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LETTER TO THE EDITOR

DON'T TOUCH THE PHYSICAL IN "PHYSICAL AND REHABILITATION MEDICINE"

Sir,

Does "physical and rehabilitation medicine" (PRM) still require the adjective *physical*? This word irritates many physiatrists, as it seems to recall a naïve enthusiasm for the most varied and sometimes fanciful forms of treatment based on physical agents (electricity, traction, heat, etc.) in the early days of the discipline. Four recent papers, 2 published in the *Journal of Rehabilitation Medicine* (JRM) (1, 2) and 2 in *Clinical Rehabilitation* (CR) (3, 4), revisit this far from obsolete debate.

In the JRM papers readers are invited to contribute to a conceptual description of the rehabilitation strategy based on the World Health Organization (WHO) International Classification of Functioning, Disability and Health (ICF) (1) and to provide "comments regarding the understanding and definition of physical medicine in the context of the medical specialty PRM" (2). Human "functioning" (1) is emphasized as a direct object of healthcare policy, over and above the biological aspect of disease, and as the strategic core of *rehabilitation*, which includes both medical and non-medical (e.g. prosthetic bioengineering, barrier-free architectural planning) interventions. The distinction is between *body functions* and *whole-person functioning*, the latter meaning the person-environment interaction and justifying the ICF words *activity* and *participation*.

Two relevant issues remain open to debate:

- divergent positions persist across individual scientists and national boundaries as to whether or not the term *physical* should complement rehabilitation medicine and, if so, why (2);
- when applied in the context of PRM, the word *functioning* – crucial to the ICF taxonomy – in any case requires a more precise definition (1).

Regarding the first issue, the CR papers (3, 4) call for the removal of the adjective *physical*. The first paper states that the adjective *physical* limits the scope of rehabilitation (3), as it either implies a dualism in approaching body and mind or, by implicitly equating *physical* and *real*, it rejects the very existence of the patient's non-physical problems, such as pain or depression. Only tangible interventions would belong to the PRM domain, e.g. orthoses, but not any form of teaching or counselling. The second article (4) states that the adjective *physical* is unfortunate because it endorses another form of dualism that separates psychological and motor styles/practice of rehabilitation.

In response to the JRM invitation, we contend that:

- the term "*physical*" should be preserved. It is not the opposite of either "mental" or "unreal/imaginary", but indicates "medicine of the person-environment interaction";
- the term *"physical"* is a hallmark of identity for PRM. It highlights a unitary therapeutic approach to the person-environment interaction, not a dualism between touchable and psychological treatments.

Physical derives from the Greek term *physis (φύσις)* meaning *nature*. In modern languages the prevailing meaning of *nature* is one of *external world/physical environment* (in a sentence such as "animals are part of nature"). Why did the term *physical* survive only in PRM, of all the medical specialties? We agree that it is because it implicitly indicates medicine "practised from the outer world on the person as a whole", whereas the biomedical model implicitly asserts that medicine is biology applied to Man (7). *Physical-external medicine* has to do with the person as a whole, while *biomedical-internal medicine* has to do with body parts (in this sense, surgery is also internal medicine) (7, 8).

The *physical-external* model of medicine has ancient roots. In Latin, the medical doctor was an erudite called *physicus*, and he/she is still the *physician* in contemporary English. The *physicus* could work only from *outside* the body. In fact, it was not until the 17th century that the study of the body *from inside* emerged (9). The *biomedical-internal* model became so strong that the antagonist terms *external* or *physical* almost disappeared. The term *external*, though rare, can still be found (particularly in eastern medical cultures), but it mainly indicates diagnostics and treatments applied to the body surface. The history of the term *physical* is perhaps more complex. In the 19th and 20th centuries, physics began to be applied to medicine, prompted by the successes of electromagnetism and sub-atomic physics. The term *physical medicine* emerged to indicate the use of *physical energies* such as heat and electricity (10). This was a reductive approach, as far as it emphasized the means rather than the end. Nevertheless, it anticipated renewed interest in the interaction with the outer world as an ingredient of medical science.

A wider concept of *physical medicine* as a specialty focused on health-related interactions between the person and the world followed the growth of the so-called *biopsychosocial* model of medicine. Originally conceived in the late 1970s by a psychiatrist (11), this term gained popularity as a synonym for a medicine encompassing either the biology of body parts, or the interaction between the individual person, other persons, and the outer world. Any clinical specialty should conform to this model, as far as it still reflects the Greek meaning of *clino (κλίνω)*, I'm leaning: in this case, towards a bedridden patient. The same does not hold for the biosciences only applied to body parts (e.g. genetics or immunology) or the social sciences only applied to populations (e.g. epidemiology, public health, sociology).

What specific type of interactions does PRM deal with? We agree that interaction is synonymous with function, and that in

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medicine *function* should be assigned the meaning of *exchange or energy or information* (8). However, within the biomedical model, the interaction-function-exchange may apply only to body parts or structures (e.g. nerve and muscle, heart and lung). An incorrect exchange may lead to disease or impairment. Within the biopsychosocial model the interaction-function-exchange occurs only between the person as a whole and the outer world (e.g. in locomotion or communication). An incorrect exchange may lead to activity limitations (as per the individual perspective of functioning) and/or wrong participation (as per the social perspective of functioning). When physical procedures aim at improving person's activities or participation, *physical medicine* is the means, *rehabilitation medicine* is the end.

This "means and end" content assigned to the definition of the PRM specialty is consistent either with the ICF or with the two previously proposed definitions of *biomedical rehabilitation sciences* and *integrative rehabilitation sciences* (12, p. 294), as well as with the explanation of the 2 parts of the name given to the specialty in a relevant European position paper (5, Appendix 1b). The "physical medicine and rehabilitation medicine" definition has two advantages. First, it defines *one* specialty and not *any* specialty related to biomedicine or social interaction when applied to disabled persons. Secondly, it remains bound to terms with an established tradition.

Some corollaries follow:

- As far as the person-world interaction is focused on, the person must be accepted as indivisible and, most important, as a reality. No longer can he/she be viewed as a *phenomenon (appearance*, to take the Greek meaning), an illusion behind which the *true biological reality* is lying. The reality of the biomedical model is simply the person's parts (as tiny as molecules) linked by deterministic (though often unknown) relationships. The *person-is-reality* approach implies specificity of the research paradigms of PRM, with respect to the biomedical paradigms (13).
- *Physical* is not the opposite of *psychic*. PRM can well apply to "immaterial" phenomena, such as memory, language comprehension, pain and the like. These latter are functions of the whole person (14). As such, they can be detected only if they entail observable activities "from outside" the person's body, and can be treated through the exchange of information (e.g. speech therapy for aphasia).
- Neither *physical* methods nor the *rehabilitation* goal, taken individually, are unique to PRM: it is their interaction that generates specificity. *Physical* energies are commonly used also by *internal* medicine to treat body parts (e.g. laser treatment of the retina). Non-physical procedures (e.g. tendon transfer in tetraplegia) may also have a *rehabilitation* goal. Nonetheless, none of these procedures represent interventions requiring either PRM specialists or allied professionals. By contrast, strengthening exercises and counselling on bladder self-catheterization are examples of approaches requiring *physical* methods aiming at a *rehabilitative* goal: their coexistence is imposing specific PRM competences.

To sum up, sticking only to *physical medicine* or, even worse, to *physical therapy* would be very reductive. On the other hand, ignoring the word *physical* would implicitly deny the need for medical skills in PRM. Calling for "pure" *rehabilitation* as the wide domain of any intervention directly or indirectly promoting social integration would risk blurring the boundaries between medical and non-medical competences and responsibilities. We conclude, therefore, that the double denomination of our specialty "physical and rehabilitation medicine" (5) is the best one to embrace both its conceptual structure and its deep and wide content, spanning biology to behavioural sciences.

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