

International Encyclopedia of Rehabilitation

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Physical Therapy – Key Component of the Rehabilitation Team

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Introduction

Physical therapy is a dynamic health care profession that aims to assist individuals with the achievement, maintenance, and restoration of maximal physical functioning and health throughout their life. Physical therapists participate within the health care team as professionals who are autonomous practitioners with expertise in movement science. Using their professional knowledge and skills, physical therapists interact with individuals to achieve mutually agreed upon goals that will allow them to maintain or achieve their highest level of physical function. In addition to their role in the maintenance and restoration of physical function and health, physical therapists are also involved in the promotion of health and wellness, prevention of physical dysfunction and disability, and public health initiatives.

Physical therapy is defined as the care and services provided by or under the direction and supervision of a physical therapist (American Physical Therapy Association, 2003). Thus, only a physical therapist can supervise, direct, and provide physical therapy services. In many parts of the world the terms physiotherapist and physiotherapy are used. The terms “physical therapy” and “physiotherapy” as well as “physical therapist” and “physiotherapist” are synonymous.

Roles of the Physical Therapist

Physical therapists are health care professionals who contribute to the health of individuals and communities through their roles as practitioners, educators, scientists, consultants, and administrators. By far the most common role of a physical therapist is that of practitioner. In many countries, physical therapists have a primary care role which ensures that individuals have optimal access to physical therapy services. Prompt access to physical therapy for appropriate conditions is associated with improved patient outcomes and lower health care costs. For example, individuals with a new episode of acute low back pain who were seen by a physical therapist within 72 hours of pain onset experienced fewer physical therapy visits, less time off from work, and similar resolution of their low back pain as compared to individuals who did not access physical therapy services promptly (Pinnington MA et al., 2004).

In their roles as educators, physical therapists routinely inform their patients and clients about aspects of their condition and the strategies that can be employed to improve their physical function. Very often patients are instructed in lifestyle changes and home exercise programs that empower the patient to become active participants in achieving their health care goals. Not only do physical therapists educate their patients and clients, they act as clinical mentors to physical

therapy students who are engaged in their clinical residencies. Physical therapists also act as educators to colleagues, sharing their knowledge and clinical expertise to ensure that the patient is receiving the most current and effective treatment for their condition. Furthermore, physical therapists provide continuing education programs to physical therapy colleagues and other health care professionals, thereby contributing to the continued updating of their professional knowledge. Within the community, physical therapists inform leaders and organizations about the profession of physical therapy and its role in the promotion of optimal physical function and health. Physical therapists are also involved in the development and delivery of education programs aimed toward increasing the public's awareness of the importance of behaviors that promote functional mobility throughout their lives. Finally, physical therapists with advanced education in research and practice are employed at academic institutions where they educate the future generations of physical therapists.

Physical therapists serve as consultants by sharing their professional advice or opinion with patients, other health care providers, businesses, schools, and other organizations including government agencies. Consultations with patients can occur at the request of the patient or another health care professional to determine the need for physical therapy services or to evaluate services that have been provided or to provide an additional opinion to a patient about physical therapy services. Other consultation services provided by physical therapists may include working with employers to implement necessary modifications in the work place to comply with federal regulations for individuals with disabilities, to determine if an employee is capable of returning to their previous work environment, and to implement employee safety programs (Shaw WS et al., 2011). Consultation services may be directed toward evaluating the physical environment of places such as schools to ensure that they are accessible for children with disabilities or the home of an individual who has had a stroke or spinal cord injury to determine if modifications are required to allow for the performance of activities of daily living such as dressing and bathing (Wilson DJ et al., 2009). Physical therapists can be requested to use their substantial knowledge of rehabilitation by serving as expert witnesses in legal actions.

Physical therapists are also active in scientific and research activities. Research is essential for the advancement of the profession of physical therapy and physical therapist scientists, who have advanced education in the development and conduct of research trials, routinely engage in the evaluation of current practice and the development of new physical therapy interventions that improve the quality of patient care.

Physical therapists are involved in administrative activities which includes the management of the delivery of physical therapy services. In this regard, the physical therapist manages financial resources, ensures that the organization is receiving appropriate remuneration for physical services rendered, supervises and manages physical therapy staff and their development, and monitors the delivery and quality of physical therapy services.

Physical Therapist Practice

Physical therapy intervention is associated with improvements in physical function and health related quality of life (Chen MD and Rimmer JH, 2011; Critchley DJ et al., 2007; van Tol BA et al., 2006). The physical therapy management of a patient begins with the physical therapist obtaining a history and reviewing medical and laboratory tests and imaging studies. The physical

therapist integrates these findings with those obtained from a physical examination of the cardiopulmonary, musculoskeletal, neuromuscular, and integumentary systems to determine a physical therapy diagnosis. The physical therapist then establishes a plan of care and selects the specific physical therapy interventions that will be used to achieve the patient's habilitation or rehabilitation goals. Physical therapists provide interventions to optimize physical function and quality of life which may be otherwise compromised by the factors such as aging, trauma, chronic diseases, or the environment. Physical therapy interventions are performed by the physical therapist or in some countries, such as the United States, selected interventions can be delegated to be carried out by a physical therapist assistant working under the supervision and direction of the physical therapist. As members of the health care team, physical therapists collaborate with a range of other health care professionals and other professionals involved in the care and management of patients (Bushby K et al., 2010). During the course of management of the patient, physical therapists also interact with patients' families and care givers and consult with community services.

The Physical Therapist as a Clinician

Physical therapists are health care professionals who are skilled in the promotion of optimal mobility and function (Taylor NF et al., 2007). The management of dysfunction within the major body systems (musculoskeletal, neuromuscular, cardiopulmonary, and integumentary) represents the major scope of practice for the profession of physical therapy. Physical therapists focus on the management of impairments, functional limitations, and disabilities in these four body systems. This terminology is based on the Disablement Model (Jette AM, 1994). In this model an *impairment* is defined as a loss or abnormality of anatomical, physiological, mental, or psychosocial structure or function. A *functional limitation* is defined as restriction of the ability to perform a physical action, task, or activity in an efficient or competent manner. *Disability* is defined as a limitation in the performance of specific social roles are customary for the individual or expected for the person's status or role in a specific sociocultural context and physical environment.

The most common musculoskeletal conditions that are managed by physical therapists include impaired posture, impaired muscle performance, impaired joint mobility and impaired muscle strength. Impaired posture may present due to poor body mechanics and positioning or be due to an idiopathic condition such as scoliosis (Fabian KM, 2010). Using physical therapy interventions, individuals with connective tissue disorders such as fibromyalgia achieve marked reductions in pain and increased physical function (Sanudo B et al., 2010). Individuals with arthritis, sprains, and tendonitis often benefit from physical therapy management to reduce the inflammation and improve movement and strength (Escalante Y et al., 2010; Stasinopoulos D et al., 2010; van Rijn RM et al., 2010). Low back pain affects a significant percentage of the population at some time in their lives. Physical therapists are the practitioners of choice to provide accurate diagnosis and management of acute low back pain and physical therapy services are associated with improved pain and functional outcomes (Gellhorn AC et al., 2010). Fractures are frequently immobilized in a cast or other fixation device while the bone heals and the immobility results in joint stiffness and muscle weakness leading to a loss of physical function and mobility. Physical therapy interventions such as exercise and stretching can restore movement and strength to individuals following fracture (Handoll HH and Ollivere BJ, 2010). Joint replacements, especially of the hip and knee, have become a mainstay of treatment for hip

fractures and knee arthritis. Physical therapists play a key role in the rehabilitation of individuals following joint replacement ensuring that patients regain pain-free functional mobility and can safely return to being functional within the community (Handoll HH et al., 2011; Labraca NS et al., 2011). Another musculoskeletal condition that physical therapists treat is the functional limitations and disability associated with amputations. Many times, lower extremity amputations result from foot wounds due to poor circulation associated with diabetes. Increasingly, lower extremity amputations are being sustained in young men and women involved in combat while performing military service. There are increasingly exciting developments in prosthesis design, making the rehabilitation of these individuals very promising. Physical therapists are the key health care professionals working with these young adults during their rehabilitation (Springer BA and Doukas WC, 2006).

Physical therapists manage patients with dysfunction of the cardiopulmonary systems. With the marked increase in obesity and cardiovascular disease globally, the prevention and reduction of risk for cardiovascular and pulmonary dysfunction is paramount. Many people are very inactive and thus it is important that physical therapists intervene to improve impaired physical function associated with deconditioning (Dean E, 2009). With the increased survival rates for individuals experiencing a heart attack, more people are living with heart failure. Physical therapy interventions can improve the quality of life of these individuals through supervised exercise and life style modification education (van den Berg-Emons RJ et al., 2005). Chronic obstructive pulmonary disease (COPD), which occurs as a result of smoking, is a leading cause of death. Physical function, mobility, and quality of life have been shown to be improved with physical therapy management through pulmonary rehabilitation (Troosters T et al., 2010). Modern medicine has been successful in improving the survival of premature infants; however, many of these infants have very under-developed lungs. Physical therapists work with these infants to improve their lung function and enhance their normal growth and development (Heathcock JC et al., 2008).

Individuals with dysfunction of the neuromuscular system often benefit from physical therapy services. One of the most common problems in the aging population is the increase in the prevalence of falls. Physical therapists work with patients to evaluate their risk for falls and implement strategies to assist the patient in improving their balance thereby preventing future falls and injury (Miller KL et al., 2010). Children with neurologic disorders such as cerebral palsy, developmental delays in motor function, and spina bifida benefit from physical therapy services to promote the attainment of the highest level of functional mobility thereby reducing the degree of disability that they experience (Cameron EC et al., 2005; Gharib NM et al., 2011; Leary PM, 1997). With the improved medical management of individuals experiencing a stroke, more people are surviving with less damage to their brain tissue and more potential for recovery of their functional mobility. Physical therapists work extensively with individuals following stroke to improve their ability to walk and use their affected arm (Cooke EV et al., 2010; Hayward K et al., 2010). Individuals with spinal cord injuries and closed head injuries are also seen by physical therapists to learn how to use a wheelchairs and other mobility aids and regain as much functional movement as possible (van Langeveld SA et al., 2011).

Physical therapists have a substantial role to play with individuals who have had significant burns or other damage to their skin. Following a burn, the patient works with a physical therapist

to ensure optimal healing of the burned region as well as to maintain and increase joint mobility and muscle strength (Neugebauer CT et al., 2008). Physical therapists have skills in wound management and treat patients with diabetic foot ulcers and pressure ulcers to promote optimal wound healing and return of function (Kruse RL et al., 2010).

Physical Therapy Practice Settings

Physical therapists practice in many different environments spanning all levels of care from the home to the intensive care unit. Most commonly, physical therapists practice in out-patient physical therapy clinics. At these clinics, physical therapists provide evaluation and management of individuals with disorders of movement and function. Another environment where physical therapists practice is in hospitals. In a hospital setting, physical therapists work with patients following surgeries such as hip and knee replacement surgery or back surgery. Increasingly, the importance of early mobility following an acute illness has been recognized. Physical therapists are treating patients in the acute wards and intensive care units and their interventions have been shown to be associated with improved function and decreased length of hospital stay (Needham DM et al., 2010). Many patients with orthopedic and neurologic functional limitations benefit from intensive rehabilitation services provided in the hospital.

Other settings in which physical therapists work include skilled nursing facilities and hospice. Moreover, physical therapists actively provide services in community health programs as well as in work environments including corporate and industrial health centers (Adam K et al., 2010). Sports teams often have a physical therapist dedicated to the management of the injuries sustained by the players. Physical therapists also work with professional performers such as dancers, acrobats, and figure skaters. School-based physical therapists provide services to children without disrupting their education.

Physical therapists treat patients at every age across the lifespan, including neonates, children and adolescents, adults, and the aged.

Physical Therapists in Public Health

Physical therapists have a leadership role in the prevention of loss of function and maintenance of functional mobility for individuals within communities. This is a very important role for physical therapists and is endorsed by the World Confederation of Physical Therapy (World Confederation of Physical Therapy, n.d.). By being involved in programs that promote health and wellness and reduce the risk of injury, physical therapists use their extensive knowledge and skills to promote improved public health. Furthermore, physical therapists, who are recognized as experts in rehabilitation, are becoming increasingly involved in the development of health care policy. In this regard, physical therapists promote health and wellness in community through involvement in activities that encourage the public to adopt healthy behaviors, especially as they relate to fitness and mobility (Wang CY et al., 2011). These activities may include the performance of screening and the provision of recommendations to prevent disease and disability, including modification of life style risk factors for heart disease, diabetes, and obesity (Deshpande AD et al., 2008) and the development and implementation of programs to reduce fall risk in the elderly (Michael YL et al., 2010).

Educational Requirements for Physical Therapists

The knowledge base for the profession of physical therapy continues to grow as the theoretical and scientific foundation for physical therapy expands. At the present time, the educational requirements to become a physical therapist involve education at the university level and ranges from a bachelor level program to a clinical doctoral level program depending on the country where the physical therapist is educated. All physical therapy education programs require a foundation in the basic sciences of biology, physics, chemistry, anatomy, and physiology. From there, students learn the fundamentals of medical sciences, with a focus on the pathophysiology of the cardiopulmonary, musculoskeletal, neuromuscular, and integumentary systems. Courses specific to the physical therapy evaluation and interventions comprise the majority of the physical therapy education curriculum. Students practice their psychomotor skills in laboratory settings at the educational institution. Throughout the curriculum, students engage in clinical experiences where they work with patients in a clinical setting while being supervised by a licensed physical therapist. Upon graduation, students generally must pass a licensing examination to be able to obtain the legal authority to practice as a physical therapist.

Many organizations that license physical therapists require that practicing physical therapists complete continuing education throughout their professional careers. The format and amount of continuing education varies by organization, but the goal is the same – to ensure that all physical therapists remain current in their knowledge and practice as the field continues to evolve. Continuing education requirements aim to guarantee that the most effective care is being provided to recipients of physical therapy services. In this regard, physical therapists are expected to be life-long learners and evidence-based practitioners. Evidence-based practice involves reading and interpreting the scientific literature as it pertains to physical therapy practice and applying the knowledge gained, in conjunction with the physical therapist's clinical judgment and the patient's personal preferences, to deliver the highest quality of care (Sackett DL et al., 1996).

Physical Therapist Professionalism

The profession of physical therapy is governed by its professional organizations and individual members of these organizations are expected to adhere to the policies and procedures set forth by the organization. The highest professional organization for physical therapy is the World Confederation for Physical Therapy. The World Confederation for Physical Therapy and its member organizations all have a code of ethics that their members adhere to. The code of ethics establishes the principles for ethical practice of physical therapy. The code of ethics should be available to the organization's members, the general public, employers, governments and government agencies. The code of ethics generally encompasses the following principles: that physical therapists:

- a) will respect the rights and dignity of all individuals;
- b) will comply with the laws and regulations governing the practice of physical therapy in the country in which they work;
- c) will accept the responsibility for the exercise of sound judgment;
- d) will provide honest, competent, and accountable professional service;
- e) commit to provide quality service;

- f) are entitled to a just and fair level of remuneration for their services;
- g) will provide accurate information to patients/clients, other agencies and the community about physical therapy and about the services physical therapists provide; and
- h) will contribute to the planning and development of services which address the health needs of the community (World Confederation of Physical Therapy, n.d.)

Physical Therapists are United Globally through the World Confederation for Physical Therapy

Physical therapists are represented worldwide by the World Confederation for Physical Therapy. The World Confederation for Physical Therapy was founded in 1951 and serves as the sole international voice for over 300,000 physical therapists worldwide. The vision of the World Confederation for Physical Therapy is that every individual is entitled to the highest possible standard of culturally appropriate healthcare delivered in an atmosphere of trust and respect for human dignity, and underpinned by sound clinical reasoning and scientific evidence (World Confederation of Physical Therapy, n.d.). This international organization is dedicated to the promotion of the physical therapy profession and to improving global health by encouraging high standards of physical therapy research, education and practice; supporting the exchange of information between World Confederation for Physical Therapy regions and its member organizations; and collaborating with national and international organizations (World Confederation of Physical Therapy, n.d.).

The World Confederation for Physical Therapy is comprised of 101 member organizations in five regions: the Africa region (13 member organizations), the Asia Western Pacific Region (24 member organizations), the Europe region (39 member organizations), the North American Caribbean region (14 member organizations), and the South America region (10 member organizations). These member organizations are recognized as the sole authoritative body for physical therapy in that country.

On behalf of its members, World Confederation for Physical Therapy undertakes a range of projects and supports international campaigns to promote the physical therapy profession and its contribution to global health. It encourages high standards of physical therapy research, education and practice. Physical therapists worldwide can connect through the World Confederation for Physical Therapy web site (<http://www.wcpt.org>). The web site provides members with access to professional keynote papers and position statements, profiles of member organizations, up to date information on new international guidelines and policies. This web site also encourages global information sharing through web based discussion forums.

Two major activities of World Confederation for Physical Therapy are World Physical Therapy Day held annually on September 8th and the World Congress of Physical Therapy that is held every four years. The World Congress of Physical Therapy is a scientific meeting of physical therapists that provides a venue for global knowledge exchange of advancements in physical therapy research, practice, and education.

Other World Confederation for Physical Therapy activities include working with other international health professional groups to improve the quality of health services around the world by collaborating on issues of regulation and positive practice environments. Furthermore,

World Confederation for Physical Therapy maintains official relationships with government and non-government agencies worldwide, including the World Health Organization.

Conclusions

Physical therapists are essential participants in the health care delivery system, using their expertise in rehabilitation and movement science to enhance the physical function and mobility of individuals of all ages. Physical therapists are highly educated, autonomous practitioners who function as clinicians, educators, scientists, consultants, and administrators who practice in all health care environments, in the home, in the community, and in many businesses and organizations. Physical therapists are not only involved in providing the highest quality of care to individuals, but also are very active in promoting public health initiatives.

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