Ergonomic diagnostic and therapeutic modules for medico-occupational rehabilitation (MOR)

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Abstract:

Restoration or maintenance of work capability is a central aim of rehabilitation. The Bavaria Clinic has developed a procedure with modules for ergonomic evaluation of functional capacity, ergonomic training for specific occupations at model workplaces, physical exercises and ergonomically optimized work hardening. A controlled observational study and a catamnestic survey confirmed the job-relevant advantages of this procedure.

Keywords: Rehabilitation ergonomics, medical job-oriented rehabilitation, practical implementation, workplace/behavior ergonomics, epidemiological outcomes

1. Objectives and structure of ergonomically designed medico-occupational rehabilitation

One of the central aims of rehabilitation as defined in German social insurance regulations is the maintenance, improvement or restoration of ability to work. With this aim in mind, the Bavaria Clinic and the IAD have been working together since the 1990s on the development and implementation of job-oriented modules to supplement standard rehabilitation procedures. These are used to determine patients’ psychosocial capabilities with the focus on motor functions. The objective is to give patients suffering from physical disabilities caused by accident or sickness the type of training, technical and organizational support that will enable them to return to their existing job.

In addition and as a form of primary and secondary prevention, they receive training in ergonomically correct, auto-protective postures and movements and in how to avoid unnecessary movements and postures and movements constituting long-term health risks at their workplace and its environment.

The first step was to draft a comprehensive plan together with Prof. Landau (IAD) [1]. This was then used in clinical rehabilitation and two studies were performed to evaluate the results.

The plan calls for provision of normal medical services, plus the following modules based on stringent ergonomic standards enabling patients to simulate normal work activities:
1.1. Diagnostic modules

- An ergonomic assessment procedure for evaluation of functional and motor capacity developed by Susan Isernhagen, USA) [2]. This procedure uses 29 standardized tests of postures, movements and lifting and carrying operations to assess a person’s ability to perform key, job-relevant physical activities. The tests use a so-called kinesiophysical ergonomic approach.

- Job-relevant stress tests (with special attention to ergonomic criteria) on rehabilitation patients in the clinic’s own training workshops, i.e. in a work environment that is typical for the occupation. Occupational training staff schooled in ergonomics conduct and supervise these tests and assess the patient’s progress towards the necessary levels of work efficiency and ability to cope with job demands.

1.2. Therapeutic modules

- An ergonomic training course involving work simulation at model workplaces designed in collaboration with the IAD, in which ergotherapists and ergonomically qualified physiotherapists give theoretical and practical advice on working methods and optimal ergonomic behavior in the performance of tasks typical for a given occupation. This includes teaching of techniques to avoid excessive stresses from forced postures or prolonged sitting, and also stress bottlenecks on joints and the spinal cord when lifting and/or carrying heavy loads.

- Functional training courses designed for specific occupations, in which physically disabled patients practice optimal ergonomic ways of performing movements and working in postures that cause them problems but are essential for their work. The aim of these courses is to restore the patient’s ability to cope with the demands of his or her job.

- Gymnastic training courses designed for specific occupations to compensate muscular dysequilibrium and pathological postures induced by unilateral dynamic or static work. Patients receive a CD-Rom for self-training at home or at the workplace.

- Still in the planning stage is the ergonomically designed work hardening course, in which physically disabled patients can be prepared for reintegration into their jobs more realistically and intensively than is at present the case. Starting with physiotherapy and medical training therapy, this work hardening program will then switch to concentration on practical training for the specific job. Working in an occupational training workshop, the patient will be subjected to a steadily increasing workload until he or she reaches the level of efficiency regarded as essential for successful competition in the labor market. Regular, ongoing supervision of this course will be in the hands of physiotherapists, occupational trainers and industrial medical officers who have received training in ergonomics from Prof. Landau (IAD).

2. Epidemiological assistance and results

A controlled observational study conducted in collaboration with Prof. Müller-Fahrmow of the Charité Hospital in Berlin, followed by a catamnestic telephone survey conducted in collaboration with Prof. Landau of the IAD Darmstadt [3], yielded overwhelming proof that, after completing these modules, patients faced with specific problems in performance of their normal work

- more frequently experienced sustained improvement in their physical capabilities,
- more frequently introduced ergonomic improvements at their workplaces,
- made less applications for invalidity pensions
- and were absent sick less frequently than those undergoing conventional rehabilitation only.
Ergonomisch ausgerichtete, medizinisch-berufsorientierte Rehabilitation

References

