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ABSTRACT HABILITATION THESIS

Physical medicine and rehabilitation through the lens of clinical interdisciplinarity

The best results in rehabilitation can only be achieved through multidisciplinary teamwork. Rehabilitation medicine is defined in direct correlation with the concepts of functionality, disability and health. Evaluation and intervention management are based on these concepts and offer a huge potential for starting new research groups that can apply to new national and international programs. All of my research and scientific work is based on the concept of teamwork.

This habilitation thesis entitled "Physical medicine and rehabilitation through the lens of clinical interdisciplinarity" represents a synthesis of my academic, professional and scientific activity, especially undertaken after obtaining the title of Doctor of Medicine. The research side and the professional side were closely related throughout my course in the specialization of Recovery, physical medicine and balneology (currently called Physical and Rehabilitation Medicine).

I have made efforts to convince medical colleagues from other specialties that physiotherapy applied in compliance with the indications and contraindications has no adverse effects. This involves in-depth knowledge of physical procedures. With this aim, we investigated the effects of electrotherapy in patients with known heart diseases. Most patients with degenerative joint diseases are elderly with multiple comorbidities, including cardiac ones. We studied and demonstrated the safety of electrotherapy, applied at the level of peripheral joints, in this category of patients. This study represents a landmark in research of this kind.

Burnout syndrome has been described as a condition in which professionals "lose all concern, all emotional feeling for the people they work with and end up treating them in a detached or even dehumanizing way." It is well known that since it was declared a global pandemic by the World Health Organization (WHO) in March 2020, the 2019 coronavirus (COVID-19) pandemic has placed an incredible strain on healthcare workers.

Burnout levels of healthcare workers has not been thoroughly assessed during pandemics. For the first time, we published the records of the exhaustion of doctors in the specialty of Physical Medicine and Rehabilitation during the COVID pandemic. This is a landmark and an alarming signal about the safety of the medical profession in the future.

Balneotherapy is a treatment method that uses natural therapeutic factors (mineral/thermal waters, mud, therapeutic gases-mofet) with researched and recognized curative qualities, based on the chemical, mechanical and thermal effects on the body, which are found in balneo-climatic resorts. Since entering the specialty, I have been interested in this field and I have had a series of presentations, which culminated in publications. In the last article there is a beautiful collaboration with the team from the Techirghiol Sanatorium about mineral waters and therapeutic mud. Romania is among the European countries with a remarkable spa and health potential. About 1/3 of the mineral and thermal waters in Europe are located here.

One of the challenges of current medical practice, regardless of specialty, is combating eating disorders and the complications that arise. The most important effects are obesity, diabetes and microcrystalline arthropathies, among which gout occupies a prominent place. The diagnosis of gout is not a problem in most cases, but the treatment can be difficult with results below the expectations of the patient and the doctor. We managed with an orthopedic team to save the leg of a patient with severe chronic gout. This success led me to publish the results and develop an up-to-date to therapy.

Frostbite affects the population in our geographic area less often. Frostbite arthropathy is a rare cause of osteoarthritis. For the first time I published a case in Romania with an update of the current knowledge.

I will also emphasize the professional and educational development perspectives that, together with the research activity, must constitute the prerequisites for obtaining the position to lead doctoral theses.

New research directions will be developed, through collaborations in multidisciplinary teams, for the complex evaluation (clinical, imaging – paraclinical examination by ultrasound, histological and functional evaluation) of patients with disabilities.

The main research directions proposed for the future are represented by: Rehabilitation of oncological patients; Applicability of specific rehabilitation procedures to pregnant women with musculoskeletal pathology; Involvement of micro and nanoplastics in joint, muscle, nerve and bone pathology; Rare diseases and implications in rehabilitation; Spirituality, faith and rehabilitation.

The academic activity will be dominated by the permanent updating of the didactic materials, the permanent modeling and adaptation of the teaching support. I will actively involve students and residents in the complex learning process by participating in scientific events on specialized or interdisciplinary topics and I will continue to coordinate students in order to realize the practical part of the bachelor's thesis. I will stimulate young PhD students/masters students to access funds intended for fundamental research in medicine/scholarships and funding sources for young researchers and I will ensure a continuous annual publishing activity, through publications in specialized journals indexed by ISI and BDI, to increase the visibility and reputation of the faculty ours in the specialized academic world.