LETTER-TO-THE-EDITOR

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Sports and exercise medicine in undergraduate medical curricula in developing countries: a long path ahead

Changing undergraduate medical curricula to put more emphasis on teaching medical aspects of sports and exercise has been recommended for some years (1). This is partly because increasing evidence suggests an important role for physical activity and exercise in health promotion, and also because of the increasing number of sports-related injuries and diseases in which both general practitioners and other specialist physicians may be involved. In addition, students who have been exposed to sports and exercise medicine (SEM) education have the opportunity to direct their own learning goals and focus on their areas of interest in SEM. A study in Britain reported that the majority of general practitioners were inadequately trained to practise SEM and a majority of them would be interested in more training in this area (2).

While these points explain why SEM topics have been integrated in the undergraduate medical curricula in developed countries, it seems that almost the same issues arise in some middle- and high-income developing countries.

Some developing countries have a young population in which sports-related diseases and injuries need to be addressed (3). SEM is a newly developing field in these countries and currently physicians with other specialities and also general practitioners are involved in treating sports-related injuries and diseases. Therefore, in these countries more undergraduate education in SEM is needed to teach medical students about prevention of sports-related injuries and diseases and appropriate ways to deal with these problems. Teaching SEM to undergraduate medical students helps those who are not interested in sports medicine as a career to be better equipped to deal with sports-related issues in their future clinical practice as a general physician or specialist in other fields.

More importantly, the World Health Organization has reported a growing rate of mortality and morbidity due to non-communicable diseases in developing countries. In this regard, an important preventive role has been suggested for physical activity and exercise, particularly among younger populations (4–7). The continuing growth of health problems related to inactivity such as obesity and Type 2 diabetes in some developing countries might lead to major health crises in these regions (8). While increasing physical activity and exercise prescription seems to be a very important solution in prevention of these diseases, lack of physician knowledge as a barrier in this area has been reported by some authors (9). Thus there is a need to change medical school curricula to increase knowledge among tomorrow's physicians of the benefits of physical activity in health promotion and prevention of diseases. In addition, development of counselling skills of physicians to increase physical activity of their patients by modifying their behaviours and lifestyle should be considered as one of the compulsory courses for medical students. More knowledge of physicians on the benefits of exercise might help increase the levels of physicians' physical activity, which is important not only for their own health but also for the general population's health, in that physicians can be good role models for their patients and community (10).

Although course directors and SEM specialists might still struggle with general practitioners and other specialists regarding recognition of this field (11), postgraduate education in SEM is available in some developing countries (12). As in other postgraduate fields, medical students need to have an opportunity to become aware of these programmes. Familiarity of medical students with SEM might increase their interest in this new area of medicine.

On the basis of the points above, we tried to implement SEM in the medical school curriculum in Iran, and faced two major problems. In Iran, most of the undergraduate curriculum in medical universities is compulsory, and each university can only offer a few optional study modules. In addition, the current national undergraduate medical curriculum is seven years, which is too long. Thus implementation of SEM in the undergraduate medical curriculum as a compulsory course necessitates either shortening some existing courses, in opposition to the course directors and professors, or extending a curriculum which is already too long. Another important challenge is the lack of sports medicine specialists, which is a real barrier to offering a SEM course in many universities in Iran.

According to the current national medical student curriculum, optional courses can only be implemented in

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the first two years of the curriculum, which includes basic science courses. We might be able to convince the academic board of education of Tehran University of Medical Sciences to add SEM to the first or second year of the curriculum as an optional course, but skills such as motivating patients to participate in more physical activity would be better taught in a clinical setting. Clinical education in the fifth or sixth year would be a better option to teach SEM to medical students.

Constructive alignment has been suggested as a prominent principle not only in design of an SEM course (13) but also in revision of other courses for medical students (14). However, the basic educational contents that we teach in the SEM course to undergraduate medical students in Tehran University of Medical Sciences are based on the following topics.

1. Increasing physical activity and exercise prescription for health promotion.
2. Health-related physical fitness components, assessment and plans to improve them.
3. Special effects of physical activity and exercise on women, children and the elderly.
4. Exercise programmes for management of obesity and lower back pain.
5. Initial management of musculoskeletal sports injuries.
6. Abuse of drugs in sports and doping.

These topics were chosen through consulting with SEM experts and needs assessment of medical students and general practitioners (15, 16); our ideas regarding the important fields in which medical students were being less trained, such as exercise and lower back pain, and also forbidden drugs for athletes (17, 18); and finally the health problems that are more fully addressed in developed countries, as mentioned before.

To sum up, it seems there is still a long path ahead to finding an ideal SEM course for medical students in Iran and other developing countries. However, in light of our experiences, other medical universities of Iran and also other developing countries should start teaching the major topics of SEM to medical students. The gradual improvement of this course can be planned by the experts of the future.

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