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Original research

## Practice patterns, counseling and promotion of physical activity by sports medicine physicians

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### ABSTRACT

**Objectives:** This study examined sports medicine physicians with an established interest in physical activity to investigate attitudes surrounding exercise, physical activity and patient-counseling behavior. The degree to which physicians' personal knowledge of physical activity and related resources, involvement with common activities, and perceived barriers were assessed.

**Design:** An internet survey was designed in four domains: (1) counseling behavior, (2) tools and resources, (3) appropriateness of common physical activities for patients and (4) barriers.

**Methods:** The survey was sent to 3570 members of two electronic mailing lists - Institute of Lifestyle Medicine, Boston, MA and The American College of Sports Medicine. Surveys were emailed during 2011–2012 and analyzed in 2013–2014. Each survey contained 39 questions.

**Results:** The response rate of the surveys was 16%. Of 412 physicians, 74% regularly recommended physical activity, 66% talked about exercise with patients, and 49% included as a vital sign. Only 26% of physicians provided a written exercise prescription. ACSM's Exercise is Medicine® (37%) was the most popular resource. Walking, followed by aerobic activity, strength training and cycling were the most recommended forms of activity and were associated with physicians' personal experiences. The most potent inhibitor was time.

**Conclusions:** Physicians with an interest in exercise and physical activity recognize the importance of recommending and counseling patients on exercise and physical activity. Physician counseling was associated with personal familiarity with physical activity. Increasing knowledge and experience with exercise, physical activity and counseling behavior is an important component to encourage physical activity assessment and promotion by sports medicine physicians.

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### 1. Introduction

Adequate physical activity, in addition to a healthy diet, weight control and lack of smoking, serve as a foundation of lifelong health and wellbeing.<sup>1</sup> There is strong evidence that regular physical activity can prevent as well as treat many chronic non-communicable diseases including: heart failure, coronary heart disease, insulin resistance, Type 2 diabetes, and obesity.<sup>2</sup> In addition to disease prevention and treatment, physical activity has a profound impact on brain health,<sup>3</sup> life expectancy<sup>4</sup> and overall quality of life.<sup>5</sup>

Physicians have been identified as having a critical role in addressing the prevalence of physical inactivity.<sup>6</sup> Indeed,

promotion of physical activity in primary care settings has been shown to significantly increase physical activity levels of patients.<sup>7</sup> Several initiatives have begun advocating for the inclusion of physical activity when designing treatment plans for patients, including Exercise is Medicine<sup>®8</sup> Healthy People 2020<sup>9</sup> and the U.S. National Physical Activity Plan.<sup>10</sup> There is evidence to suggest that systematic collection of exercise and physical activity information by physicians is associated with small but significant changes in exercise related clinical processes and outcomes.<sup>11</sup>

Despite the calls for change and evidence of success, currently fewer than 50% of US primary care physicians regularly offer their patients advice for physical activity.<sup>12</sup> In fact, in the United States, the percentage of physician office visits that included physical activity counseling averaged only 9.2%.<sup>9</sup> Further, only 32% of patients report receiving specific guidance on exercise or physical activity from their physician.<sup>13</sup>

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Specific reasons for lack of counseling have been outlined. Inadequate medical training has been cited and it has been noted that physical activity is generally not taught in US medical schools.<sup>14,15</sup> Indeed, a qualitative study of general practitioners determined that prescribing physical activity is seen as a challenge due to lack of knowledge, as well as missing systems, routines, and trusted referral arrangements.<sup>16</sup> Inadequate time is also a common barrier to physician counseling.<sup>17,18</sup>

Physicians' personal exercise and physical activity practices also affect their attitude promoting exercise and physical activity with their patients. When physicians exercise, they are more likely to recommend physical activity to their patients.<sup>18,19</sup> With regard to counseling behavior, physicians who had adequate knowledge,<sup>17</sup> as well as a normal body mass index (BMI) and regular participation in vigorous physical activity,<sup>20</sup> were more likely to feel confident about counseling their patients on physical activity. Perhaps more importantly, patients are more likely to reach clinical targets when their physicians are active.<sup>21</sup>

It is clear that the importance of physical activity and health falls most in line with the specialties of sports and exercise medicine. However, there is limited data investigating the clinical practices of this targeted group of physicians with regard to physical activity promotion. This study examined primary care and specialist physicians with an established interest in physical activity, exercise and sports medicine. The objective of this study was to examine the patient-counseling behavior of this unique cohort of physicians. In order to determine any factors influencing these clinical practices, secondary analyses were conducted to understand physicians' personal knowledge and attitude regarding physical activity including: resources utilized, personal involvement with common activities and perceived barriers to counseling. As such, four domains of physician behavior were surveyed including: (1) counseling behavior on physical activity, (2) tools and resources physicians used to aid in physical activity counseling, and (3) subjective assessment of appropriateness of common physical activities for patients (4) factors that may inhibit counseling behavior.

## 2. Methods

The authors developed an international internet based survey targeted to the following domains: physician counseling behavior, use of resources, perceived barriers/inhibitors, and the influence of personal exercise experience on appropriateness for patients. The survey was sent to members of two electronic mailing lists, one from the Institute of Lifestyle Medicine, a research institute at Harvard Medical School, Boston, MA and another from the American College of Sports Medicine. Surveys were emailed during the winter of 2011–2012 to all members of each mailing list and analyzed in 2013–2014. Each survey contained 39 questions and took approximately 10–12 min to complete. The survey was emailed three times to each person on the mailing list. Participants were entered into a drawing for a tablet reading device upon completion. This study was approved by the Spaulding Rehabilitation Hospital Institutional Review Board.

The first survey domain addressed the nature of physicians' approaches to exercise and physical activity with their patients. Physicians were asked to what percent of their patient load did they: (1) discuss, (2) recommend, (3) provide a written prescription, and (4) if prescribed, saw their patients make progress in physical activity. Lastly, they were asked if they used physical activity as a vital sign in their clinical screening (yes/no).

The second domain included a list of commonly used resources and tools available for physicians to use in their practice. Physicians were asked to indicate whether they used Exercise is Medicine®, American Heart Association, American Academy of Family

Practitioners American's in Motion-Healthy Interventions (AIM-HI) or Other (open ended) to aid the discussion of physical activity with their patients.

The third domain assessed attitudes surrounding eight different activities: walking, aerobic sports, cycling, strength training, swimming, yoga, team sports and dancing. Respondents were asked on a 10-point scale (1 = not at all; 10 = a great deal) how familiar they were with the activities, based on their own experience and asked to rank each for appropriateness for patients on a 5-point scale (1 = very inappropriate for majority; 5 = very appropriate for majority).

The fourth domain asked physicians to rank five inhibitory factors/barriers: lack of time, lack of incentive, lack of patient compliance, lack of tools/materials, and lack of knowledge/skill on a 10-point scale (1 = does not inhibit; 10 = completely inhibits).

In addition to the aforementioned domains, participants were also asked to self report their own personal physical activity levels, body weight and dietary habits.

Data that was completed via the online survey was analyzed in SPSS 11.5 (Armonk, NY). Means and standard deviations (SD) were calculated for all continuous variables. Descriptive, bivariate *t*-tests and correlation statistics were computed. *p*-values ≤0.05 were considered statistically significant.

## 3. Results

The first email list consisted of 1158 individuals from the Institute of Lifestyle Medicine contact list, of which 268 were completed (23%). The second email list consisted of 2412 physicians from the ACSM, of which 352 were completed (15%). Of the total 620 completed surveys, 45 were mostly blank or nearly blank and discarded. Thus, the effective total of respondents was 575 individuals, a response rate of 16%. Of these respondents, 412 identified themselves as physicians (including MD and DO) and were included in the analysis (Table 1). The physicians were divided between primary care physicians (*n* = 217) and specialists (*n* = 195). Physicians ranged in age from 20 to 80 years old. On a scale of 1–10, physicians rated their own weight status as 5.6 (SD 1.2; 1 = underweight, 5 = normal, 10 = overweight) and nutrition habits as 7.2 (SD 1.9; 1 = unhealthy, 10 = healthy).

Seventy-four percent (74%) of physicians indicated they recommended physical activity. While sixty-six percent (66%) talked to their patients about physical activity, only twenty-six percent (26%) actually provided a written exercise prescription. Specialists (33%) were more likely to prescribe exercise to their patients than primary care physicians (20%) (*p* < 0.001). Nearly half of all physicians, forty-nine percent (49%), included exercise as a vital sign. The report of these clinical practices was not statistically different between primary care physicians and specialists (Table 2). Further,

**Table 1**  
 Physician characteristics.

Characteristic	Percentage	N=	Mean ± SD
Average Minutes of Exercise Per Week			227 ± 159
Gender			
Male	53%	218	
Female	47%	194	
Practice			
Primary Care	52%	217	
Specialist	48%	195	
Age (years)			
20–29	3%	13	
30–39	26%	107	
40–49	26%	107	
50–59	33%	135	
60–69	9%	37	
70+	3%	13	

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