

**Title: Survey of the current status of cancer rehabilitation in Japan**

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## **Abstract**

*Purpose:* To elucidate the current status of cancer rehabilitation in institutions nationwide.

*Method:* A questionnaire survey regarding the current status of cancer rehabilitation in 1693 health care institutions was conducted by mail. The survey first asked whether rehabilitation was being conducted for cancer patients, and in facilities in which it was being conducted, it then asked about the content of the rehabilitation, the stage of the cancer patients, etc.

Facilities in which cancer rehabilitation was not being conducted were surveyed in regard to whether there was a need for cancer rehabilitation.

*Results:* Valid replies were obtained from 1045 (62.0%) institutions, and 864 (82.7%) of them conducted rehabilitation for cancer patients. A high proportion of the content of the rehabilitation was found to be related to physical function. Activities of daily living guidance and training were also found to be conducted in a high proportion. Low proportions of the facilities conducted content that was specialized for cancer. Of the 181 facilities in which rehabilitation was not being conducted for cancer patients, 171 (94.5%) replied that they felt that rehabilitation was needed for cancer patients.

*Conclusions:* Based on the results of this fact-finding survey it will be necessary to consider strategies for popularizing and developing rehabilitation programs for cancer patients in Japan.

**Keywords:** cancer, current status, nationwide survey, rehabilitation in Japan

## **Introduction**

In the year 2000 it was estimated that there were 538,345 new cancer cases in Japan, and the number of new cases has continued to be high [1]. In 2004 the Ministry of Health, Labour and Welfare inaugurated the “Third 10-Year Comprehensive Anticancer Strategy” and adopted “Improving the Quality of Life (QOL) of Cancer Patients.” as its principal focus. More specifically, the major tasks are 1) to proceed with the development of function-preserving and function-restoring therapy and the development of palliative therapy techniques, and attempt to popularize treatment methods with the aim of relieving cancer patient’s distress, and 2) to prepare a system that makes it possible to provide palliative therapy nationwide for terminally ill cancer patients in an attempt to improve QOL because of the need for support from a mental standpoint. Thus, it appears that there will be an ever greater increase in the need for rehabilitation, including of mental and physical functions, to recover from symptoms and as a response to the needs of patients in the terminal stage [2-4].

As their condition deteriorates cancer patients experience a decrease in physical function, difficulty with movement and daily tasks [5-7], and a decrease in QOL [8-12]. In recent years progress has been made in research on rehabilitation for cancer patients, and an ameliorating effect on QOL has been demonstrated by 1) exercise therapy designed to improve physical function [13-15], 2) psychosocial interventions designed to improve mental and psychological function [16-19], and 3) specialized methods for individual cancers (stoma care after surgery for colorectal cancer [20-22], shoulder exercise therapy for breast cancer patients [23], airway rehabilitation for lung cancer patients [24], training to cope with dysphagia [25] and voice and speech training [26, 27] after surgery for head and neck cancer, and improvement of transfer methods for terminal cancer patients) [28].

However, there has been little comprehensive rehabilitation research in Japan, and no systematic cancer rehabilitation programs have ever been popularized or developed. Thus, it will first be necessary to elucidate the situation regarding the conduct of cancer rehabilitation in health care institutions in Japan and its content. This study was carried out for the purpose of elucidating the current status of cancer rehabilitation at health care institutions nationwide by means of a questionnaire survey.

## **Subjects and Methods**

In March 2006 questionnaires regarding the conduct of cancer rehabilitation were mailed to departments associated with rehabilitation at 1693 health care institutions accredited as acute care hospitals, long-term care hospitals, and multiple care hospitals according to the hospital function evaluation of health care institutions nationwide by the Japan Council for Quality Health Care in December 2005. In May a postcard requesting return of the questionnaire was sent to all health care institutions that had not returned them by the end of April 2006. We adopted as the target population the 1686 facilities that remained after excluding the 7 facilities whose accreditation in terms of the hospital function evaluation by the Japan Council for Quality Health Care had been withdrawn by the end of March 2006.

The survey asked 1) the occupation and number of years of clinical experience of the responder to the questionnaire, 2) whether rehabilitation for cancer patients had been conducted in 2005, and the following in regard to the institutions that had conducted it: 3) the person engaged in rehabilitation (1: physician; 2: nurse; 3: nurse's aid; 4: nursing care worker; 5: physical therapist; 6: occupational therapist; 7: speech therapist; 8: prosthetist; 9: psychotherapist; 10: social worker; 11: psychiatric social worker), 4) type of cancer (primary

cancer only) of the patients receiving rehabilitation (1: brain, nerve, eye; 2: mouth, nose, pharynx, larynx; 3: lungs or bronchi; 4: breast; 5: gastrointestinal tract; 6: liver, gallbladder, pancreas; 7: urinary tract; 8: gynecologic; 9: skin; 10: bone or muscle; 11: blood or lymph); 5) stage of the cancer patients (1: early stage; 2: recurrence or advanced stage; 3: terminal stage), 6) number of patients (new patients only) who received rehabilitation in 2005 according to whether the patient was an inpatient or outpatient (1: fewer than 10; 2: 10 to 49; 3: 50 to 99; 4: 100 or more); 7) content of the rehabilitation (1: gait training; 2: muscle strengthening exercises; 3: range of motion exercises; 4: respiratory and pulmonary physical therapy; 5: analgesia, control of inflammation; 6: prosthetic hand and foot training after limb amputation; 7: guidance and training for activities of daily living (ADL); 8: functional restoration of the upper limb after breast cancer surgery; 9: care for lymphedema; 10: care after surgery for head and neck cancer; 11: stoma care after surgery for colorectal cancer; 12: urostomy care after surgery for urinary tract cancer; 13: creative activities; and 14: psychotherapy and psychological counseling).

The health care institutions that did not conduct rehabilitation for cancer patients in 2005 were surveyed in regard to 8) whether there is a need for rehabilitation for cancer patients, 9) the situations in which they felt a need for rehabilitation for cancer patients (1: when patients request that they would like to stand and walk again; 2: when they teach methods of nursing care to families and caregivers for patients who are transferred to their homes; 3: when patients request that they wish to be able to use the toilet without depending on others; 4: when they wish to devise a method of moving patients who are bedridden and struggle with moving them; 5: when patients are isolated and do not find life worth living; 6: when attempting to deal with psychological distress, such as depression and anxiety; 7: when attempting to deal with mental pain); 10) the reason for the delay in introducing rehabilitation

for cancer patients (1: absence of prescriptions for rehabilitation by attending physicians; 2: insufficient rehabilitation staff; 3: facility and equipment not prepared; 4: no economic support; 5: absence of any scientific basis for the efficacy of rehabilitation for cancer patients; 6: absence of feeling a need for rehabilitation for cancer patients), and 11) whether they had plans to conduct rehabilitation for cancer patients in the future.

The content of the above questions was thoroughly considered and decided on by physicians, nurses, physical therapists, occupational therapists, psychologists, and epidemiologists who are knowledgeable about cancer rehabilitation and involved in the Third Term Comprehensive Control Research for Cancer Project “Development of Strategies to Improve the QOL of Different Types of Patients”.

The 1045 of the 1059 institutions that mailed back the questionnaire and replied to the question asking whether they conducted rehabilitation for cancer patients were used as the denominator to calculate the percentage that conducted rehabilitation for cancer patients. The percentages for each item in the content of the survey on cancer rehabilitation were calculated by using the number of institutions that conducted rehabilitation and the number of institutions that did not conduct rehabilitation, respectively, as denominators.

The following definition of rehabilitation was provided on the first page of the questionnaire: “Rehabilitation means recovery of various abilities, including physical functions, daily living functions, and activities of daily living. Methods include nursing, nursing care, physical therapy, occupational therapy, speech therapy, and counseling. It is not limited to gait training or to muscles and joints, but includes support for daily living and social activities.

## Results

Valid replies were obtained from 1045 (62.0%) of the 1686 institutions nationwide. The most common occupation of those who filled out the questionnaire was physical therapist (78.7%), followed by physician (8.7%), occupational therapist (7.2%), and nurse (1.5%). Other occupations that can be cited are: speech therapist (0.5%), clerical staff (0.2%), and psychologist (0.1%). The proportions of institutions according to number of years of clinical experience of the responder were: 1st to 10th year, 30.9%; 11th to 20th year, 39.6%; 21st year or more, 28.6%. There were no significant differences in reply rates according to region of Japan (Hokkaido Region, 60.2%; Tohoku Region, 59.1%; Kanto Region, 59.5%; Chubu Region, 71.3%; Kinki Region, 64.3%; Chugoku Region, 59.6%; Shikoku Region, 59.0%; Kyushu and Okinawa Region, 63.2%) ( $\chi^2=11.6$ ,  $P=0.11$ ).

### 1) Current status at facilities that conduct rehabilitation for cancer patients

In 2005 rehabilitation for cancer patients was being conducted at 864 facilities (82.7%). Physical therapists (97.3%) accounted for the occupation most commonly employed in departments associated with rehabilitation, and were followed by physicians (74.9%), occupational therapists (64.6%), and speech therapists (57.1%) (table 1).

[Insert table 1 about here]

In the majority of facilities patients with primary cancer at the following sites received rehabilitation: gastrointestinal system (81.4%), lung and bronchi (64.7%), breast (63.4%), brain, nerves, eyes (59.0%), liver, gallbladder, pancreas (56.7%).

The proportions according to the stage of the cancer patients who received rehabilitation

were: recurrence or advanced stage, 86.8%; terminal stage, 84.6%; and early stage in 79.6%, and a high proportion of facilities provided rehabilitation in all three stages.

The proportions of facilities that conducted rehabilitation for inpatients according to the numbers of cancer patients who received rehabilitation (new patients only) were: 10 to 49 patients, 44.9%; fewer than 10 patients, 34.1%; 50 to 99, 10.8%, and 100 or more, 8.1%, and the proportions for outpatients were: fewer than 10 patients, 65.6%; 10 to 49 patients, 8.6%; 50 to 99 patients, 1.4%; and 100 or more patients, 0.3%.

The content of the rehabilitation for cancer patients in terms of physical function consisted of gait training (92.1%), muscle strengthening exercises (88.9%), and range of motion exercises (85.6%), and the rates of conduct of rehabilitation were high. The content in terms of ADL consisted of guidance and training for activities of daily living (ADL) (adjustments to the environment, health care equipment, self-help devices)(73.6%), and the rates of conduct of rehabilitation were high. The results for content in terms of postoperative care showed that functional restoration of the upper limb after breast cancer surgery was performed at more than half of the facilities (56.6%), but that there were low rates of conduct of care for lymphedema (43.4%), care after surgery for head and neck cancer (14.8%), stoma care after surgery for colorectal cancer (10.3%), and urostomy after surgery for urinary tract cancer (5.4%).

The rates for conduct of content focused on patients' mental and psychological aspects were low, and the content consisted of creative activities (recreation, music, painting, handicrafts, etc.) (24.4%) and of psychotherapy and psychological counseling (7.6%) (table 2).

[Insert table 2 about here]

## 2) Current status at facilities that do not conduct rehabilitation for cancer patients

There were 181 facilities that did not conduct rehabilitation for cancer patients in 2005. Of them, 171 health care institutions (94.5%) replied “yes” to the question asking whether rehabilitation is needed for cancer patients. Only 2 (1.1%) replied “no”, that it is not needed; the other 8 facilities (4.4%) did not reply to the question.

Of the 171 facilities that replied that there is a need for cancer rehabilitation, the highest percentage, 69.1%, replied that the occasion when they felt the need for rehabilitation was “when patients request that they would like to stand and walk again”. Other replies that exceeded 50% were: “when teaching methods of nursing care to families and caregivers for patients who are transferred to their homes”, “when patients request that they wish to be able to use the toilet without depending on others”, “when wishing to devise a method of moving patients who are bedridden and struggling to move them” (table 3).

[Insert table 3 about here]

More than half of the institutions, 50.8%, gave “absence of prescriptions for rehabilitation by attending physicians” as the reason for the delay in introducing rehabilitation for cancer patients, and other reasons were “insufficient rehabilitation staff”, 30.4%; “institution and facilities not prepared”, 27.1%; “absence of economic support”, 23.8%; “absence of any scientific basis for the efficacy of rehabilitation for cancer patients”, 19.9%; and “do not feel any need for rehabilitation for cancer patients”, 5.5%.

Twenty-two (12.2%) of the 181 facilities replied that they “have plans” to perform rehabilitation for cancer patients, while 58.6% “have no plans” to perform it, 23.2% are “considering it”, and 6.1% did not reply.

## Discussion

In this study a survey targeting health care institutions in Japan was conducted in order to determine the current status of rehabilitation for cancer patients. The results showed that rehabilitation for cancer patients is being conducted at more than 80% of the facilities and that approximately 95% of the facilities where it was not being conducted in 2005 recognized the need for it. Thus, it was found that both the rate of conduct of cancer rehabilitation in Japanese health care institutions and the need for it are high.

The percentages of facilities according to the content of the rehabilitation they conducted for cancer patients were, in descending order: gait training, muscle strengthening exercises, range of motion exercises, and guidance and training for ADL. On the other hand, while the rate for conduct of functional restoration of the upper limb after breast cancer surgery as postoperative care exceeded 50%, the rates for conduct of specialized rehabilitation in the form of care for lymphedema, care after surgery for head and neck cancer, stoma care after surgery for colorectal cancer, and urostomy after surgery for urinary tract cancer were low. These findings regarding the current status of rehabilitation for cancer patients in Japan demonstrate that rehabilitation is conducted for the purpose of enabling basic living activities, but they also suggested that specialized rehabilitation programs for cancer may not have been widely adopted. In the future it will be necessary to make an effort to popularize rehabilitation for individual types of cancer and after cancer therapy.

The three points described below can be cited as the merits of this study. First, this is the first study to assess a survey of the current status of cancer rehabilitation in Japan. The results of this survey have demonstrated the current status of the conditions of conduct and the content of cancer rehabilitation in health care institutions, and they have clarified the need to

consider strategies for popularizing and developing rehabilitation programs for cancer patients. Second, letters urging institutions to reply were sent out to the target institutions in order to increase the reply rate in this study, and since a high reply rate of 62.5% was achieved with no significant differences in reply rate among the regions, the results of this study appear to reflect the situation in Japanese health care institutions as a whole. Third, the questions in the survey were carefully examined by a study group that was well versed in rehabilitation, and the questions were drawn up based on a thorough assessment by physicians, nurses, physical therapists, occupational therapists, psychologists, and epidemiologists. Thus, the questions that were posed incorporated the opinions of each occupation, and they appear to better reflect the current status of cancer rehabilitation.

The following three points can be cited as limitations of this study. First, according to occupation, physical therapists accounted for the highest proportion of persons who filled out the questionnaire (78.7%). Although physical therapists were found to be the major occupation that conducts rehabilitation for cancer patients, the replies regarding the conduct of rehabilitation in this survey may have been biased toward the occupation of physical therapist. Second, the definition of rehabilitation may have been vague. A definition of rehabilitation was stated in the questionnaire (see “Methods”), but the definition of rehabilitation may vary from individual to individual and from occupation to occupation, and as a result there may have been slight changes in the rates of conduct of rehabilitation and rates of conduct of the content of the rehabilitation. Thus, caution is required when interpreting the results of this questionnaire. Third, analysis according to hospital size and type (university hospital, general hospital, specialized hospital, etc.) was impossible in this study, and the possibility of the content of the rehabilitation differing according to the size and characteristics of the hospital cannot be ruled out.

Based on the above points, in order to popularize rehabilitation for cancer patients in the future it will first be necessary to establish its validity according to cancer type, cancer stage, and method of cancer therapy. It will also be necessary to assess how to popularize cancer rehabilitation according to method of cancer therapy.

## **Conclusions**

The results of a survey of the status of rehabilitation for cancer patients in health care institutions in Japan showed that more than 80% of them conducted it. The highest proportions in regard to content were related to physical function and daily living. Many of the facilities where it was not being conducted felt a need for it. Based on the results of this survey it appeared necessary to assess strategies for popularizing and developing rehabilitation programs for cancer patients.

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Table 1. Percentages of institutions according to the occupations of persons engaged in departments associated with rehabilitation (n=864)

Occupation	No. of institutions	(%)
Physical therapist	841	97.3
Physician	647	74.9
Occupational therapist	558	64.6
Speech therapist	493	57.1
Nurses' aide	137	15.9
Nurse	131	15.2
Social welfare worker	69	8.0
Psychotherapist	46	5.3
Prosthetist	28	3.2
Nursing care worker	23	2.7
Psychiatric social worker	9	1.0
Other	294	34.0

Table 2. Numbers of institutions according to the content of the rehabilitation conducted for cancer patients

Content		No. of replies	(%)
Physical function	Gait training	796	92.1
	Muscle strengthening exercises	768	88.9
	Range of motion exercises	742	85.9
	Respiratory and pulmonary physical therapy	536	62.0
	Analgesia, control of inflammation, etc.	433	50.1
	Prosthetic hand and foot training after limb amputation or dissection	193	22.3
Daily living	Guidance and training for activities of daily living (ADL) (including adjustment of the environment, health care equipment, self-help devices)	636	73.6
Care after cancer surgery	Restoration of upper limb function after breast cancer surgery	489	56.6
	Care for lymphedema	375	43.4
	Care after surgery for head and neck cancer	128	14.8
	Stoma care after surgery for colorectal cancer	89	10.3
	Urostomy after surgery for urinary tract cancer	47	5.4
Mental and psychological aspects	Creative activities (recreation, music, painting, handicrafts, etc.)	211	24.4
	Psychotherapy and psychological counseling	66	7.6

Table 3. Occasions when the need for cancer rehabilitation was felt (n=171)

Occasion	No. of replies	(%)
• When patients request that they would like to stand and walk again	125	68.3
• When teaching methods of nursing care to families and caregivers for patients who are transferred to their homes	123	67.2
• When patients request that they wish to be able to use the toilet without depending on others	119	65.0
• When wishing to devise a method of moving patients who are bedridden and struggling to move them	102	55.7
• When patients are isolated and do not find life worth living	85	46.4
• When attempting to deal with psychological distress, such as depression and anxiety	82	44.8
• When attempting to deal with mental pain	48	26.2
• Others	20	10.9