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REVIEW ARTICLE

The Significance of Comprehensive Rehabilitation

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ABSTRACT

The problems faced by persons with disabilities are not simple. Rehabilitation has been implemented to solve such complicated problems, and rehabilitation doctors may feel pressure because rehabilitation needs to be implemented comprehensively, from the beginning. In this study, the meaning of comprehensive rehabilitation will be explained, and simultaneously, the intention of adding the word “comprehensive” to rehabilitation will be explored.

Comprehensive rehabilitation is composed of four dimensions; medical rehabilitation, educational rehabilitation in the aspect of social welfare, vocational rehabilitation, and social rehabilitation. Comprehensive rehabilitation can be understood in terms of its five aspects; life stage, treatment stages, features of the changes in disabilities over time, rehabilitation program, team members. Rehabilitation has to be carried out comprehensively, from the beginning, and also it needs to be considered seriously and continuously how to make a proper referral to other medical practitioners and how to network with other medical practitioners, administrators, social workers, and medical staffs.

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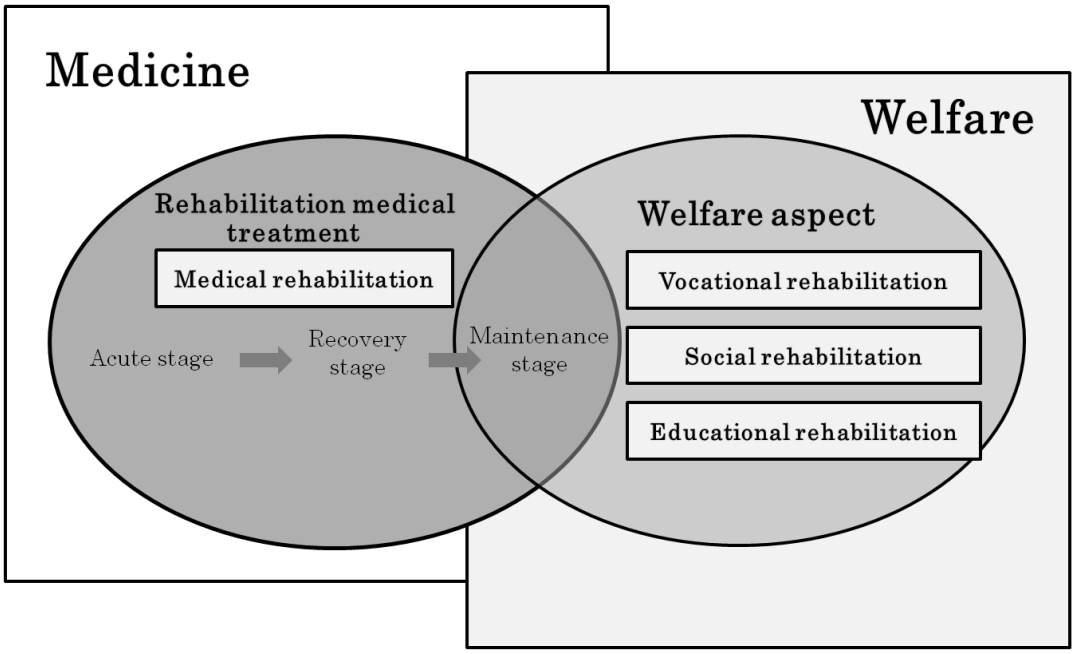
Ⅰ. Introduction

The purpose of rehabilitation is to help patients live a safe and pleasant life even though they have disabilities. World Health Organization (WHO) defined rehabilitation as including all the measures aimed at reducing the impact of disabling and handicapping conditions, and at enabling the disabled and handicapped to achieve social integration. Rehabilitation aims not only at training disabled and handicapped persons to adapt to their environment but also at intervening in their immediate environment and society as a whole to facilitate their social integration. The disabled and handicapped themselves, their families, and the communities they live in should be involved in the planning and implementation of services related to rehabilitation. WHO's definition of rehabilitation has been used frequently and internationally [1].

The problems faced by persons with disabilities are not simple. Rehabilitation has been implemented to solve such complicated problems, and rehabilitation doctors may feel pressure because rehabilitation needs to be implemented comprehensively, from the beginning. Stedman's Medical Dictionary defines comprehensive medical care as a concept that includes not only the traditional care of acutely or chronically ill patients but also the prevention and early detection of disease and the rehabilitation of the disabled, but it does not include the term *comprehensive rehabilitation*. The term *comprehensive rehabilitation* has frequently been used of late in the process of the rehabilitation of persons with internal organ impairment, including respiratory and circulatory disorders [2]. In this study, the meaning of comprehensive rehabilitation will be explained, and simultaneously, the intention of adding the word "comprehensive" to rehabilitation will be explored.

Ⅱ. Four Dimensions of Rehabilitation

Rehabilitation needs to be carried out in four dimensions; medical rehabilitation, educational rehabilitation in the aspect of social welfare, vocational rehabilitation, and social rehabilitation (see Figure 1) [3].



<Figure 1> Four aspects of rehabilitation (figure contents quoted from reference [3)].

1. Medical rehabilitation

Medical rehabilitation aims to help patients recover from and reduce their functional disorders, and to facilitate their ability to adapt to maintain and improve their body-mind functions. Rehabilitation is generally divided into three stages: the acute, recovery, and maintenance stages. During the acute stage of rehabilitation, which is the early stage, it is important to prevent secondary complications such as disuse syndrome[1] that occur while the patients are lying on a sickbed in a hospital. The recovery stage of rehabilitation refers to the process of intensively recovering the functions when the symptoms of diseases are relatively stabilized. The maintenance stage begins when the functions have reached a certain level and when social life starts again. During this stage, it is important for measures to prevent the aggravation and recurrence of disabilities to be carried out simultaneously in the aspects of social welfare and medicine.

2. Educational rehabilitation

Educational rehabilitation needs to be implemented based on the concept of equal educational opportunities. The cultivation of special education teachers or the maintenance of educational facilities for persons with disabilities have been steadily established by the education boards and schools in Todofuken (都道府県)[2] or Shichoson (市町村)[3]. As with the special support for education schools, support for general schools

[1] Disuse syndrome: Decrease of the body-mind functions due to long-term disuse
[2] Todofuken (都道府県): The country's 47 first-order subnational jurisdictions on a state or provincial level (http://en.wikipedia.org/wiki/Prefectures_of_Japan)
[3] Shichoson (市町村): The subdivisions of prefectures under the current Local Autonomy

is also important; the number of students with disabilities who are part of inclusive-education or general classes has rapidly increased. To solve the education-related problems of children with disabilities, it is important for special education teachers and medical personnel to communicate with each other.

3. Vocational rehabilitation

Vocational rehabilitation aims to reinstate the employment of persons with disabilities. Vocational rehabilitation centers, job centers for persons with disabilities, vocational schools for persons with physical disabilities, vocational aid centers[4], and sheltered workshops for persons with disabilities[5] have played significant roles in the vocational rehabilitation of persons with disabilities. Vocational rehabilitation consists of eight stages: vocational evaluation, which is the process of understanding vocational ability; vocational guidance in choosing the job that fits the abilities of persons with disabilities, and helping them adjust to the workplace by providing them opportunities for practice, guidance, advice, and information; training for vocational preparation for persons with disabilities to learn the basic rules of etiquette at the workplace; vocational training and courses to help persons with disabilities systemically acquire skills or knowledge for getting a job; job placement to help them find proper jobs and to ensure appropriate working conditions; sheltered employment to provide part-time jobs for persons with disabilities, or jobs that will enable them to work with special considerations; and follow-up guidance, where the results of the vocational guidance, training, and job placement are evaluated and reviewed.

4. Social rehabilitation

In social rehabilitation, the economic or social conditions are arbitrated to facilitate the smooth implementation of all the processes of medical, educational, and vocational rehabilitation. Social rehabilitation includes social welfare services such as long-term care service or daycare services, maintenance of the housing and local environment, and provision of assistive devices and support for participation in social activities such as sports or recreation programs. Community rehabilitation, which embraces the system for the networking of medical and welfare facilities, public health centers, and local autonomous entities, and for encouraging the active participation of the local residents, is critical. Elderly persons with disabilities may use various services through the long-term care insurance system.

Law (http://en.wikipedia.org/wiki/Prefectures_of_Japan).

[4] A vocational aid center (授産施設): A center that provides opportunities to learn skills, to work, and to live an independent life to persons who cannot find a job due to physical or mental disabilities or family problems.

[5] Sheltered workshop for persons with disabilities: A type of vocational aid center where persons with disabilities can work based on their employment contract with their employer.

Ⅲ. Comprehensive Rehabilitation

The term *comprehensive rehabilitation,* which has various meanings, has come to be used frequently of late, but a consensus on its definition has yet to be reached. Comprehensive rehabilitation can be understood in terms of its five aspects (see Table 1) [4].

<Table 1> Five aspects of comprehensive rehabilitation
(table contents quoted from reference 4)

1	Life stage
2	Treatment stage
3	Features of the changes in disabilities over time
4	Rehabilitation programs
5	Team members

1. Life stage

In the aspect of life stage, rehabilitation can be divided into the four aforementioned dimensions: medical, educational, vocational, and social rehabilitation. This kind of classification is considered the closest to the concept used by medical rehabilitation personnel, which claims that rehabilitation has to begin from the very beginning. In the concept of comprehensive rehabilitation based on life stage, comprehensive rehabilitation includes very extensive areas and takes a long time, which can be considered the true rehabilitation. Even though this concept is correct, however, it is too abstract and general to be made the basis of a roadmap for comprehensive rehabilitation.

2. Treatment stages

Rehabilitation treatment can be divided into the acute, recovery, and maintenance stages of rehabilitation. This type of classification also falls under medical rehabilitation, which is a familiar concept to rehabilitation medical doctors. The definitions of the acute, recovery, and maintenance stages of rehabilitation, however, differ by disease. For example, in the case of stroke, the acute stage ends when the patients can already sit down on a wheelchair for about 30 minutes and start rehabilitation training at the rehabilitation room after the stroke occurrence, and the rehabilitation begins on a sickbed; the recovery stage ends when the patients can return home or can be admitted to a facility since the beginning of rehabilitation training; and the maintenance stage begins when the patients start staying at home or are admitted to a facility. In the meantime, in the case of cardiac rehabilitation, the acute stage (phase 1) is from the occurrence of circulatory diseases (i.e., cardiac infarction, the day of operation) to the discharge from the ICU or CCU; the former part of the recovery stage (phase 2) is the period where the

patients stay at a general ward for patients with circulatory diseases, and the latter part of the recovery stage (phase 2) is the period of outpatient treatment; and the maintenance stage (phase 3) begins when the patients return to their home and live with a community for their entire life. Like these examples, the period and contents of rehabilitation may differ by disease [4].

3. Features of the changes in disabilities over time

The number of persons with physical disabilities who were 18 years old and over in 2006 was 3,483,000, and the number of those under 18 years old was 93,100 [5]. The changes in disabilities over time have come to have two features of late: first, the number of superaged population or patients with arteriosclerotic diseases has increased of late, and among them, the number of persons with internal organ impairment has rapidly increased (persons with visceral impairment accounted for 93% of the increase in the number of persons with physical disabilities for five years); and second, the numbers of persons with multiple disabilities (increased by 77% for five years) and particularly of persons with both mobility disorder and visceral impairment have increased. That is, the era has come where rehabilitation treatment alone based on the treatment of the internal organs or the recovery of the motor functions is not satisfactory [4].

Rehabilitation medical doctors need to acquire the knowledge and experiences that will enable them to prescribe exercises applying FITT (frequency, intensity, time duration, and type of exercise), and should network with the professionals in other rehabilitation-related fields or other disciplines.

4. Rehabilitation program

The rehabilitation program is similar to comprehensive rehabilitation in that the rehabilitation medical personnel in charge of rehabilitation from respiratory and circulatory disorders also take part in it. For example, cardiac rehabilitation in the recovery stage has come to proceed of late with a comprehensive set of programs, including medical evaluation, proper exercise prescription, exercise therapy, medication, diet therapy, education for patients, and counseling, which can be called *comprehensive rehabilitation*. As the hospitalization period in the acute stage of cardiac rehabilitation has decreased owing to the advancement of the revascularization of the coronary artery and the management method of acute coronary syndrome, the necessity of cardiac rehabilitation in the recovery stage that provides comprehensive care has increased. Cardiac rehabilitation in the comprehensive recovery stage that includes diverse programs has presented remarkable effects, including increased exercise ability, improved coronary heart disease, blood circulation in the coronary artery, weakening of the risk factor of the coronary artery, improvement of the vital prognosis, and increased QOL [6].

The basic elements of general rehabilitation from stroke include physical, exercise,

occupational, and speech and hearing therapy based on the rehabilitation prescription. Even though exercise therapy plays a central role in cardiac rehabilitation and has proven positive effects in improving various physical functions [7], it has not shown effectiveness for smoking cessation and for decreasing fat, obesity, and high blood pressure, and has not weakened their risk factors and prevented disease recurrence [8]. That is, rehabilitation has shown apparent effectiveness only when it is carried out with a set of programs; it cannot be fully accomplished by only one therapy, such as exercise or occupational therapy, but by a set of programs, including medication, diet therapy, education for patients, counseling, etc. as well as exercise and occupational therapy. This set of programs is called *comprehensive rehabilitation*. It is also called *comprehensive cardiac rehabilitation* and *comprehensive respiratory rehabilitation* according to the diseases that caused the disorders or problems.

When formulating a comprehensive rehabilitation program, the adherence to the plan needs to be strengthened to facilitate the improvement of the patients' life habits [9]. To help the patients stick to the plan, the improvement goals need to be calibrated according to the patients' self-management ability, and there is a need to realistically consider the conditions and environments of the patients without leaning towards the side of the patients or the medical practitioners. Rehabilitation programs that can be easily carried out at home have to be formulated to maintain the effectiveness of the rehabilitation that has been gained during hospitalization [10]. Such programs should not become a burden, and what is needed should be clearly delivered to the patients or their family, and the goal of the patients persevering and not giving up in the middle of rehabilitation need to be set (see Table 2) [11].

<Table 2> Communication between the health practitioner and the patient (LEARN)
(table contents quoted from reference 3)

L: Listen	Listen with sympathy and understanding to the patient's perception of the problem (A relationship based on trust has to be established by listening to and sharing the problems, mindset, and hope of the patients so that patients and their family can get educated and listen to and learn the information.)
E: Explain	Explain your perception of the problem (deliver medical information to patients using simple words sincerely; determine the contents and quantity of medical information to be delivered based on how much the patients can understand or the degree to which they can adapt it to their ADL; one should understand that this is not like the relationship between a teacher and his/her students)
A: Acknowledge	Acknowledge and discuss the differences and similarities (clarify the differences and similarities between the medical practitioner's and patient's opinions, and acknowledge both their opinions)
R: Recommend	Recommend the treatment (after clarifying the differences and similarities between the medical practitioner's and patient's opinions, suggest the best treatment; the patient may also suggest what he or she likes)
N: Negotiation	Negotiate agreement (negotiate to find a point of agreement between the medical practitioner and the patient; eventually, it is a significant goal to raise the patient's self-management ability)

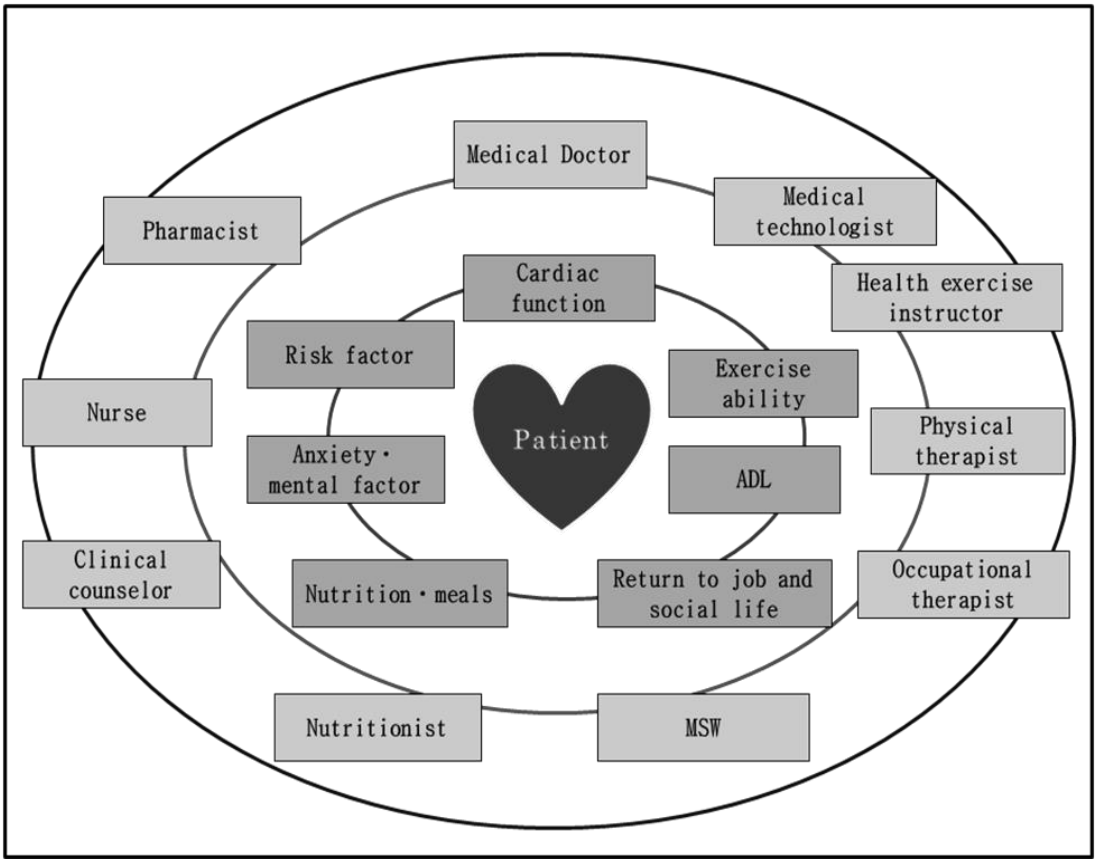
5. Team members

As proper team construction can contribute to the solid implementation of rehabilitation programs, it can be considered the onset of comprehensive rehabilitation.

For the implementation of comprehensive rehabilitation, it is ideal for the team members to have equal rights and responsibilities focused on the patients (see Figure 2). All the team members have to understand one another's jobs and need a coordinator with excellent communication skills. The ideal comprehensive rehabilitation program needs to be implemented in a transdisciplinary way[6] [4]. As it is true, however, that there are few medical facilities that can afford the maintenance of a transdisciplinary team due to the lack of personnel and the burden of personnel expenses, most teams have to implement comprehensive rehabilitation with a few members. Besides, even if a transdiciplinary team is formed, if it is not run based on sufficient communications, connections, and trust, comprehensive rehabilitation cannot be fully achieved. Therefore, the network and the

[6] Transdisciplinarity connotes a research strategy that crosses many disciplinary boundaries to create a holistic approach (http://en.wikipedia.org/wiki/ Transdisciplinarity).

teamwork among the team members are critical (see Table 3) [4, 12].



<Figure 2> Team practice

<Table 3> Teamwork (table contents quoted from reference 12)

T: Team members	Good selection of team members, good team leader or coordinator
E: Enthusiasm	Personal commitment of the team members
A: Accessibility	Physical proximity of the team members to information and places
M: Motivation	Motivation that is rational in the aspects of time and finance (sufficient incentives, time, and funding)
W: Workplace	Institutional support and changes in the workplace, pleasant working environment with a space where the members can rest
O: Objectives	Common goal and shared vision
R: Role	Clarity and rotation of roles
K: Kinship, Kindness	Family-like relationships among the team members in the workplace, kindness

Ⅳ. Closing Remarks

Rehabilitation has to be carried out comprehensively, from the beginning, but because it is not being carried out comprehensively or from the beginning in reality, the term *comprehensive rehabilitation* has been coined. That is, rehabilitation should be comprehensive (carried out from the beginning), but to implement comprehensive rehabilitation, many considerations need to be made all the time, including which part of patient rehabilitation one has to take part in, how long one has to take part in such, and from whom one will ask help to rehabilitate patients in the next stage. That is, how to make a proper referral to other medical practitioners and how to network with other medical practitioners, administrators, social workers, and medical staffs, need to be considered seriously and continuously. All the professionals working for patient rehabilitation have to understand the importance of comprehensive rehabilitation and have to practice it.

Reference

1) WHO (1981) Disability prevention and rehabilitation. Technical Report Series 668. World Health Organization, Geneva.
2) 上月正博 (2005) 生活習慣病と内部障害. 最新リハビリテーション医学（米本恭三　監修）, 医歯薬出版, 東京, 第 2 版, pp.319-329.
3) 中村隆一(2007)リハビリテーションに関わる諸領域. 入門リハビリテーション医学　第３版（中村隆一監修）. 医歯薬出版, pp.11-12.
4) Kohzuki M (2010) Symposium: The Roles of Rehabilitation Doctors in Comprehensive Rehabilitation: The Significance and Five Aspects of Comprehensive Rehabilitation. *JJRM*, 47, pp.199-204.
5) Ministry of Health, Labor, and Welfare homepage. http://www.mhlw.go.jp/toukei/saikin/hw/shintai/06/dl/01.pdf.
6) Kohzuki M (2007) Lecture: Rehabilitation from Heart Attack Update. *JJRM*, 44, pp.606-612 .
7) Guideline for the Diagnosis and Treatment of Circulatory Diseases （2011 年度合同研究班報告）. Guideline for Rehabilitation from Cardiovascular Diseases (Revised in 2012). http://www.j-circ.or.jp/guideline/pdf/JCS2012_nohara_h.pdf.
8) Wenger NK et al. In Cardiac Rehabilitation. Clinical Practice Guideline No. 17, AHCPR Publication, No. 96-0672, pp.1-26.

9)　Monninkhof E, Van der Valk P, Van der Palen J et al. (2003) Effects of a comprehensive self-management programme for patients with chronic obstructive pulmonary disease. *Eur Respir J*, 22, pp.815-820.

10) 上月正博（2008）呼吸・循環障害にみられる障害とリハビリテーション. 呼吸・循環障害のリハビリテーション（江藤文夫、上月正博、植木　純、牧田　茂　編）, 医歯薬出版, 東京, 初版, pp.6-17.

11) Falvo DR (1994) Effective patient education: a guide to increased compliance. Aspen Publishers Inc.

12) Choi BCK et al. (2007) *Clin Invest Med* 30, E224-E232.

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