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The Practice of Primary Care Sports Medicine in the United States

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Abstract

Objective: To investigate and to characterize the practice patterns, academic rank, and income variables that exist in order to better understand the career of a sports medicine physician in the United States.
Design: A cross sectional survey of family physicians holding a Certificate of Added Qualifications in Sports Medicine through the American Board of Family Medicine as of January 2006.
Results: The survey was completed by 325 of 862 physicians for a return rate of 38%. Of all respondents, 212 (65%) reported completing a Primary Care Sports Medicine Fellowship, 276 (85%) were male and 49 (15%) were female, and 300 (92%) reported having a M.D., while 25 (8%) had a D.O. Clinical duties represented the largest proportion of the physicians' schedules (7.94 half days/week), and the majority of physicians performed routine athletic event coverage. The average salary for all physicians was $166,000 US. Higher income groups included: men ($172,000 vs. $132,000 for women), regions including – Central, South East, and South West, full professors, and non student health or urgent care clinical work. Controlling for all other variables, four groups demonstrated significant higher odds of being high income earners (annual gross salary > $200,000 US). These groups included age over 40, male sex, practice owner, and seeing over 10 patients per half day.
Conclusions: Salary can be related to age, gender, number of patients seen, and practice ownership. No statistical difference among salaries was found between M.D.'s and D.O.'s, OMT practice, region of the country, or how practices are marketed.

Introduction

In the United States, primary care sports medicine is a subspecialty of numerous disciplines including internal medicine, family medicine, pediatrics, physical medicine and rehabilitation, and emergency medicine. According to the American Medical Society for Sports Medicine, a sports medicine physician is one who promotes lifelong fitness and wellness and encourages prevention of illness and injury. He or she is a leader of the sports medicine team, which often includes other specialty physicians and surgeons, athletic trainers, and other allied health professionals.[1] Currently, information is lacking regarding practice patterns, career opportunities, professional affiliations, and income for primary care sports medicine physicians.

In the United States, sports medicine, as a sub-specialty, was conceived in the 1970's.[2] Post-graduate fellowship programs began in 1985, and the American Board of Medical Specialties formally recognized sports medicine as a subspecialty in 1993. There are 108 sports medicine fellowship programs accredited through the ACGME, and currently there are 124 filled positions.[3] Of these, 97 programs and 112 positions are maintained through Family Medicine.[3] Currently, there are 1,102 family physicians credentialed with the sports medicine Certificate of Added Qualification (CAQ) according to the American Board of Family Medicine.[4] 84.8% of these physicians are male and 15.2% are female.[4] The American Board of Pediatrics reports 120 physicians hold a CAQ in sports medicine, and the American Board of Internal Medicine acknowledges 172 credentialed physicians.[5,6]

Several studies have been published describing education and medical practice of sports medicine world wide.[2,7-14] However, none of the investigations have evaluated income of practicing sports medicine physicians. Moreover, only one study has focused on clinical practice patterns in the United States. In 2001, Pana et al surveyed 144 sports medicine credentialed physicians evaluating practice patterns and career opportunities relating to gender differences.[7] Comparable to the overall physician population, men were more likely to be married and have children. They also found men to be more likely to see patients at sporting events and in training rooms. However, they found no gender differences in the distribution of practice types, clinical time dedicated to sports medicine, and overall satisfaction with career opportunities.[7]

The field of primary care sports medicine has greatly evolved over the last three decades, and with the addition of over 100 fellowship graduates each year, it continues to grow annually. The purpose of this study is to investigate and to characterize the practice patterns, academic rank, and income variables that exist in order to better understand the career of a sports medicine physician in the United States. It is our intention that these data will facilitate trainees as well as established physicians to compare practice opportunities when seeking a sports medicine position.

Methods

The study was approved by the Ohio State University's Biomedical Institutional Review Board. A web-based survey was designed to examine the different attributes of a primary care sports medicine career. The survey included questions on physician demographics, practice settings, time commitments, academic affiliations, team affiliations, patient demographics, and income. The survey population was entirely family physicians, with valid e-mail accounts, holding a Certificate of Added Qualifications in Sports Medicine through the American Board of Family Medicine as of January 2006.

The web based survey was broken down into 4 sections and included a total of 43 questions. Section 1 included questions on location and sports medicine training. Section 2 contained questions on physician demographics including age, sex, and credentials. Section 3 included practice and patient demographic data including questions on income, usage of time, patient demographics, billing, and referrals. Finally, Section 4 included information related to practice management.

The entire population was contacted via e-mail by the American Board of Family Medicine**.** The e-mail contained a direct link to the on-line survey site. No personal identifiers were utilized, and all collected data were tallied as response totals. To investigate correlation between the data sets, Pearson Chi^2 and Fisher's Exact tests were utilized. Finally, a logistic regression analysis was performed to investigate features that were characteristic of high income earners. A high income earner was defined as those with a total gross annual salary of over $200,000, and $p < 0.05$ was utilized as the level of significance.

Results

The American Board of Family Medicine distributed surveys to the 862 physicians with a CAQ in sports medicine and valid e-mail addresses. 325 surveys were completed for a return rate of 38%. 240 physicians with a CAQ in sports medicine did not have valid e-mail addresses registered with the American Board of Family Medicine. Of all respondents, 212 (65%) reported completing a Primary Care Sports Medicine Fellowship. Furthermore, 276 (85%) were male and 49 (15%) were female, and 300 (92%) reported having a M.D., while 25 (8%) had a D.O.

To characterize the practice patterns of primary care sports medicine physicians, we asked the survey respondents to describe their practices. The responders were well diversified in their location, practice description, and type of practice setting (Table 1). Significant variability was seen in the day to day practices of physicians. Clinical duties represented the largest proportion of the physicians' schedules, and the majority of physicians performed routine athletic event coverage (Table 2).

Table 1 – Practice Demographics

Question:	Response:	Percent (%):
Region:	North East	19.3
	North West	7.8
	Central	29.6
	South East	19.3
	South West	24.0
Practice Setting:	Academic	41.7
	Private	58.3
Practice Description:	Family Medicine	22.1
	Sports Only	31.5
	Combined (FM & Sports)	28.5
	Other	17.8
OMT		14.9

Table 2 – Physician Schedule Data

Weekly Schedule:	Mean Half Days/Week	(Std. Dev.):
Time Off	3.28	(2.21)
Clinical Work	7.94	(3.06)
Research/Administration	1.97	(2.33)
Training Room	1.23	(1.30)
Athletic coverage:	**Percent of Physicians (%):**	
High School	57.4	
Division II &III	22.4	
Division I	30.3	
Semi-Professional	6.5	
Professional	15.6	
Event Coverage	55.6	

The collected practice management data included patient flow, billing, referrals, and support services (Table 3). Income data described income relative to gender, region of the country, academic titles, and practice description (Table 4). Considerable variability was found in the data represented by standard deviations from $12,000 to $94,000 for each descriptor. Higher income groups included: men, regions including – Central, South East, and South West, full professors, and non student health or urgent care clinical work. No statistical differences were found between multiple variables: the inclusion of osteopathic manipulative therapies in practice (Fisher's Exact = 0.671), MD vs. DO (Fisher's Exact = 0.344), or how practices were marketed to the customer (Person $Chi^2 = 0.466$).

Table 3 – Practice Management Data

Question:	**Mean**	**(Std. Dev.):**
Patients/Half Day	12.05	(3.99)
New Patient (%)	23.73	(17.08)
Billed as Consult (%)	13.67	(17.88)
Musculoskeletal Injuries (%)	53.01	(29.91)
Referred to Orthopedics (%)	9.57	(7.98)
Support Staff/Physician	2.45	(0.96)
On-Site X-ray (%)	75.85	

Table 4 – 2006 Income Data

Physician Description (N):		**Mean Income (Std. Dev.):**	
All Physicians	(325)	166,000	(66,000)
Male	(276)	172,000	(72,000)
Female	(49)	132,000	(40,000)
North East	(62)	144,000	(39,000)
North West	(25)	150,000	(54,000)
Central	(95)	174,000	(77,000)
South East	(62)	176,000	(75,000)
South West	(77)	173,000	(76,000)
Family Medicine	(66)	169,000	(57,000)
Sports Only	(130)	173,000	(73,000)
Combined (FM & Sports)	(85)	165,000	(65,000)
Urgent Care	(3)	143,000	(12,000)
Student Health	(14)	114,000	(28,000)
Assistant Professor	(114)	156,000	(53,000)
Associate Professor	(70)	172,000	(61,000)
Professor	(10)	247,000	(88,000)
Fellowship Director	(29)	167,000	(41,000)
Practice Owner	(26)	198,000	(94,000)

A logistic regression analysis was performed to investigate the characteristics of high income earners, defined as those with annual gross salaries over $200,000 US. Controlling for all other variables, four groups demonstrated significant higher odds of being high income earners. These groups included age over 40, male sex, practice owner, and seeing over 10 patients per half day (Table 5).

Table 5: Logistic Regression

Variable	Odds Ratio	P > [z]	95% Confidence Interval
Age > 40 (53.6%)	3.514	0.004	1.507 – 8.192
Practice Owner (21.5%)	3.584	0.003	1.563 – 8.219
> 10 patents/half-day (91.5%)	5.838	0.000	2.681 – 12.710
Male (84.9)%	6.641	0.015	1.437 – 30.694

Discussion

This study evaluated the practice characteristics and income figures for sports medicine specialists in the United States. We described significant variability in practice patterns, career opportunities, academic rank, and income throughout the nation. All regions of the country were well represented, and all types of practices were included. The majority of physicians described their medical practices as primarily clinical, and the majority participated in team and event coverage. No firm conclusions can be drawn from the logistic regression for high income earners because of the large confidence intervals, however, interesting trends were found. We demonstrated that salary can be related to age, gender, number of patients seen, and practice ownership. No statistical difference among salaries was found between M.D.'s and D.O.'s, OMT practice, region of the country, or how practices are marketed.

We also observed that salary increased with years in practice. Income was described to be higher for physicians holding a CAQ that did not complete a fellowship. These individuals were likely to have trained and started practicing sports medicine prior to the mid 1980's when formal fellowship programs were started. We also demonstrate the odds of being a high income earner are 3.5 times higher for doctors over 40 years of age. Older physicians are also more likely to be practice owners and full professors which are higher income groups.

Despite the large variability in incomes, the most intriguing observation was the difference in average overall income between males and females. This result was similar to the general family physician population as demonstrated by Weeks and Wallace in 2006 where they corrected for work effort, provider characteristics, and practice characteristics.[15] In the current study, the odds of a male physician being a high income earner were 6.6 times higher than that of a female physician. It has been previously demonstrated that the female sports medicine physician population is younger than the male population with 65% of females being under 40 years of age compared to 47% of males.[7] Therefore, females may generate a smaller income based on their age and years in practice rather than their work effort or gender.

There are limitations to this study. First, we were unable to survey all primary care sports medicine physicians holding a CAQ because 240 physicians did not have valid e-mail accounts registered with the American Board of Family Medicine. Furthermore, the response rate was 38% for this single survey distribution. We have no information on the non-responders or those without a valid e-mail account, and therefore, some important data may have been excluded. Second, not all physicians responded to all questions. This was particularly true for many of the practice management questions. Third, the survey method that we choose did not allow the data to be corrected for physician work effort. Work effort and number of work hours may be related to the low incomes for certain groups of physicians.

It is our intention that these data be available for future and current trainees as well as current practitioners looking for new opportunities in sports medicine. It is understood that these data will continually change as the sub-specialty of sports medicine grows in numbers and scope. The income data represents the values in the spring 2006 and will continue to increase. Future studies should further investigate the financial gap between men and women, and repeated cross-sectional data collections should be continued intermittently to follow current trends in the practice and income of primary care sports medicine physicians.

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What is already known on this topic?

Sports medicine is a new and growing subspecialty that was formally recognized in 1993. Several studies have described the education and medical practice of sports medicine world wide. None have evaluated income, and only one has focused on clinical practice patterns in the United States.

What this study adds

This is the first study to survey and disseminate data regarding physician demographics, practice patterns, professional affiliations, and their relationships to income for primary care sports medicine physicians in the United States. We demonstrate significant variability which can be correlated to age, gender, number of patients seen, and practice ownership.

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Notes