

## REVIEW ARTICLE

# History of rehabilitation professional training and current status of training schools

Masatoshi TAKEDA,<sup>1</sup> Kayo MATSUO,<sup>2</sup> Kenji OKA<sup>2</sup>

<sup>1</sup>President, Osaka Kawasaki Rehabilitation University,

<sup>2</sup>Lecturer, Osaka Kawasaki Rehabilitation University

*Correspondence:* Masatoshi Takeda, President, Osaka Kawasaki Rehabilitation University, 158 Mizuma, Kaizuka, Osaka 597-0104, Japan. E-mail: masatakeda@kawasakigakuen.ac.jp

*Disclosure:* There is no conflict of interest to declare

**Key words:** *rehabilitation, national examination, physical therapist, occupational therapist, speech therapist*

The articles by Hideyuki Saito (the President of Japan Association of Physiotherapists), Haruki Nakamura (the President of Japan Association of Occupational Therapists), and Junich Fukaura (the President of Japan Speech and Hearing Therapists) included in this volume of *Cognition & Rehabilitation* are valuable collection of insights from rehabilitation experts pointing out the direction of education, research, and clinical practice in the field of rehabilitation in Japan, with excellent discussions indicating measures for building a new era of rehabilitation. We would like to describe the current status of training schools for physical therapists (PT), occupational therapists (OT), and speech and hearing therapists (ST) in Japan and our university's efforts so that the readers can fully understand the meaning of the articles by experts in this field.

## INCREASING NUMBER OF REHABILITATION PROFESSIONALS IN JAPAN

In recent years, the number of healthcare professionals in Japan has been increasing. The Ministry of Health, Labour and Welfare (MHLW) published

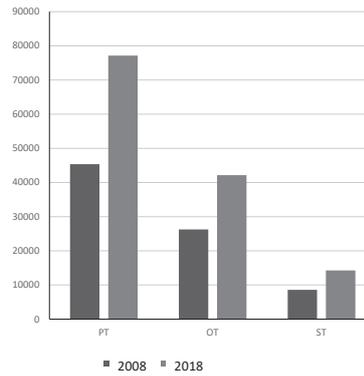
### Abstract

The number of rehabilitation professionals in Japan has increased 1.6-1.7 times in the last decade, and there are about 80 thousand physical therapists (PTs), about 45 thousand occupational therapists (OTs), and about 15 thousand speech therapists (STs) are actively involved in rehabilitation service. Rehabilitation professionals were enacted by law in 1965 for PTs and OTs, and in 1999 for STs. Initially, training was mainly conducted at vocational schools, but in recent years training of rehabilitation professionals has become mainstream at four-year universities. In March 2021, the 56th PT / OT National Examination and the 23rd ST National Examination were held, and 9,434 PTs, 4,510 OTs, and 1,766 STs were newly born. The passing rate of national examination was 79% for PT, 81.3% for OT, and 69.4% for ST, respectively. Osaka Kawasaki Rehabilitation University is a college specializing in the training of rehabilitation professionals, and future rehabilitation professionals will expand their activities from hospitals to communities, and further to the primary and the secondary prevention. Considering more comprehensive ability among PT, OT, and ST will be required, we will prepare the education program focusing the future of rehabilitation.

the number of medical professionals in 2018 (Heisei the 30rd); about 300,000 doctors, 230,000 pharmacists, 1,210,000 nurses, and about 135,000 rehabilitation professionals (PT, OT, and ST). As you will see later, the number of rehabilitation professionals has increased 1.6-1.7 times in the past decade, while the number of physicians has hardly increased.

The breakdown of rehabilitation professionals at work was 77,140 PTs, 42,136 OTs, and 14,252 STs in 2008. Note that this number is smaller than the number of members of the Japan Physical Therapists' Association, the Japan Occupational Therapists' Association, and the Japan Speech-Language-Hearing Therapists' Association because it is the number of people engaged with medical care and does not include those who are not presently working. Comparing the number of people engaged in medical care with that of 2008 (10 years ago), the number of physicians increased slightly and the number of pharmacists decreased, but the number of rehabilitation professionals all increased significantly (170% for PTs, 160% for OTs, and 166% for STs) (Figure 1).

Year	PT	OT	ST
2008	45,358	26,261	8,583
2018	77,140	42,136	14,252
	170 %	160 %	166 %



**Figure 1.** Increase in number of rehabilitation professionals (PT, OT, ST) from year 2008 to year 2018.

### HISTORY OF QUALIFICATION FOR REHABILITATION PROFESSIONALS

In 1963, the Rehabilitation Academy affiliated to the National Sanatorium Tokyo Hospital was opened in Kiyose city, Tokyo, which was Japan’s first school for training PT and OT. At that time, there was neither rehabilitation schools nor rehabilitation specialists in Japan, and American or European specialists were invited to educate rehabilitation specialists in Japan, including Ms. Nicone dispatched from the WHO. In the pioneering period of rehabilitation professional training, vocational schools were opened in some national hospitals in Osaka and some other major cities in Japan.

The Physical Therapist and Occupational Therapist Act was enacted in 1965, and the first national examinations for PTs and OTs were held in 1966. In 1966, 183 PTs and 20 OTs passed the first national examinations. The following year, the Japanese Physical Therapy Association and the Japanese Association of Occupational Therapists were established.

In 1979, the Department of Physical Therapy and the Department of Occupational Therapy were newly established in the Kanazawa University Junior College of Medical Technology, which was the first school to educate rehabilitation professionals in junior colleges. In 1992, the Department of Physical Therapy and the Department of Occupational Therapy were opened in the Faculty of Medicine and Health Sciences of Hiroshima University, and the first four-year university training for PT and OT was started. In the 1990s, the Governmental deregulation led to the spread of four-year colleges throughout Japan.

The national qualification for ST delayed 33 years compared with those for PT and OT. The first national

examination for ST was held in 1999, and the Japanese Association of Speech, Language, and Hearing Therapists was established in 2000.

As of 2021, the Japan Physical Therapists Association holds about 130,000 members, the Japan Occupational Therapists Association 63,000 members, and the Japan Speech-Language-Hearing Association 20,000 members.

### WORK OF REHABILITATION PROFESSIONALS

The work of PTs, OTs, and STs used to be limited in the medical field, but recently the number of rehabilitation professionals working in the nursing care field has been increasing. Figure 1 shows the ratio of the three types of rehabilitation professionals, divided into the medical field and the nursing care field.

Looking at the ratio of medical and nursing care fields for each rehabilitation professional, 84% of PTs, 82% of OTs, and 85% of STs work in the medical field, while 16% of PTs, 18% of OTs, and 15% of STs work in the nursing care field. More professions are expected to enter the nursing care field in near future, but at this point, OTs seem to have a slightly higher percentage of people working in the nursing care field (Figure 2).

The guidelines for calculating the rehabilitation fee are set by national health insurance in Japan. Considering the fact that the ratio of PTs, OTs, and STs working at medical service is 6:3:1, the medical fee for rehabilitation is expensed correspondingly to the number of rehabilitation specialists. The rehabilitation fee for disuse syndrome was established as a new calculation frame in 2018.

Figure 3 shows the ratio of diseases targeted by re-

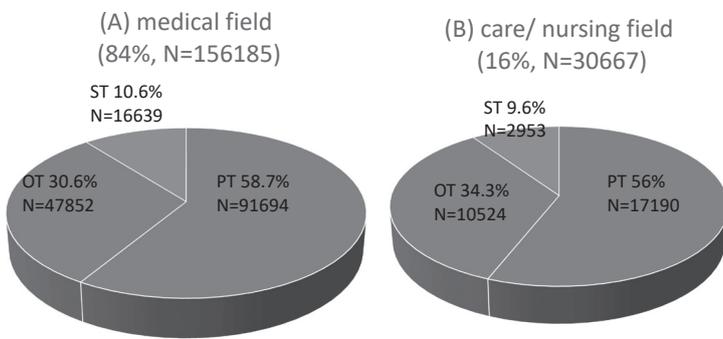
habilitation professionals (PT, OT, and ST). More than 80% of the rehabilitation fee by target disease is accounted for by motor dysfunction and cerebrovascular disease followed by the newly established disuse syndrome.

### HOW TO BECOME A REHABILITATION SPECIALIST

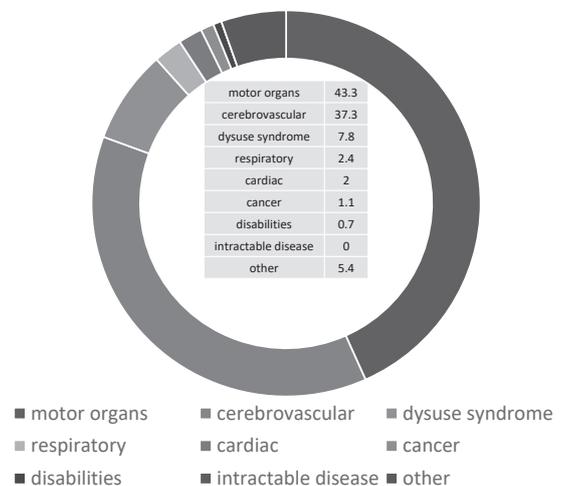
PTs, OTs, and STs are all nationally qualified professionals that have been granted monopoly on their names. To become a rehabilitation specialist, a candi-

date must graduate from a training school that meets the designated requirements and pass the national examination.

In March 2021, the 56th national examinations for PT and OT and the 23rd national examinations for ST were held to produce 9,434 PTs, 4,510 OTs, and 1,766 STs with the passing rate of 80% for PT and OT, and 70% for ST. The passing rate for ST seems a little low in the year 2021, which has been declining for the past three years. The passing rate for ST, however, was close to 80% in 2018.



**Figure 2.** Physical, Occupational, and Speech Therapists working in medical fields (A) and nursing/ care fields (B).

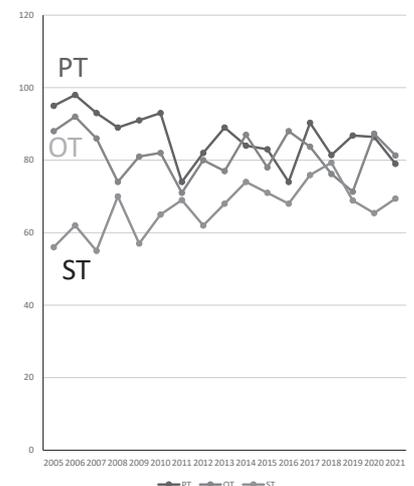


**Figure 3.** Rehabilitation fee reimbursed by target disorders.

**Table 1.** Results of the 56th National Exam for PT/OT and The 22th National Exam for ST (2021)

	Applicants	Qualified	Passing rate
PT-all	11946	9434	79.00 %
(PT-new graduates only)	10522	9093	86.40 %
OT-all	5549	4510	81.30 %
(OT-new graduates only)	4895	4345	88.80 %
ST-all	2546	1766	69.40 %

Year	PT	OT	ST
2005	95	88	56
2006	98	92	62
2007	93	86	55
2008	89	74	70
2009	91	81	57
2010	93	82	65
2011	74	71	69
2012	82	80	62
2013	89	77	68
2014	84	87	74
2015	83	78	71
2016	74	88	68
2017	90.3	83.7	75.9
2018	81.4	76.2	79.3
2019	86.8	71.3	68.9
2020	86.4	87.3	65.4
2021	79	81.3	69.4
mean	86.4	81.4	66.8



**Figure 4.** Changes in passing rate of national exams for PT, OT, and ST (2005-2021).

## TRAINING OF PHYSICAL THERAPISTS

PTs specialize in “human movement.” When the qualification was first established in Japan, 90% of PTs were men; however, the ratio of men to women was about 6 to 4 in 2020. In most European countries and in the United States, the ratio of female PTs is quite high (70-80%). The ratio of male PTs is still high in Japan, but women can also play an active role in this medical profession.

When the qualification of PT was first created, most PTs belonged to medical facilities and helped people admitted into hospital to return to society. When the long-term care insurance was introduced in 2000, the number of PTs belonging to the long-term care facilities increased. In addition, the community comprehensive care system has been pushed forward since 2014, and PTs have become more actively involved to support the health of the elderly in community, aiming for care prevention. Now people are enjoying the era of 100 years of life, and the field of PT's job is expanding to include preventive areas such as nursing care prevention and the primary and the secondary prevention of diseases.

The United States (198,686) has the largest number of PTs in the world, followed by Germany (136,000) and Japan (100,560) in the third place. In terms of the ratio of PTs to the population, Japan is one of the countries where PTs are actively working.

Currently, there are 261 training schools for PTs in Japan. These schools are classified into 149 vocational schools, 6 junior colleges, and 106 four-year universities, and the number of vocational schools is still high. The student capacity of these schools is also increasing, and about 10,000 new PTs are born every year.

## TRAINING OF OCCUPATIONAL THERAPISTS

There are approximately 110,000 OTs in the United States, 60,000 in Japan, 40,000 in Germany, 35,000 in the United Kingdom, 20,000 in Brazil, 20,000 in Australia, and 20,000 in Canada. Japan is the country with the second largest number of OTs after the United States. The World Federation of Occupational Therapists (WFOT) is a professional association of occupational therapists established in 1952, and the Japan Association of Occupational Therapists has become a member of WFOT in 1972. WFOT publishes minimum educational standards, and “Minimum Standards for Occupational Therapist Education 2016 Revision” was published in 2016. Training schools for OTs in Japan will be accredited if they meet the quali-

fications above.

The number of OTs per 100,000 population is 6-12/100,000 in the Nordic countries such as Denmark, Sweden, Iceland and Norway, and 5-6/100,000 in the UK, Australia and New Zealand. The number of OTs per 100,000 is 4.5 in Japan, which is about the same as in Germany (4.3) and the United States (3.5).

There are 209 training schools for OTs in Japan, of which 111 are vocational schools, 4 are junior colleges, and 94 are four-year universities. There are more universities than vocational schools in urban areas such as Kanto area (19:25), Chubu area (14:18), and Kinki area (13:22), while in rural areas such as Hokkaido (7:6), Tohoku (8:6), Chugoku (12:7), Shikoku (10:1), and Kyushu (28:9), vocational schools are more common. (The number of training schools in each region is shown in parentheses (vocational school:university)). The capacity of students per grade in OT training schools seems to be 40 or less in many universities and vocational schools.

## TRAINING OF SPEECH THERAPISTS

A speech therapist (ST) is a professional who provides rehabilitation to people who are unable to speak, hear, or eat due to illness or disability. They are helping people who cannot speak, listen, or eat well due to illness or disability with specialized rehabilitation service.

STs work with a wide variety of patients, including those who have aphasia due to stroke, children with delayed language development, those with communication problems due to hearing impairment, and those with eating disorders or difficulty swallowing food. STs provide training and guidance so that patients can lead their own lives independently. The age of the patients ranges from children to adults, and specialized knowledge of the increasing number of elderly people is also required.

Patients with similar disabilities often have different causes and degrees of disability. Therefore, STs are required to determine what kind of training and guidance should be provided to each patient through individual counseling.

The work of ST is highly specialized and involves identifying the mechanisms of speech, hearing, voice, cognitive, developmental, and feeding and swallowing disorders by conducting tests and evaluations. After close evaluation, STs are expected to provide training, guidance, and support as needed. For this reason, in the United States, the qualifications for STs are divided into two specialties; speech-language

therapists and audiologists. A master's degree or higher is required for certification in the United States.

There are 74 schools for training STs in Japan, including 40 vocational schools, 2 junior colleges, and 32 four-year universities. In the Kinki area, there are 8 universities and 10 vocational schools. In Osaka prefecture, there are 5 universities: Osaka Kawasaki Rehabilitation University, Osaka University of Health and Welfare, Osaka University of Human Sciences, Kansai University of Social Welfare Sciences, and Yamato University. There are three vocational schools for STs.

## POSITIONING OF OSAKA KAWASAKI REHABILITATION UNIVERSITY

As mentioned earlier, the ratio of rehabilitation professionals among PTs, OTs, and STs is roughly 6:3:1. Among rehabilitation professionals, the number of PTs is the highest, and many people in general society think of PTs when they think of rehabilitation professionals. However, OTs and STs also play important roles as rehabilitation professionals.

Rehabilitation has been expanding its scope from the medical to the nursing and the caring field and from hospital-centered service to community-centered service. As is expressed by opinion leaders in rehabilitation, as well as in the following articles by Saito, Nakamura, and Fukaura, rehabilitation service is comprehensive in nature and should be a holistic service. For a long time, PTs have been focusing on basic motor functions of limbs and joints, OTs on activities of daily living using limbs, and STs on speech

and hearing functions. It used to be ridiculed that PTs were in charge of the “lower half of the body,” OTs were “upper half of the body,” and STs were “neck and above” rehabilitation. However, this situation is drastically changing, and as rehabilitation professionals move out of hospitals to provide services within a comprehensive community system, it is even harmful to be too focused on each specialty. PTs, OTs, and STs are all required to provide holistic rehabilitation service.

Osaka Kawasaki Rehabilitation University was established in April 2006 as the first university in Japan to bear the name of “rehabilitation.” Since the opening of the university, we have positioned rehabilitation as a comprehensive field of study and have trained rehabilitation professionals in the fields of PT, OT, and ST, all of which are indispensable. We believe it is important to teach knowledge and train skills of rehabilitation professionals in all areas of specialties including PT, OT, and ST. It is important to have three majors in the training program for rehabilitation professionals and let students study the educational content of other majors. With this in mind, Osaka Kawasaki Rehabilitation University has stubbornly maintained its enrollment capacity of 60 students in the Physical Therapy major, 60 students in the Occupational Therapy major, and 40 students in the Speech and Hearing Sciences major since its opening.

As we mentioned earlier, there are 261 training schools for PTs (149: 6 :106), 209 training schools for OTs (111: 4: 94), and 74 training schools for STs (40: 2: 32) in Japan. (The actual number of voca-

**Table 2.** List of Training schools with admission capacity of more than 40 OTs

	Location	Open year	University	Capacity for OT	Accreditation by WFOT	ST training course	Rehabilitation graduate school
1	Miyagi	1999	Tohoku Bunka Gakuen U	60	Yes	Yes	Yes
2	Fukushima	2019	Iryo Sosei U	60	*	No	Yes
3	Tochigi	1995	Kokusai Iryo Fukushi U	80	Yes	Yes	Yes
4	Saitama	2005	Mejiro U	60	Yes	Yes	Yes
5	Tokyo	2002	Heisei Teikyo U	60	Yes	Yes	Yes
6	Tokyo	2020	Tokyo HokenIryo U (professional)	80	*	No	No
7	Niigata	2001	Niigata Iryo Fukushi U	50	Yes	Yes	Yes
8	Yamanashi	2003	Kenko Kagaku U	80	Yes	No	No
9	Aichi	2004	Fujita Ika U	45	Yes	No	Yes
10	Osaka	2006	Osaka Kawasaki Rehabilitation U	60	Yes	Yes	Yes
11	Osaka	2011	Kansai Fukushi Kagaku U	50	Yes	Yes	No
12	Okayama	1995	Kawasaki Iryo Fukushi U	60	Yes	Yes	Yes

\* World Federation of Occupational Therapist(WFOT) accreditation is given after the first graduates finish the course.

tional schools: junior colleges: four-year universities are shown in parentheses). The number of training schools for PTs is the largest, and each training school accepts a wide range of students, from 40 to 120 students. The number of training schools for STs is the smallest, and there are only 32 four-year universities training STs in Japan.

Most training schools for OT have an admission capacity of 40 students. There are only 12 four-year colleges and universities in Japan that offer more than 40 students to be trained for OTs. Table 2 shows the universities for training OTs with enrollment limits greater than 40 students, in order from north to south in Japan. We have included the number of students enrolled and whether the program is accredited by

the World Federation of Occupational Therapists (WFOT). All of the training schools listed here have programs for PTs, but some have programs for STs and others do not.

In addition, Osaka Kawasaki Rehabilitation University will open a graduate school in April 2022, and we have listed whether or not each university has graduate school for rehabilitation (Table 2). From this table, Osaka Kawasaki Rehabilitation University is one of few educational institutions aiming for training comprehensive rehabilitation professionals, making efforts to train PTs, OTs and STs. Osaka Kawasaki Rehabilitation University will continue to function as a leading educational institution for comprehensive rehabilitation professionals aiming for future rehabilitation.