UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Neuropsychological Rehabilitation

2021-2-F5104P024

Learning area

Learning objectives

Knowledge and understanding

- Neurobiological and functional basis of spontaneous and treatment-induced recovery of cognitive, emotional-motivational and behavioral deficits, caused by brain lesions and dysfunctions.
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- Setting up, running, and evaluation of neuropsychological rehabilitation treatments.
- Ability to evaluate the relevant scientific literature, in order to plan and perform clinical and research activities in this area.

Contents

The course provides information concerning the neurobiological and functional basis of recovery -- both

spontaneous, and brought about by rehabilitation treatments -- of cognitive and behavioral deficits, caused by brain lesions and dysfunctions. The course provides information aimed at the acquisition of knowledge and skills concerning the setting up, and running of neuropsychological rehabilitation treatments, and the ability to evaluate the relevant scientific literature.

Detailed program

Introduction

- Historical background, methodological foundations.
- Spontaneous functional recovery.
- [illegible]

Main rehabilitation methods

- Behavioral methods, based on the explicit training of the defective cognitive and emotional-motivational function(s), and the abnormal behaviors.
- Training to the vicarious use of not/less impaired cognitive functions and skills.
- Sensory stimulations.
- Transcranial stimulations (electrical and magnetic).
- Rehabilitation of different neuropsychological functions
- Aphasia: disorders of oral and written language (dyslexias and dysgraphias).
- Syndrome of unilateral spatial neglect and other deficits of spatial cognition.
- [illegible]
- “Dysexecutive” or “frontal” syndrome and disorders of non-spatial attention.
- Apraxia: disorders of complex intentional movement.
- Agnosia: disorders of object identification in the visual and acoustic modalities.
- Acalculia.

Neuropsychological treatment and support in specific diseases

- [illegible]
- [illegible]

Evaluation of the efficacy of a neuropsychological treatment.

Prerequisites

Knowledge is required concerning: 1) Genetics and Biology, as taught in the relevant courses (basic knowledge); 2) the anatomy and the physiology of the central nervous system, as taught in the course of “Anatomo-physiological Foundations of psychic Activity“; 3) the neurofunctional organization of cognitive and emotional-motivational processes, as taught in the course of “Physiological psychology” (BA degree in Psychological Sciences and Techniques). Finally, knowledge is required concerning the main neuropsychological syndromes and the clinical diagnosis in neuropsychology, as taught in the course of “Neuropsychology of the adult and the elderly”.

Teaching methods

Theoretical classes; illustration and discussion of diagnostic and rehabilitation materials and tasks for the assessment of neuropsychological recovery.

IMPORTANT. Due to the Covid-19 emergency period, it may happen that lessons will be taught remotely. Any change of the situation will be communicated.

Assessment methods

1. Written assessment. The written assessment includes multiple choice and open-choice questions on the topics of the course. An example of the organization of the written assessment is the following:

a) 30 multiple choice 4-alternative questions, with 1 correct choice. One point is assigned for each correct answer, with no penalty. The minimum score for a successful assessment is 18 out of 30 correct answers. Example: “In the rehabilitation of unilateral spatial neglect by visual prisms, the effective direction of the prism-induced shift is: 1: leftward; 2: rightward (correct choice); 3: alternate; 4: downward.

b) An open question to which a complete and concise response is to be provided. Example: “Briefly describe the main methods for the rehabilitation of lexical deficits in aphasia”. 0-3 points are assigned to the response to the open question, based on the assessment by the teacher.

2. Oral assessment (optional, after the written assessment). The oral assessment includes one or more open questions, to which concise and complete responses are to be provided. Example: “What are the techniques based on the alternative and augmentative strategies for the rehabilitation of aphasia?”. The evaluation of the oral assessment may result in a modification of the final score of the exam with a positive or negative sign, or in no change.

The students’ learning may be also evaluated by a written (see above #1) *in itinere* assessments, performed at the end of the course.

IMPORTANT. Due to the Covid-19 emergency period, it may happen that the exam will be made remotely. Any change of the situation will be communicated.

Textbooks and Reading Materials

- Vallar, G., & Papagno, C., a cura di (2018). Manuale di neuropsicologia. Clinica ed elementi di riabilitazione. Bologna: Il Mulino (cap. 21, pp. 501-535).
- Làdavas E., a cura di (2012). La riabilitazione neuropsicologica, Bologna: Il Mulino.
- Learning materials made available on the web site of the course.