

Chapter 18

Sensorized Garments Developed for Remote Postural and Motor Rehabilitation

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ABSTRACT

Every day, all around the world, millions of people request postural and/or motor rehabilitation. The rehabilitation process, also known as Tertiary Prevention, intends to be a sort of therapy to restore functionality and self-sufficiency of the patient, and regards not only millions of patients daily, but involves also a huge number of professionals in medical staffs, i.e. specialists, nurses, physiotherapists and therapists, social workers, psychologists, physiatrists. The care is given in hospitals, clinics, geriatric facilities, and with territorial home care. For the large number of patients as well as the medical staff and facilities necessary to support the appropriate postural and motor training, the monetary costs of rehabilitation is so large, it is difficult to estimate. So, every effort towards a simplification of the rehabilitation route is desirable and welcome, and this chapter covers this aspect.

INTRODUCTION

Nowadays in the world there are about 600 million of people with various types of disabilities (Fifty-Eighth World Health Assembly) with respect to a total world population of around 7 billion of persons. This number is rapidly increasing since the population growth rate, the increasing average age,

the malnutrition, the violence (especially domestic ones), the environmental degradation, the diseases (such as AIDS, malaria, Ebola,...), amputations, medical treatments, or finally because of injury reported in various type of accidents (work, road, sport, guns, etc.).

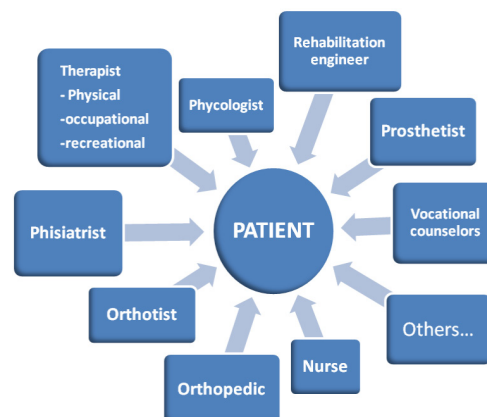
From an analysis of available statistical data on disability, it results that each country has a

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Rehabilitation care cannot reach all patients and this is a problem both for developing than developed countries. In fact only 50% of States are able to provide the necessary care and the disabled population that can be medical treated is about 20% of the total. All around the world there are Nations that haven't the capability to do this at all. The distribution of physiotherapists around the world is indicative: in developing countries there is 1 physical therapist every 550,000 patients while in developed countries this ratio is only 1 every 1,400 patients (WCPT, October 2003). The point is also that a patient who claim rehabilitation need not only of therapists but also of many other medical and non-medical staff figures, as Figure 1 summarizes.

Let's consider some detailed examples of data regarding consistent part of the world of numerical values to be considered in rehabilitation course.

Figure 1. People involved in patient's motor rehabilitation



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