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## Necessity of Adding Sports and Exercise Medicine Topics to the Undergraduate Medical Curriculum in Iran

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### ABSTRACT

**Background:** Considering the pivotal role of sports and exercise in health promotion and disease prevention, there is a pressing need for adding the sports and exercise related topics into the medical schools' curriculum. However, there is paucity of data about the skill and knowledge of general practitioners and interns as well as their interest in topics related to sports and exercise medicine.

**Objectives:** The aim of this study was to assess the knowledge and interest of interns and general practitioners about sports and exercise medicine related topics.

**Materials and Methods:** A cross-sectional study was performed in 2009 to determine the knowledge regarding each listed topics of sports and exercise medicine in addition to the attitudes toward insertion of mentioned topics into the undergraduate medical curriculum of 86 interns from Tehran University of Medical Sciences (TUMS), and 314 general practitioners (GPs) attending Iranian national congress of general practitioners. In this regard, a questionnaire was developed by consulting with the experts.

**Results:** The mean age of the 81 interns was 26.6 years (23-38 years); while 56 (69.1%) of them were male and 25 (30.9%) were female. For the 287 GPs, the mean age was 36 years (26-46) and 208 (74.8%) were male. The response rate for interns was 94.1% and for the GPs was 88.5%. More than two-thirds of interns and nearly 90% of GPs believed that undergraduate medical students should be trained in the matter of sports medicine topics. The two topics that both interns and GPs agreed on adding into the medical curriculum the most were approach to life-threatening sports injuries and exercise therapy for patients with low back pain.

**Conclusions:** The levels of knowledge and skill among Iranian physicians on major topics of sports and exercise medicine are low to medium. GPs and interns are the first line of patient management so our findings suggest adding some sports medicine related topics into curriculum of medical doctors.

### ► Implication for health policy/practice/research/medical education:

The levels of knowledge and skills in Iranian physicians on major topics of sports and exercise medicine are low to medium. As the first line of management of patient, GPs and interns advise to insert the sport medicine related topics into curriculum of medical doctors.

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## 1. Background

Many efforts have already been undertaken to convince the course directors and medical education experts to include medical aspects of sports and exercise in medical curriculum of undergraduate medical students (1). The necessity has emerged as a result of important implications of physical activity and exercise in the prevention of non-communicable diseases and promotion of health worldwide (2). Parallel to the increasing involvement of general population in sport activities, more sports injuries will occur, which eventually implies on the more involvement of physicians in the management of such injuries (3).

Buckler reported that most of the British general practitioners (GPs) were not well trained in sports and exercise medicine, while majority of them were interested in getting more involved in principles of this area (4). In this regard, sports and exercise medicine topics have been integrated in the undergraduate medical curriculum in developed countries. However, it seems that there is a lack of major topics of sports and exercise medicine in undergraduate medical curriculum of some developing countries such as Iran (5). Postgraduate education in sports and exercise medicine is available in some developing countries (6). Similar to other postgraduate fields, medical students should have an opportunity to get familiar with such program, most importantly because informing medical students about sports and exercise medicine might increase their interest in this new area (7, 8).

Data on the knowledge and attitudes of GPs and interns along with their interest in topics of sports and exercise medicine are rare (9-13). GPs and interns are considered as the first line providers of health care services (14). Besides, the community of GPs and interns would shape the future structure of sports medicine in both public and private settings (4). Therefore, their levels of knowledge in this area and attitudes regarding adding some sports and exercise medicine related topics into medical curriculum could be important.

## 2. Objectives

In this study, we sought to evaluate the knowledge and attitudes of interns and general practitioners about major topics of sports and exercise medicine.

## 3. Materials and Methods

We performed a cross-sectional study from April 2009 to June 2009. We assessed the attitudes and current knowledge of 86 volunteer interns from Tehran University of Medical Sciences (TUMS) and 314 GPs attended the Iranian national conference of general practitioners, regarding some major topics of sports and exercise medicine. We also evaluated their attitudes toward inclusion of such topics into educational curriculum of medical students. A questionnaire regarding some topics in sports medicine and medical education was developed by authors based on literature review and interviews with sport medicine experts. To ensure that the questionnaire is reliable, we performed a pilot study of 15 medical interns which suggested that the questionnaire is reliable and internally consistent. Using a three point Likert scale, subjects were asked to rank their levels of knowledge about each listed topic of sports and exercise medicine (1.nothing or low; 2.medium; 3. high or excellent) along with their attitude toward the insertion of mentioned topics into the undergraduate medical curriculum (1. Disagree; 2. No-idea; 3. Disagree) (Tables 1 and Table 2). No statistical tests were performed to analyze the results and the descriptive results were presented by the frequency of answers to each item. Verbal informed consent was obtained from all participants and they were informed about the purpose of the study and how the data is going to be used. The study protocol was approved by ethical committee of TUMS.

## 4. Results

From a total of 86 volunteer interns and 314 GPs, 81 (94.1%) interns and 278 (88.5%) GPs completed the questionnaires.

**Table 1.** Self-reported Levels of Knowledge or Skill of Interns from Tehran University of Medical Sciences and Some Iranian General Practitioners on Some Sports and Exercise Medicine Topics

Sports and Exercise Medicine Topics	Interns, (%) (n = 81)			General Physicians, (%) (n = 278)		
	Low	Medium	High	Low	Medium	High
Approach to life-threatening sports injuries	5	69	26	2	70	28
Initial management of musculoskeletal sports injuries	5	89	6	6	72	22
Exercise and Sport in special groups (women, children, elderly, disabled)	22	63	15	9	77	14
Exercises therapy for patients with low back pain	9	65	26	5	66	29
Doping and forbidden drugs for the athletes	26	68	6	26	63	11
Sports Nutrition and supplements	23	62	15	9	76	15
Hygiene Issues related to different sports	21	65	14	12	70	18
Exercise prescription for health promotion	17	73	10	12	70	18
Exercise programs for management of obesity	19	68	13	10	70	20
Cardio pulmonary resuscitation in the sport field	10	61	29	7	66	27

**Table 2.** Attitude of Interns From Tehran University of Medical Sciences and Some Iranian General Practitioners Regarding Insertion of Sports and Exercise Medicine Topics in Undergraduate medical Curriculum

Sports and Exercise Medicine Topics	Interns, (%) (n=81)			General Physicians, (%) (n=278)		
	Agree	No-idea	Disagree	Agree	No-idea	Disagree
Approach to life-threatening sports injuries	84	10	6	1	5	94
Initial management of musculoskeletal sports injuries	73	14	13	2	6	92
Exercise and Sport in special groups (women, children, elderly, disabled)	55	24	21	3	13	84
Exercises therapy for patients with low back pain	90	5	5	1	3	96
Doping and forbidden drugs for the athletes	57	29	14	4	17	79
Sports Nutrition and supplements	73	21	6	3	11	86
Hygiene Issues related to different sports	50	30	20	5	19	76
Exercise prescription for health promotion	58	24	18	3	12	85
Exercise programs for management of obesity	77	14	9	2	7	91
Cardio pulmonary resuscitation in the sport field	78	14	8	2	6	92

There were no significant differences between the sex and age of respondents and non-respondents. The mean age of the interns was 26.6 years (23-38 years). Fifty six (69.1%) interns were male and 25 (30.9%) were female. For the GPs, the mean age was 36 years (26-46), while 208 (74.8%) were male and 70 (25.2%) were female.

Table 1 summarizes the self-reported levels of knowledge or skill of Interns from TUMS and some Iranian GPs on some sports and exercise medicine topics. In table 2, summary of reported attitudes of participants regarding insertion of sports and exercise medicine topics in the national undergraduate medical curriculum are shown. The two topics that both interns and GPs agreed on adding to the medical curriculum the most were approach to life-threatening sports injuries and exercise therapy for patients with low back pain.

## 5. Discussion

More than two-thirds of GPs and interns of TUMS believed that their knowledge or skills about topics related to sports and exercise medicine is medium to low. Considering the growing importance of physical activity in health promotion and relative increase of the prevalence of exercise-induced injuries and diseases, lack or insufficient knowledge and skills among general practitioners and medical students on the verge of graduation might lead to mismanagement of patients (3, 15-19). More than two-thirds of interns and nearly 90 percent of general practitioners believed that undergraduate medical students should be educated regarding some sports medicine topics.

Some topics of sports and exercise medicine are of utmost importance in the emergency care of people especially athletes (20). It seems that teaching the undergraduate students how to approach to sports injuries and emergent cardiopulmonary resuscitation in the sport field along with proper exercise prescription for special

subgroups including disabled, elderly and children have higher priority for being added into the undergraduate curriculum of medical schools. Besides, the knowledge of practitioners on whether the routine drugs that are widely used in practice have been declared as forbidden ones or not is quite low. This might predispose the athletes at risk of unintended doping; thereby, adding such topics into the curriculum of medical students seems to be important (21, 22). Both groups of subjects (GPs and Interns) were interested in education of preventive and therapeutic exercises for management of low back pain (93.7% and 83.8% respectively). This finding should also be considered for adding related topics in the curriculum of undergraduate medical students.

In conclusion, it seems that the levels of knowledge and skills of physicians in Iran about major topics of sports and exercise medicine is low to medium. On the basis of these findings, inclusion of sports and exercise medicine related topics into the undergraduate medical curriculum is recommended in developing countries such as Iran.

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