Medical Rehabilitation

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Lauro S. Halstead
Martin Grabois

Preface

Rehabilitation medicine is a relatively new specialty, especially in the United States. The number of practitioners is small and the presence of a rehabilitation medicine curriculum in medical schools remains limited. As a consequence, the philosophy, techniques, and contributions of rehabilitation medicine are widely misunderstood or simply unknown to many private practitioners and other health care professionals. This is particularly ironic as the major concerns of rehabilitation medicine involve long-term physical disabilities, which represent a large and steadily increasing percentage of health care problems in all age groups. In response to this growing need, this volume provides a comprehensive yet basic overview of rehabilitation medicine to help primary care and specialty physicians in managing patients with long-term disabilities.

The authors represent a variety of rehabilitation specialists who provide rehabilitation service as individuals. However, they also provide comprehensive health care as an interdisciplinary team, affiliated primarily with Baylor College of Medicine. The private practitioner is the other member of that team, and this book aims to better equip him or her for working with one or more rehabilitation specialists in managing the complex patient problems that typically accompany chronic illness.

The book's organization enables the reader to approach patient management from three different perspectives: Part I: Principles of Rehabilitation Medicine, Part II: Rehabilitation Management of Specific Disorders, and Part III: Rehabilitation Management of Special Populations and Complications.

Part I provides an overview of general rehabilitation principles, the therapeutic modalities employed, and the specialists who provide them. The similarities and differences between evaluating and treating *medical problems* and *disability problems* are also emphasized. This section assists the reader in deciding which aspects of patient care to provide themselves, and which aspects are best performed by one or more of the rehabilitation specialists.

Part II discusses those injuries and diseases that are most likely to be encountered in private practice, result in chronic or progressive physical disabilities, benefit from an interdisciplinary approach to management, and require long-term management. In this section, the principles of evaluating and treating disability problems are put into practice. An illustrative case report in each chapter of Part II applies the problem-oriented approach presented in Part I to the management of a lost valued function, such as ambulation or vocation.

Disabled people suffering from one of the disorders described in Part II commonly experience complications such as pressure sores and the effects of immobilization. The management of these and other complications that may interfere with recovery and resumption of independent activities is discussed in Part III. Disabled elderly people and children have special needs that are considered in this section.

Supplementing the text are nearly 400 illustrations, tables, and graphs that facilitate a rapid and clear communication of key concepts and management techniques. A generous number of topic headings and cross-references serve as guideposts to locating specific areas of inquiry, as does the cross-referencing. The Appendix refers the private practitioner to patient education materials; patient-sponsored periodicals; manufacturers of prostheses, orthoses, and other adaptive aids.

While written mainly for primary care physicians in private practice (general practitioners, family practitioners, and internists), *Medical Rehabilitation* is also useful for neurologists and orthopedists. In addition, it provides practical advice for house officers, medical students, nurses, vocational counselors, and other health care professionals who deal with chronically disabled persons. The practical techniques described can be applied to managing patients at home, in the office, and in the general hospital. This volume is not intended to be encyclopedic or basic science-oriented, nor will it replace standard textbooks in the field of physical medicine and rehabilitation; it is a practical, concise, easy-to-use reference that emphasizes the major and most common problems the private practitioner is likely to encounter.

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CHAPTER 1

Philosophy of Rehabilitation Medicine

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DEFINITIONS

Traditionally, the central concern of rehabilitation has been the restoration of function so that persons can perform to their fullest physical, emotional, social, and vocational potential. From another perspective, rehabilitation involves behavioral changes and emphasizes coping with a physical impairment caused by disease or injury and learning to adapt in one's own environment.

The terms "rehabilitation" and "physical medicine" are often used synonymously. In fact, they share much in common but are not identical. Physical medicine traditionally has been concerned with the diagnosis and treatment of physical disorders, with special emphasis on the use of neurodiagnostic techniques such as electromyography and the therapeutic application of physical agents such as heat, cold, water, and electricity. Rehabilitation, a broader term, has been associated more with the diagnosis and treatment of functional disorders, with emphasis on the practical, functional assessment of motor, sensory, and cognitive skills and treatment aimed at enhancing function and altering behavior.

Over the years, physical medicine has greatly expanded to include many of the techniques and strategies associated with the rehabilitation process. Although persons who enter the field of physical medicine and rehabilitation are called physiatrists (literally, a physical physician), the training programs combine knowledge and skills in the application of physical agents with those used in the evaluation and treatment of physical, psychological, social, and vocational problems.

Other terms associated with rehabilitation include impairment, disability, and handicap. Impairment is the residual limitation resulting from disease, injury, or a congenital defect. Disability is the inability to perform some key life function. Handicap is the interaction of a disability with the environment. With mild impairment, no disability or handicap may exist. The estimated number of noninstitutionalized persons with severe disabilities in the United States in 1975 was over 8 million.

For the most part, rehabilitation deals with persons who have long-term physical disabilities or chronic illnesses. Infatuated with youth and good health, our society often shuns or neglects chronic illness. This attitude is reflected in medical schools, where there is relatively little training in managing persons with chronic illness and recognizing the special challenges inherent in their care.

Influences on Patient Management

Modern medicine has been very effective at eliminating or devising cures for many of the acute diseases. The trend, however, is toward an increasingly older population with more complex, chronic disease processes that require ongoing, restorative care. The challenge, therefore, is enormous and the cost to the nation is staggering in terms of lost productivity, yet the number of rehabilitation professionals available to meet this growing need is relatively small.

Defining the scope of rehabilitation problems in our society requires going beyond simply

TABLE 1–1. *Factors influencing the management of patients with chronic illness*

Lesion	Stable	Progressive
Age at onset	Congenital, prepuberty	Adolescence, postadolescence
Extent	Limited	Systemic, multisystem
Visibility	Not apparent	Readily apparent

counting the number of persons with stroke, heart disease, or degenerative disorders. In developing programs tailored to the individual needs of patients with chronic illness, the primary care physician must consider a number of other factors that will influence the management of these persons (Table 1–1).

For example, the issues involved in managing a 45-year-old male executive who has a traumatic below-knee amputation are quite different from those involved in managing a 5-year-old child who has a below-elbow amputation for metastatic bone cancer in his dominant hand. The man's lesion is stable and he has passed through crucial periods of psychosocial development and maturation. With a good prosthetic fit and proper training, this patient's limb loss would not be readily apparent, and within certain limitations, he should be able to return to his previous occupation with little or no change in productivity. The child's lesion, however, is likely to be progressive, the rate depending on the cell type and availability and response to therapy. This patient is in a crucial stage in his physical, psychological, and social development. Even if there is a significant remission, the child and his parents, classmates, and teachers will be dealing with a readily apparent disability that will affect his body image, ability to participate in usual activities, interaction with others, and eventually, choice of careers. These issues are discussed in greater detail in Chapter 7.

TRADITIONAL MEDICAL MODEL VERSUS REHABILITATION MODEL

Problem Orientation

Table 1–2 compares some of the characteristics that distinguish the medical model from the rehabilitation model of health care in this country in the 1980s. The general orientation of the medical model is toward disease, while that of rehabilitation medicine is toward disability, or more broadly, illness. Disease is defined as the interaction of a pathological process with individual molecules, cells, and organs. It is essentially a biological event. Disability or illness, however, is essentially a human event. It represents the resulting interaction of a person with a disease.

Physician's Role

In the medical model, the physician's role tends to be active. It is a physician who does the examination, orders the tests, makes a diagnosis, and prescribes appropriate medications. The physician's role in the rehabilitation model also encompasses these functions but extends to include helping the patient adjust to the disability and problem solving to minimize the functional loss from a long-term, chronic condition. To accomplish this, the physician needs the help of allied health professionals who are trained to teach patients new skills in homemaking, child care, vocational training, driving, and coping with emotional stress. Often, a crucial role for the physician is to help facilitate or coordinate the accessibility to these services and their implementation. Along with other health care providers, the physician plays an active role in teaching the patient about his or her illness.

Patient's Role

In the medical model, the patient's role is often passive and uninformed, with diagnostic and therapeutic measures done or given to him. By contrast, in the rehabilitation model, the patient is encouraged to be an active, informed participant. Since an important part of rehabilitation is achieving behavioral changes and helping the patient to adjust physically and emotionally, the patient needs to know what to expect and have enough information to assist in problem identification and resolution.

TABLE 1–2. *Comparison of the medical and rehabilitation models of health care*

	Medical model	Rehabilitation model
Problem orientation	Disease	Disability and illness
Physician's role	Doer, knower	Teacher, facilitator
Patient's role	Passive	Active
Care orientation	Staff oriented	Patient oriented
Organization	Fragmented, no formal team	Team approach
Therapeutic approach	Treatment of disease	Management of disabilities
Objectives	Cure, enhance physical function	Healing, coping, adjusting, enhance functional performance

Care Orientation and Organization

In the medical model, patient care is organized for the convenience of the staff or care providers. Frequently there is no formal, organized team (except in surgery) and care is often fragmented, being dispensed in isolated units. In the rehabilitation model, care is organized more for the convenience of the patient or consumer. Teams are a formal and intentional part of the health care provision. Perhaps because the problems dealt with in rehabilitation are complex, long term, and frequently multisystem, the only practical solution is to bring together a highly organized group of professionals.

Therapeutic Approach

The therapeutic emphasis in the medical model is on treatment, while in rehabilitation, it is on management. Treatment is defined as effecting a relief or cure of the disease and relies heavily on medication, surgery, and the skills of modern technology. It is often episodic and symptom oriented. Management is defined as effecting relief from illness or disability and enhancing function, using the full resources of the health care system. It implies long-term involvement that actively includes the patient and family.

Objectives

In terms of outcome, the medical model is characterized by concern with curing and enhancing physiological function, while the rehabilitation model is characterized by concern with healing and enhancing functional performance. Curing is defined as removing, reversing, or retarding a disease process, while healing is defined as decreasing discomfort and enhancing a sense of physical and psychological well being. For both patient and physician, healing is more active, curing more passive. Healing does not exclude curing, but extends beyond it to include caring.

TEAM CARE

The principal objective of interdisciplinary teams is to maximize functioning of the patient with chronic disability through comprehensive, coordinated care. Comprehensive, coordinated team care is defined as services by various professionals who communicate regularly about their observations and who integrate decisions and actions in relation to their separate goals. Through the coordinating process, the different professions focus on the individual as a whole in terms of the total environment and the total problem, thereby avoiding a fragmented approach to the patient.

Tasks of interdisciplinary rehabilitation teams involve assessment, definition of goals, provision of services, and follow-up to ensure continuity of care responsive to changes in the patient's needs. Team members know that the treatment process is not a single set of actions derived from an inflexible set of goals worked out in a clinic or office. Team treatment is a dynamic process of changing goals and service decisions where changes are based on the feedback of information from the patient's environment and the environmental conditions that influence improvement or lack of improvement.

Hospital-based, most rehabilitation teams can only provide restricted services to the community. Some communities, however, have interdisciplinary teams that do provide ongoing restorative services and treatment in the home. These teams include two or more of the following specialists: physicians, nurses, occupational, physical, and speech therapists, home aides, social workers, and vocational counselors. Although home care programs vary widely in their size, base of operations, and scope, they represent a potential model for establishing a network of community resources capable of providing the kinds of comprehensive care required by patients with long-term problems. In many communities, the Visiting Nurse Association provides the nucleus for the extension of rehabilitation services into the home.

Overall, coordinated team care appears to be more effective than the customary, fragmented care currently received by most persons with long-term illnesses. According to studies of coordinated team care, the patient's function usually improves or is at least maintained and disease activity either improves or deteriorates at a slower rate.

FUTURE DIRECTIONS

Costs and Reimbursement

The cost associated with rehabilitation services is often high, and sometimes when compared with other types of health care services, seems to be inappropriately expensive. There is loss of income, increased outlay for medical care, and the costs of special equipment and physical assistance to compensate for lost function. The provision of early preventive care, however, often helps avoid long-term complications that are even more expensive. Obtaining adequate reimbursement from third party payers has been a problem since the inception of rehabilitation medicine, and the provision of rehabilitation services by state and federal programs has often been inadequate. Interestingly, insurance companies providing workmen's compensation have usually been the most generous in their investment of comprehensive care for injured clients.

Rehabilitation Facilities

Although this book emphasizes the application of rehabilitation medicine to the office, home, hospital, and community practice of primary health care providers, it is sometimes advisable to refer a disabled patient to one of the specialized rehabilitation facilities available in many parts of the country. Also available are regional centers that provide specialized rehabilitation services for different types of disability groups, such as federally funded spinal injury centers. Preliminary data indicate that treating spinal injured patients in these specialized centers is more economical and efficient than in community hospitals. For less complex and less demanding kinds of problems, however, rehabilitation care can be applied in almost any health care setting.

Community Needs and Programs

Over the last decade, there has been an enormous increase in the provision of community rehabilitation services. The legislative act of 1976, known as Public Law 504, helped bring disabled persons into the mainstream by providing equal access to all federally funded programs and projects. A comparable law mandates the provision of rehabilitation services in public schools rather than segregating disabled children in specialized facilities. Another important development in recent years has been the implementation of independent living programs. These programs provide housing and other facilities where disabled persons are able to apply the skills learned in rehabilitation programs to living either independently or in groups that share resources and expenses. Through such programs, disabled persons are able to find more effective ways of living full, productive, useful lives.

CONCLUSIONS

A number of areas distinguish rehabilitation from most other medical specialties. Rehabilitation usually deals with patients having long-term problems and, thus, requires ongoing involvement. Ideally, rehabilitation begins as early as possible after the onset of a disability and often

continues for many months or years. There is usually no clear-cut point of resolution at which someone is rehabilitated. Constant adjustments must be made as the patient ages and identifies new goals, priorities, and environmental changes. These problems often result from disease or injury for which there is no cure. Therefore, the emphasis is on restoration of residual function and helping the person adapt and become as independent as possible. Because the disease or injury often affects several organ systems, a comprehensive approach directed at the whole person is required. As a result, there is concern with not only physical well-being but also emotional, social, and vocational issues. In addition, multiple specialties and skills are usually involved in rehabilitation programs, which require team care and maximum use of allied health personnel. Finally, rehabilitation emphasizes patient education and helping patients learn to live with their disability in their own environments.

Many of these principles are fundamental not only to rehabilitation but also to primary health care. The philosophical principles underlying the fields, the approach to the patient, the concern for the whole person, the use of allied health personnel, and the emphasis on patient education give the two fields much in common.