*

Data were collected between September 2009 and December 2009 from consecutive inpatients with stroke seen at nine hospitals in Japan. Eight hospitals were in Gunma Prefecture, and one was in Saitama Prefecture. In these hospitals, physical therapy, occupational therapy and speech therapy were provided according to the patients' needs. Physical therapy was provided by 85 physical therapists. Physical therapists met the inclusion criteria if they provided physical therapy for inpatients with stroke. This study followed the principles of the Declaration of Helsinki. Physical therapists were given verbal and written information about the study, and written consent was obtained from them prior to their inclusion in the study. Inpatients' information was given complete anonymity, so their consent was not requested.

*Methods*

Therapists used data collection forms to record activities used during each physical therapy session for inpatients with stroke. The physical therapy data collection form[12] was based on the form developed by Jette et al.[18] Data collection forms allowed physical therapy providers to describe physical therapy sessions in terms of 11 categories of functional activities: prefunctional, bed mobility, sitting, transfers, sit-to-stand, wheelchair mobility, pre-gait, gait, advanced gait, community mobility, and others. Prefunctional activity was any activity performed in preparation for later functional activities. Therapists could identify one or more activities that they worked on with inpatients within a session. Within each of these activity categories, physical therapists recorded the amount of time spent on the activity with a patient in 5-minute increments. Physical therapists also recorded the amount of time spent on physical assessments, home evaluations, and work site evaluations in 5-minute increments. Physical therapists recorded data from three physical therapy sessions per inpatient per week; each therapist chose which sessions to provide data about. Each physical therapist recorded the data for one to six inpatients.

The following information was collected about physical therapists: years since acquiring a license, gender, and treatment concepts and techniques that influenced their physical therapy for patients with stroke. Participants were allowed to select up to three treatment concepts and techniques that influenced their physical therapy for stroke from 20 concepts and techniques listed on the form. In terms of inpatient characteristics, the following inpatient characteristics were recorded by physical therapists: age, gender, days post stroke, stroke type, affected side, modified Rankin Scale (mRS)[19], and gait ability measured by the Functional Independence Measure (FIM gait)[20].

Descriptive statistics were used to examine characteristics of physical therapists and inpatients with stroke. Contents of physical therapy were described by frequency and the amount of time spent on each of the 11 functional activities and evaluations. The mean time (minutes) of one physical therapy session was calculated.

Pearson product-moment correlation coefficients or Spearman's rank correlation coefficients were used to investigate relationships between mean minutes of time spent on functional activities and inpatients' age, days post stroke, mRS, FIM gait, and physical therapists' years since acquiring a license. The unpaired t-test was used to compare inpatients' and physical therapists' gender. Analysis of variance and the Bonferroni post hoc test were used to compare stroke type and affected side. For the investigation of relationships between the amount of time and treatment concepts and techniques that influenced physical therapy for patients with stroke, the three most popular treatment concepts and techniques were assessed. Physical therapists were divided into groups based on whether their therapy was influenced or not influenced by each the three most popular treatment concepts and techniques. To examine the influence of treatment concepts and techniques, we analyzed the differences between influenced and not-influenced treatment concepts and techniques in the mean minutes of time spent on functional activities, using analysis of covariance (ANCOVA) with physical therapist's years since acquiring a license and inpatient's age, duration after stroke, and FIM gait used as covariates. The level of statistical significance was chosen as 0.05. Statistical analyses were performed using SPSS 11.0.1 J for Windows (SPSS Japan Inc.).

## RESULTS

The characteristics of the 85 physical therapists are shown in Table 1. Their mean age was 27.1 years, and their mean time since license acquisition was 3.6 years. The three most popular treatment concepts and techniques that influenced physical therapy for patients with stroke were neurodevelopmental treatment (NDT), proprioceptive neuromuscular facilitation (PNF), and a task-oriented approach.

A total of 216 inpatients with stroke underwent 648 physical therapy sessions for this study. The mean time per session was 44.0 minutes (SD 14.9, range = 15–80). The characteristics of the inpatients with stroke are shown in Table 2. The mean patient age was 71.2 years, and the mean duration since stroke was 173.9 days. Most patients (n = 142) experienced ischemic stroke, 64 had cerebral hemorrhage, and 10 had subarachnoid hemorrhage.

Among the functional activities, prefunctional, gait, and sit-to-stand activities were the most frequently addressed functional activities (15.8%, 15.3%, and 14.9%, respectively; Table 3). In terms of the amount of time spent on each functional activity, the most time was spent on gait (18.9%), prefunctional activities (17.4%), and sitting (13.4%). In terms of evaluation factors, physical assessment was done 1.8% of the time and home evaluation was done 0.4% of the time. No work evaluations were done. Both home evaluation and work evaluation were subsequently excluded from our investigation.

There were several significant relationships between

mean time of functional activities and inpatients' characteristics. Inpatients' age and duration since stroke had significant relationships with pre-gait and gait. On the other hand, mRS and FIM gait were significantly related to the amount of time spent on various functional activities (Table 4). However, most of these relationships were weak. Pre-gait, advanced gait, and community mobility had moderate relationships with mRS and FIM gait ($|r_s| = 0.32–0.62$).

**Table 1.** Characteristics of physical therapists

| Characteristics | Values |
|---|---|
| No. of physical therapists | 85 |
| Male/Female, n | 38 / 48 |
| Age | |
| Mean (SD) | 27.1 (4.1) |
| Range | 22–39 |
| Years since acquiring a license | |
| Mean (SD) | 3.6 (3.4) |
| Range | 0–15 |
| Influence of treatment concepts and techniques, n (%) | |
| NDT | 34 (39.5) |
| PNF | 23 (26.7) |
| Task-oriented approach | 21 (24.4) |
| Joint mobilization | 18 (20.9) |
| Neurocognitive rehabilitation | 10 (11.6) |
| Individual stretching | 9 (10.5) |

SD, standard deviation
NDT, neurodevelopment treatment
PNF, proprioceptive neuromuscular facilitation

Mean times of all activities did not differ with inpatients' gender or stroke type. In terms of the affected side, mean

**Table 2.** Characteristics of inpatients with stroke

| Characteristics | Values |
|---|---|
| No. of patients | 216 |
| Age | |
| Mean (SD) | 71.2 (12.8) |
| Range | 31–101 |
| Male/Female, n | 119 / 97 |
| Days post stroke | |
| Mean (SD) | 173.9 (396.4) |
| Range | 0–3,822 |
| Stroke type, n (%) | |
| Ischemic | 142 (65.7) |
| Hemorrhagic | 64 (29.6) |
| Subarachnoid Hemorrhage | 10 (4.6) |
| Affected side, n (%) | |
| Right | 92 (42.6) |
| Left | 97 (44.9) |
| Bilateral | 27 (12.5) |
| mRS | |
| Median | 4 |
| Range | 0–5 |
| FIM gait | |
| Median | 2 |
| Range | 1–7 |

SD, standard deviation
mRS, modified Rankin Scale
FIM, Functional Independence Measure

**Table 3.** Frequency and amount of time spent on specific functional activities

| | | Frequency (times) | Percentage of frequency (%) | Amount of time spent (minutes) | Percentage of time spent (%) | Mean (minutes) | (SD) |
|---|---|---|---|---|---|---|---|
| Functional activities | Prefunctional | 419 | 15.8 | 4,970 | 17.4 | 7.7 | (6.9) |
| | Bed mobility | 330 | 12.4 | 3,780 | 13.3 | 5.8 | (6.7) |
| | Sitting | 351 | 13.2 | 3,810 | 13.4 | 5.9 | (6.1) |
| | Transfers | 134 | 5.1 | 820 | 2.9 | 1.3 | (2.4) |
| | Sit-to-stand | 394 | 14.9 | 3,605 | 12.7 | 5.6 | (5.0) |
| | Wheelchair | 86 | 3.2 | 565 | 2.0 | 0.9 | (2.2) |
| | Pre-gait | 217 | 8.2 | 2,110 | 7.4 | 3.3 | (5.1) |
| | Gait | 406 | 15.3 | 5,390 | 18.9 | 8.3 | (8.0) |
| | Advanced gait | 114 | 4.3 | 1,070 | 3.8 | 1.7 | (3.8) |
| | Community mobility | 34 | 1.3 | 400 | 1.4 | 0.6 | (2.6) |
| | Others | 110 | 4.1 | 1,340 | 4.7 | 2.1 | (4.6) |
| Evaluation | Physical assessment | 52 | 2.0 | 515 | 1.8 | 0.8 | (2.5) |
| | Home evaluation | 4 | 0.2 | 120 | 0.4 | 0.2 | (1.7) |
| | Work evaluation | 0 | 0.0 | 0 | 0.0 | 0.0 | (0.0) |
| | Total | 2,651 | 100.0 | 28,495 | 100.0 | 44.0 | (14.9) |

SD, standard deviation
Others comprises movement during toileting, stair exercise, pedaling exercise on a bicycle ergometer, and movement on the floor etc.

time spent on prefunctional and sitting activities differed significantly by side. For prefunctional activities, there were significant differences between the right side (7.9 minutes) and bilateral sides (4.0 minutes; $p < 0.05$), and the left side (8.5 minutes) and bilateral sides (4.0 minutes; $p < 0.01$). For sitting, there was a significant difference between the right side (4.3 minutes) and left side (7.0 minutes; $p < 0.01$) (Table 5).

Physical therapists' years since acquiring their license had a significant relationship with mean time spent on prefunctional, sit-to-stand, and other activities. However, these relationships were weak ($|r_s| = 0.17–0.20$). In terms of physical therapists'gender, mean time spent on each activity did not differ except for transfers (Table 6).

In terms of treatment concepts and techniques that influenced physical therapy for patients with stroke, only pre-gait showed a significant difference in time spent in the activity among those not influenced or influenced by NDT (2.5 minutes vs. 4.7 minutes, $F = 6.65$, $p < 0.05$). Significant differences were not seen in terms of PNF and task-oriented approach influencing physical therapy (Table 7).

**Table 4.** Correlation coefficients of the amount of time spent on functional activities and inpatients' characteristics

| Functional activities | Age† (n = 216) | Days post stroke† (n = 213) | mRS‡ (n = 216) | FIM gait‡ (n = 216) |
|---|---|---|---|---|
| Prefunctional | −0.12 | −0.10 | −0.09 | 0.08 |
| Bed mobility | −0.11 | −0.03 | 0.02 | −0.02 |
| Sitting | 0.13 | −0.05 | 0.29** | −0.36** |
| Transfers | 0.03 | −0.01 | 0.17* | −0.31** |
| Sit-to-stand | −0.11 | −0.10 | −0.06 | 0.00 |
| Wheelchair | 0.08 | −0.06 | 0.14* | −0.22** |
| Pre-gait | −0.16* | −0.10 | −0.33** | 0.32** |
| Gait | −0.18** | −0.18** | −0.31** | 0.28** |
| Advanced gait | −0.12 | −0.02 | −0.55** | 0.62** |
| Community mobility | 0.00 | −0.05 | −0.36** | 0.41** |
| Others | 0.08 | 0.03 | 0.00 | 0.06 |
| Physical assessment | −0.01 | −0.06 | −0.03 | 0.06 |

mRS, modified Rankin Scale; FIM, Functional Independence Measure
†, Pearson product-moment correlation coefficient
‡, Spearman's rank correlation coefficient
*, $p < 0.05$; **, $p < 0.01$

**Table 5.** Mean amount of time spent on functional activities according to inpatients' characteristics

| | | Inpatient's gender | | Stroke type | | | Affected side | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Male (n = 119) | Female (n = 97) | Cerebral Infarction (n = 143) | Cerebral hemorrhage (n = 63) | Subarachnoid hemorrhage (n = 10) | Right (n = 92) | Left (n = 97) | Bilateral (n = 27) |
| Functional activities (minute) | Prefunctional | 7.7 | 7.6 | 7.6 | 8.0 | 7.0 | 7.9 | 8.5 | 4.0** |
| | Bed mobility | 6.4 | 5.2 | 5.7 | 5.9 | 7.7 | 5.8 | 5.3 | 7.8 |
| | Sitting | 5.5 | 6.3 | 5.6 | 6.5 | 5.5 | 4.3 | 7.0 | 7.3** |
| | Transfers | 1.3 | 1.2 | 1.2 | 1.5 | 1.0 | 1.3 | 1.4 | 0.9 |
| | Sit-to-stand | 5.6 | 5.5 | 5.2 | 6.5 | 4.5 | 5.9 | 5.8 | 3.5 |
| | Wheelchair | 0.9 | 0.8 | 0.8 | 1.1 | 0.2 | 0.7 | 1.0 | 1.0 |
| | Pre-gait | 3.8 | 2.5 | 3.4 | 3.2 | 1.5 | 3.9 | 2.9 | 2.3 |
| | Gait | 9.2 | 7.2 | 7.6 | 10.1 | 7.5 | 8.6 | 8.9 | 5.4 |
| | Advanced gait | 2.0 | 1.3 | 1.8 | 1.5 | 0.2 | 2.0 | 1.8 | 0.1 |
| | Community mobility | 0.8 | 0.4 | 0.8 | 0.3 | 0.0 | 0.8 | 0.6 | 0.2 |
| | Others | 1.8 | 2.3 | 2.2 | 2.1 | 0.5 | 1.9 | 2.0 | 2.9 |
| Physical assessment (minute) | | 0.9 | 0.6 | 0.8 | 0.8 | 0.2 | 0.8 | 0.9 | 0.5 |

**, $p < 0.01$

## DISCUSSION

Many studies have been criticized for the lack of detail regarding the type of physical therapy provided[21]. Although therapists document specific goals and plan therapeutic activities to achieve these goals, the type of rehabilitation therapies provided and their impact on patient recovery remain largely undocumented[11].

This study reports the details of the types of physical therapy provided to patients with stroke in multiple inpatient rehabilitation settings in a specified area in Japan. This study showed that the most time was spent on functional activities of gait, prefunctional activities, sitting, and sit-to-stand activities. Jette et al.[18] reported that in terms of functional activities, the most time was spent on gait (31.3%), prefunctional activities (19.7%), and transfers (10.0%). McNaughton et al.[22] reported that 38.7% of time was spent on movement activities in New Zealand compared with 54.0% of time in the United States. These activities included transfer, pre-gait, gait, and advanced gait. In the United Kingdom, the most frequent activities provided by acute stroke therapists were dynamic sitting, static sitting, sit-to-stand and dynamic standing, movement of the arm, and walking[23]. This latter study showed that therapists tended to work on movement activities before transfer activities and few walking activities were used. In comparison with these studies, the time spent on movement activities recorded in this study was shorter. This may be a Japanese characteris-

**Table 6.** Mean minutes of functional activities and physical therapists' characteristics

| | | Years since acquiring a license† | Physical therapist's gender | |
|---|---|---|---|---|
| | | | Male (n = 38) | Female (n = 48) |
| Functional activities (minute) | Prefunctional | −0.17* | 6.9 | 9.1 |
| | Bed mobility | −0.01 | 5.2 | 7.5 |
| | Sitting | −0.09 | 8.1 | 5.4 |
| | Transfers | −0.13 | 0.5 | 2.0** |
| | Sit-to-stand | −0.20** | 6.2 | 6.7 |
| | Wheelchair | 0.00 | 0.9 | 1.5 |
| | Pre-gait | −0.08 | 5.1 | 4.1 |
| | Gait | −0.08 | 10.7 | 11.4 |
| | Advanced gait | −0.01 | 2.7 | 2.4 |
| | Community mobility | −0.06 | 1.2 | 0.9 |
| | Others | 0.17* | 1.6 | 2.3 |
| Physical assessment (minute) | | −0.06 | 1.6 | 0.7* |

†, Pearson product-moment correlation coefficient
*, $p < 0.05$; **, $p < 0.01$

**Table 7.** Mean minutes of functional activities and analysis of covariance

| | | NDT | | | PNF | | | Task-oriented approach | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Not-influenced (n = 139) | Infuenced (n = 77) | | Not-influenced (n = 162) | Infuenced (n = 54) | | Not-influenced (n = 161) | Infuenced (n = 55) | |
| Amount of time spent on Functional activities mean (SD) (minute) | Prefunctional | 7.5 (6.8) | 8.0 (7.2) | | 7.7 (7.1) | 7.4 (6.6) | | 7.8 (7.0) | 7.4 (6.8) | |
| | Bed mobility | 5.2 (6.4) | 6.9 (7.2) | NA | 6.0 (6.9) | 5.2 (6.2) | NA | 6.2 (6.9) | 4.8 (6.0) | NA |
| | Sitting | 5.8 (6.2) | 6.0 (6.0) | | 5.9 (6.4) | 5.9 (5.4) | | 5.5 (6.0) | 7.1 (6.4) | |
| | Transfers | 1.4 (2.6) | 1.1 (2.0) | | 1.3 (2.5) | 1.1 (2.4) | | 1.3 (2.4) | 1.3 (2.5) | |
| | Sit-to-stand | 6.0 (5.2) | 4.7 (4.5) | | 5.3 (4.9) | 6.3 (5.3) | | 5.6 (5.2) | 5.3 (4.6) | |
| | Wheelchair | 0.8 (2.2) | 1.0 (2.4) | | 0.8 (2.1) | 1.1 (2.5) | | 0.8 (2.1) | 1.1 (2.7) | |
| | Pre-gait | 2.5 (4.1) | 4.7 (6.3)* | | 3.4 (5.3) | 2.7 (4.4) | | 3.4 (5.1) | 2.7 (5.1) | |
| | Gait | 8.5 (8.8) | 8.0 (6.4) | | 8.1 (7.9) | 9.0 (8.4) | | 8.5 (7.8) | 7.7 (8.7) | |
| | Advanced gait | 1.6 (4.0) | 1.8 (3.6) | | 1.7 (4.0) | 1.4 (3.1) | | 1.8 (4.0) | 1.2 (3.4) | |
| | Community mobility | 0.6 (2.5) | 0.6 (2.7) | | 0.6 (2.6) | 0.6 (2.5) | | 0.7 (2.6) | 0.5 (2.4) | |
| | Others | 2.1 (4.5) | 2.1 (4.8) | NA | 2.0 (4.5) | 2.3 (4.9) | | 1.9 (4.3) | 2.4 (5.4) | |

SD, standard deviation; NDT, neurodevelopment treatment; PNF, proprioceptive neuromuscular facilitation
*, $p < 0.05$; NA, not applicable

tic of physical therapy for stroke. However, it is not known which approach is more effective.

In our study, there were significant correlations between time spent on some functional activities and mRS and gait ability measured by FIM gait. When inpatients had slight a functional disorder or had gait ability, physical therapists spent a long time on pre-gait, advanced gait, and community mobility activities. Bernhardt et al.[24] reported that patients with mild stroke spent a long time performing standing and walking activities and less time in bed. Bernhardt et al.[25] suggested that the side affected by stroke and shoulder strength were independently associated with the amount of time spent on upper-limb activities. The affected limb was observed to move less in patients with left-sided hemiparesis (right-sided stroke) and in those with moderate or severe shoulder weakness. Bode et al.[11] suggested that there were differences in therapy time spent with more- and less-impaired persons. Their findings suggest that the patient's ability influences the contents of physical therapy. However, in this study, except for pre-gait, advanced gait, and community mobility activities, relationships between physical therapy activity and patient characteristics were weak.

Stevenson et al.[26] suggested that clinical experience with survivors of stroke and practically oriented continuing education experiences were ranked as the most important factors influencing physical therapy practices. There are probably differences in continuing education based on the physical therapist's environment. In this study, diverse treatment concepts and techniques influenced therapy. Physical therapists preferred their own treatment concepts and techniques. Thus, if the physical therapist's environment, including country, area, hospital, unit, and colleagues, changes, there are likely to be changes in the activities included in physical therapy. However, time spent in functional activities had few significant correlations with the physical therapist's years since acquiring a license and gender. Being influenced by NDT was only significantly associated with pre-gait activities. The concept of NDT is a problem-solving approach to the assessment and treatment of individuals with disturbances of tone, movement, and function due to a lesion of the central nervous system. Therefore physical therapists influenced by NDT spend time on preparation for gait. Tyson et al.[27] reported that perceived adherence to NDT had little effect on the choice of intervention and the only significant difference was that preparation for treatment techniques was used more frequently among physical therapists strongly influenced by NDT than among more eclectic physical therapists. In this study, being influenced by PNF and a task-oriented approach had no relationship with time spent on functional activities. We suggest that treatment concepts or techniques have little influence on the type of activities physical therapists choose. Therapists appear to use a number of principles from different approaches in their daily practice[28]. Physical therapists are influenced by many principles and techniques, so contents of physical therapy appear to vary greatly. For example, if physical therapists are influenced by NDT and a task-oriented approach, they may spend a long time on both pre-gait and gait activities.

This study had several limitations. The reliability of the data collection form used in this study has not been explicitly tested. Wittwer et al.[29] suggested that despite the potential for many factors to influence the accuracy of the data, both criterion raters and clinicians are generally able to agree on relative proportions of time devoted to different activities within a treatment session using their recording form. Bargley et al.[30] suggested that physical therapists' recording of duration of treatment time was not reliable and was systematically greater than that observed on video recordings. We should use video recording times to get higher reliability. In addition, the data collection form does not record the processes involved in treatment, such as assessment, problem solving, and clinical reasoning. Because physical therapists recorded their own activities based on their own clients and techniques, the content of their activities may be subject to some type of bias. Another limitation was that among the subjects of this study, the mean time since license acquisition was 3.6 years, so the physical therapists included lacked long-term experience.

In conclusion, the contents of physical therapy provided to inpatients in several hospitals in Japan were described. Time spent on functional activities had significant relationships with inpatients' characteristics. Relationships with physical therapists' characteristics were weaker than those with inpatients' characteristics. There were no great differences among physical therapists in times spent on functional activities, so aims and plans for functional activities appear to differ from physical therapist to physical therapist. Describing the contents of physical therapy is useful for understanding what should be included in conventional physical therapy for stroke. Investigating factors that influence physical therapy for stroke may help clarify the process for deciding which interventions to use for stroke patients and for educating physical therapists and students. Physical therapy for stroke appears to be influenced by a multitude of factors.

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