

# Chapter 12

## Interdisciplinary Education for Research and Everyday Clinical Practice: Lessons Learned from InteRDoCTor Project

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### ABSTRACT

*Teamwork, interprofessional practice and learning are integral to current interdisciplinary research and health care – such approach can maximize professional resources and optimize outcomes. The development of modern technologies associated with medical sciences, and the variability of possible neurological deficits, interventions, and even scales makes this task very difficult. The key problem is regarded successful transition of students to competent work-ready professionals. Current models of education and cooperation within interdisciplinary teams may be not enough flexible. This chapter, based on own experiences from InteRDoCTor project, tries to answer the question: how shape interdisciplinary education and how their results may be wider incorporated into research and clinical practice?*

### INTRODUCTION

Increasing survival rates in severe illnesses and traumatic injuries have led to an increase in the number of disabled people. According to the WHO, there are about 650 million people with disabilities worldwide. Moreover, increasing life expectancy cause increasing amount of elderly people with similar needs. All they demand dedicated solutions in medical and social areas, providing them expected quality of life

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(QoL) and independence. Governmental agencies deal with the problem, how to provide it in the conditions of limited specialized medical staff and limited money to spend on. Possible way is to provide higher level of diagnosis, therapy, rehabilitation and care by:

- Preparation medical staff,
- Comprehensive learning for patients' caregivers,
- Proper choose of assistive technology (AT),
- Wider use of rehabilitation robots, telerehabilitation, etc.
- Exploitation of opportunities in the area of integrated solutions for disabled people.

Authors would to pay particular attention to simplicity, complexity, integrity, effectiveness of proposed approaches, and also issues which were unknown or unfortunately neglected previously. Various deficits are perceived most common due to:

1. Faster pace of life which influences e.g. increased number of post-stroke patients,
2. Development of acute care, resulting in:
  - Increased survival rates of prematurely born children,
  - Increased survival rates in severe accidents (including car accidents, etc.), including people with spine cord injuries (SCI), traumatic brain injuries (TBI), etc.,
  - Increased survival rates in severe poisonings, metabolic diseases, etc.

Aforementioned conditions can lead e.g. to damage (or malfunction) of key systems within human body, resulting in one or more deficits. Contemporary medicine helps to save human life but do not guarantee complete recovery. Thus number of disabled people increases rapidly. Another effort of health care and social care systems is need due to ageing of societies, especially in developed countries. Elderly people, especially with Parkinson's disease, Alzheimer's disease, require specific approach similar to patients with neurological deficits. Improved acute and post-acute care have decreased morbidity and mortality, but also results in earlier discharge from specialized units (including rehabilitation wards) influencing changes concerning contemporary role of neurorehabilitation. Aforementioned various clinical conditions and variety of demands and concepts within neurorehabilitation make this situation rather difficult. There is still urgent need for new, more effective approach. Therefore, increased need for evidence based practice may shape continuous development of theory and clinical practice.

Teamwork is natural in clinical practice in health care settings – huge part of clinical therapy and care is fulfilled by interdisciplinary therapeutic teams. Quick development of modern medical technologies and their applications in research and everyday clinical practice significantly influence interdisciplinary research. Variability of possible deficits, including neurological, associated interventions and care, makes necessary identification of core concepts, methods, and learning processes. Interdisciplinary team skills is seems be key issue of the EBM-based patient-centered biopsychosocial approach. Their implications for practice, education, and research are hard to overestimate and need for deeper analysis.

International-Interdisciplinary Research on Disorders of Consciousness in Toruń (InteRDoCTor) project tries to join efforts of various specialists (not only medical and health sciences, but also IT, biomedical engineering, biocybernetics/neurocybernetics, and robotics) toward development novel methods and devices in assessment, therapy and care in patients with disorders of consciousness (DoC). The variability of neurological deficits, interventions, and approaches makes this task very difficult.

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