

## The role of physical therapists in introducing assistive products for the home-bound elderly disabled

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**Abstract.** [Purpose] This study explored the roles of physical therapists (PTs) in introducing assistive products, which are essential for living securely and stably at home, and examined how PTs can fulfill these roles more efficiently and effectively. [Subjects and Methods] A questionnaire on introducing assistive products was administered to PTs working at randomly selected hospitals, health-care facilities for the elderly requiring long-term care, home-visit nursing stations, and other such facilities and to PTs providing physical therapy directly to the home-bound elderly disabled. The subjects of the study were 77 PTs who returned valid responses. [Results] For awareness of systems for assistive product's introduction, PTs were more aware of the system based on the Long-Term Care (LTC) Insurance Act than the system based on the Act on Welfare for the Home-Bound Elderly Disabled. For PTs handling assistive product's introduction for the home-bound elderly disabled, approximately 91% of the respondents answered that they had handled some cases of assistive product's introduction, and PTs with longer clinical experience had handled more assistive product's introduction cases. [Conclusion] The results demonstrated that PTs understand the work involved in introducing assistive products work well and that they handle it. The results, however, also suggested that educational and operational improvements are urgently required for PTs introducing assistive products essential for the lives of the home-bound elderly disabled.

**Key words:** Assistive products, Physical therapists, Home-bound elderly disabled

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### INTRODUCTION

The aging of Japan shows no sign of slowing down. The Statistics Bureau of the Japanese Ministry of Internal Affairs and Communications estimates that there are 31,898,000 elderly people aged 65 years old or older (final estimate based on the preliminary count as of October 2013), accounting for 25.1% of Japan's total population. The population aging rate was 22.7% in 2012; there is now more than one elderly person among every four persons<sup>1)</sup>. According to the Interim Report on the Long-Term Care (LTC) Insurance Projects issued by the Ministry of Health, Labour and Welfare in December 2013, 5,800,000 people are certified as requiring long-term care<sup>2)</sup>. Such rapid population aging and the accompanying increase in elderly people requiring long-term care and assistance are becoming social issues. Effective use of assistive products helps home-bound elderly disabled persons to rebuild their lives, expand the range of their activities, and participate more in society. In

order to use assistive products effectively, users must acquire appropriate knowledge and techniques, and in order to effectively improve the daily lives of the home-bound elderly disabled, appropriate equipment and devices must be introduced. PTs play important roles in this<sup>3)</sup>. Few studies, however, have reported on the roles PTs play in introducing such products<sup>4, 5)</sup>.

Therefore, we conducted a questionnaire survey to discover how PTs participate in introducing assistive products and the problems they experience when doing so and examined how their participation can be more effective.

### SUBJECTS AND METHODS

A questionnaire on introducing assistive products was given to PTs working at randomly selected hospitals, health-care facilities for the elderly requiring long-term care, home-visit nursing stations, and other such facilities and to PTs providing physical therapy directly to the home-bound elderly disabled. The subjects of the study were 77 PTs who returned valid responses.

The questions about their duration of included clinical experience as PTs, awareness of systems for introducing assistive products, and whether and how they handled introducing assistive products.

For clinical experience duration, the subjects were divided into two groups: one with less than ten years of clinical

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experience and the other with ten or more years.

Based on the awareness of systems for introducing assistive products, we divided the subjects into two groups: high and low awareness. The high awareness group was well aware of, or sufficiently aware of, “social welfare measures for the elderly (benefits for daily life equipment)”, “purchase of assistive products based on the Long-Term Care Insurance Act”, and “rental of assistive products based on the Long-Term Care Insurance Act”, and the low awareness group was marginally aware of, not well aware of, or unaware of such systems.

Concerning the subjects’ introduction of assistive products, we asked about their experience, trials and fittings, and follow-ups after introduction. For their experience in introducing assistive products, we asked whether they had introduced assistive products to the home-bound elderly disabled. For those who answered yes, we asked how many times. They were then divided into two groups: the less introduction group (LI group) consisting of PTs who introduced assistive products less than 20 times and the more introduction group (MI group) consisting of PTs who assistive products 20 times or more.

Regarding the places where trial fittings of assistive products took place, the subjects chose one of the following three answers: at the user’s home, hospital/institution, and other places.

For follow-ups, we asked about the timing and method of follow-up. For timing, the subjects chose from immediately after introduction, within 1 week, within 1 month, within 6 months, and after 6 months. For follow-up methods, the subjects selected from phone, questionnaire, visit, and other methods. The answers were divided into two groups: follow-ups with visits and follow-ups without visits.

Concerning the ethics of this study, we explained to the PTs in writing that any information obtained from the questionnaire survey would only be used for this study and that no secrets obtained from the survey would be disclosed to any third parties.

The correlations between respondent attributes and their answers to two questions, one about their knowledge of social systems for assistive product’s introduction for the home-bound elderly disabled and the other about their roles, if any, in assistive product’s introduction and how they handle such roles, were examined using the  $\chi^2$  test. If the  $\chi^2$  test suggested that the answers did not differ depending on the basic respondent information, the answers were simply aggregated, and percentages were calculated. For statistical analysis, we used the STATISTICA 2000 Pro statistical analysis software from Stat Soft. A significance level of 5% was considered statistically significant.

## RESULTS

The subjects were 58 male (75%) and 19 female (25%) PTs. Their years of clinical experience varied from 1 to 35 years, with an average of  $12.0 \pm 6.4$  years. Thirty-eight subjects (49%) had less than 10 years of clinical experience, and 39 subjects (51%) had 10 or more years of clinical experience.

As for subject awareness of systems for introducing as-

**Table 1.** The correlations between clinical experience duration and the number of times PTs introduced assistive products

Number of times	Clinical experience duration		*
	Less than ten years (%)	Ten or more years (%)	
Less than twenty times (n=37)	64.9	35.1	
Twenty times or more (n=32)	31.2	68.8	

\*:  $p < 0.05$

istive products, the high awareness group accounted for 53% of the PTs aware of systems for purchase of assistive products based on the Long-Term Care Insurance Act and also 53% of the PTs aware of systems for rental of assistive products based on the Long-Term Care Insurance Act. For social welfare measures for the elderly (benefits for daily life equipment), however, the high awareness group accounted for only 24% of the PTs. The subjects were more aware of the systems based on the Long-Term Care Insurance Act than the social welfare measures for the elderly. No statistical correlation was observed between the awareness of such systems and subject attributes (gender and years of clinical experience).

Asked whether they had introduced assistive products to the elderly, 70 subjects (91%) answered yes. Among them, 37 subjects (53%) introduced products less than 20 times, and 33 subjects (47%) introduced them 20 times or more. The results suggest that many PTs have introduced assistive products to the elderly. Approximately half of the PTs surveyed introduced them 20 times or more. No statistical correlation was observed between the number of times assistive products were introduced and subject attributes, except that subjects with longer clinical experience had introduced assistive products a larger number of times ( $p < 0.05$ ) (Table 1).

As for the locations for trial and fitting of assistive products, trial fittings were conducted at the user’s home in 55 cases (61%) and at hospital/institution in 35 cases (39%). Approximately 60% of trial fittings were conducted in places where the products would be used, suggesting that trial fitting of assistive products is conducted under conditions similar to those of actual use. No statistical correlation was observed between the places of trial fitting and subject attributes, except that subjects with less experience in introducing assistive products tended to conduct trial fittings at users’ homes, i.e., where the products would be used, and subjects with more introduction experience tended to conduct trial fittings at hospitals/institutions, without visiting users’ homes ( $p < 0.05$ ) (Table 2).

As for the timing of follow-ups after introducing assistive products, follow-ups were conducted immediately after introduction in 29 cases (37%). This was followed by within 1 week in 24 cases (30%), within 1 month in 21 cases (26%) and within 6 months in 5 cases (6%). Over 90% of follow-ups were conducted within one month. As for the methods, follow-ups were conducted by interviewing users or their families when they visited the hospital/institution in 31 cases (38%). This was followed by follow-ups conducted by visiting users in 28 cases (35%), telephone interviews in 14 cases (17%), other methods in 7 cases (9%) and question-

**Table 2.** The correlations between fitting place for assistive products and the number of times PTS introduced assistive products

Number of times	Clinical experience duration	
	Outside hospital (%)	In hospital (%)
Less than twenty times (n=37)	64.9	35.1
Twenty times or more (n=33)	33.3	66.7

\*: p&lt;0.05

naires in 1 case (1%). Over 70% of follow-ups were conducted by interviewing in person the users or their families. No statistical correlation was observed between the follow-up method and subject attributes, except that subjects with more experience in introducing assistive products tended to conduct follow-ups by visiting users ( $p<0.05$ ) (Table 3).

## DISCUSSION

In order to improve the daily life of the home-bound elderly disabled, improving their mental and physical functions is important. At the same time, introducing assistive products is very effective for improving the daily life of the home-bound elderly disabled and their families<sup>4</sup>). For this reason, PTs treating the home-bound elderly disabled are required to have broad, deep, and current knowledge concerning introduction of assistive products, including relevant laws and systems.

Claiming that it is important for PTs to have knowledge of systems for introducing assistive products, Nagano<sup>6</sup>) wrote that most PTs in Japan are working under health-care insurance, long-term care insurance, and other such systems, and they must have a certain level of understanding and knowledge of such systems in order to offer their physical therapy skills to Japanese nationals. Without such understanding and knowledge, clinical work is not possible. According to the current survey, the high awareness group for the social welfare measures for the elderly accounted for only 24% of all the subjects, whereas the high awareness group for the Long-Term Care Insurance Act accounted for 53%. We are concerned that PTs have poor understanding and knowledge of the Act on Social Welfare for the Elderly, although they know the Long-Term Care Insurance Act well. This may suggest that PTs are more aware and have better knowledge of the long-term care insurance system than social welfare measures, particularly measures to prevent frail elderly people, who are likely to need long-term care in the future, from needing such care. Considering that such preventive measures will be increasingly encouraged in the future, PTs must improve their knowledge and understanding of the social welfare measures to the same level as their knowledge and understanding of the long-term care insurance system<sup>7</sup>). For this, we suggested that undergraduate training and education of PTs must include government systems and measures.

Seventy subjects (91%) answered that they had introduced assistive products to the elderly, and approximately half of them had introduced the products 20 times or more. This suggests that introducing assistive products is a common assistance service that PTs offer. Years of clinical ex-

**Table 3.** The correlations between follow-up method after assistive product's introduction and the number of times PTs introduced assistive products

Number of times	Clinical experience duration	
	Without visiting (%)	Visiting (%)
Less than twenty times (n=37)	73	27
Twenty times or more (n=33)	45.5	54.5

\*: p&lt;0.05

perience were significantly longer in the MI group than the LI group, revealing that PTs with longer clinical experience introduced assistive products a larger number of times.

As for places for trial and fitting of assistive products, PTs with less experience in introducing assistive products tended to conduct trial fittings at users' homes, i.e., where the products would be used, and PTs with more introduction experience tended to conduct trial fittings at hospitals/institutions. Trials and fittings are supposed to be conducted at users' homes. The results, however, suggests that experienced PTs with practical know-how obtained from experience can conduct trial fittings at hospitals/institutions, imagining the environments of the users' homes. As for follow-ups, PTs with more introduction experience tended to visit users' homes for follow-ups more than those with less introduction experience, showing results opposite to those for trial fittings. PTs with more introduction experience visit users' homes for follow-ups to confirm the practical know-how they have obtained from experience and to take into consideration the differences in users' home environments. It is presumable that they observe, assess, and analyze the activities in which the users make use of the assistive products and obtain new know-how.

Assistive products work appropriately only when they fit in well with the physical functions and lifestyle of the user. PTs are good at, more than anything else, observing, assessing, and analyzing such physical functions. It is desirable for PTs to acquire the latest knowledge and skills pertaining assistive products and continue to work to achieve comfortable living environments for the home-bound elderly disabled.

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