

Gender bias in sports medicine: an international assessment of sports medicine physicians' perceptions of their interactions with athletes, coaches, athletic trainers and other physicians

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ABSTRACT

Objectives To evaluate the difference between female and male sports medicine physicians regarding disrespectful attitudes and sexual harassment perceived from athletes, coaches, physicians, athletic trainers (ATs) and organisations/administrations.

Methods and study design anonymous survey was distributed to sports medicine physicians practicing in 51 countries. χ^2 analysis was used to detect differences between female and male sports medicine physicians and logistic regression analysis was used to determine the independent variables that affect disrespectful attitudes and sexual harassment from sports participants.

Results 1193 sports medicine physicians (31.9% female) participated from 51 countries. The survey revealed that female physicians, compared with male physicians, perceive significantly more disrespect or have their judgement questioned more by the following categories: male and female athletes, male and female coaches, female physicians with more years of experience, male physicians (regardless of years of experience), male and female ATs and organisation/administrations (all $p < 0.05$). The only category where the frequency of disrespect was perceived equally by male and female physicians was during their interactions with female physicians who have the same or lesser years of experience. Female sports medicine physicians noted more sexual harassment than male physicians during interactions with male athletes, coaches, ATs and physicians (all $p < 0.001$). In the logistic regression, gender was a related factor for perceiving disrespect, especially from male coaches (OR=2.01) and physicians with more years of experience (OR=2.18).

Conclusions Female sports medicine physicians around the world experience disrespectful attitudes, questioning of their judgement and are sexually harassed significantly more often than male counterparts.

WHAT ARE THE NEW FINDINGS?

- ⇒ Gender bias exists in sports medicine and female sports medicine physicians in many countries perceive disrespectful attitudes and questioning of their judgement greater than their male colleagues.
- ⇒ Female sports medicine physicians are sexually harassed by male sports participants and sports organisations significantly more than their male counterparts.
- ⇒ Future work should explore opportunities to eliminate bias in order to create an environment for all sports medicine physicians to thrive.

HOW MIGHT IT IMPACT ON CLINICAL PRACTICE IN THE FUTURE?

- ⇒ More awareness of disrespect and harassment towards female sports medicine physicians should support the creation of mechanisms such as education and reporting to change the environment at the organisational level.
- ⇒ Importantly, male sports medicine physicians can use this information to advocate on the behalf of women to promote gender equity, with the goal of eliminating discrimination and bias in the workplace.

INTRODUCTION

In 1979, the United Nations adopted the 'Convention on the Elimination of all Forms of Discrimination against Women'. This landmark document sought to curtail discriminatory practices against women in the rapidly growing female workforce around the world.¹ The convention has obvious applications to the growing number of female medical students and physicians across the globe.² However, 'gender equality,' defined by the World

Health Organization in 2002 as the 'absence of discrimination on the basis of a person's sex in opportunities, the allocation of resources and benefits, or access to services,' remains elusive in many, if not most, countries. For example, entrance exam scores at some medical schools in Japan were manipulated so that men are more easily admitted.^{3,4} In the USA, male physicians' salaries are higher than women's, and women in academic medicine are less likely to be promoted or addressed by their professional titles.⁵⁻⁸ Although the number of female physicians is on the rise, a study in the USA reported that only 41% of female sports medicine physicians reported they have achieved their career goals and only 60.5% agreed they were compensated at a rate commensurate with their peers.⁹ Most importantly, female physicians still face a considerable degree of discrimination in comparison to their male counterparts.¹⁰



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Sports medicine operates in a unique environment. Physicians are required to communicate not only with athletes, but also with coaches, athletic trainers (ATs) and other professionals that surround the athletes. Although the athletic world is populated by athletes representing both genders, sport is traditionally male dominant. For example, male sports tend to be better funded and have greater resources at all levels and compensated at a higher rate than female sports, highlighted in 2019 by USA Women's soccer gender discrimination lawsuit.¹¹ In addition, the Olympics only added women's triple jump, hammer throw, pole vault and steeplechase in the past 25 years, while the male versions of these sports have been contested prior to that.¹² This male dominance in sports carries over into the field of sports medicine and in fact, there are far fewer female than male sports medicine physicians serving as head team physicians in colleges in the United States National Collegiate Athletic Association.¹³

The purpose of this study is to evaluate discriminatory attitudes and sexual harassment perceived by female sports medicine physicians as compared with their male counterparts in their interactions with athletes, coaches, other physicians and ATs in multiple countries and investigate the causative factors that are related to disrespectful attitudes and sexual harassment. Although gender influence in sport medicine careers have been reported, there has not been a study on gender bias in sports medicine evaluating the effect of primary specialty and country of origin with international participants nor in specialties other than family medicine.¹⁴

METHODS

Participants

A cross-sectional study was performed by means of an online survey that was disseminated to sports medicine physicians practicing in 51 different countries via sports medicine organisations and private social media groups. For those countries that do not have their own sports medicine organisations, the link of the survey was distributed via sports medicine physicians working at a national sport federation. Survey responses from non-physician personnel employed by sports medicine organisations were disregarded. We also excluded all responses that did not specify a physician's gender. As long as the above criteria was met, participants that skipped questions were still included in the overall analysis.

Survey

In this anonymous survey, physicians were asked for demographic information of the subjects since previous studies have reported that personal background of an individual has an effect on his or her mindset regarding gender bias and the questions: 'how often have you felt disrespected or had your judgement questioned by the following?' and 'how often have you been sexually harassed by the following?' by different groups they encounter during the course of their job. The responses were 'every day, few times a week, few times a month, few times a year and never'.

The groups were as follows.

- ▶ Male and female athletes.
- ▶ Male and female coaches.
- ▶ Male and female physicians who had been in practice longer than the participant.
- ▶ Male and female physicians who had been in practice the same or less time than the participant.
- ▶ Male and female ATs.
- ▶ Organisation/administration personnel such as team managers or athletic directors.

Participants answered the frequency of experiencing disrespect or having their judgement questioned and having been sexually harassed. Choosing any option other than 'never' was considered a positive response. The survey was distributed from August to December 2020 and was translated into Arabic, Chinese, Dutch, English, French, German, Japanese, Korean, Norwegian, Spanish and Thai.

Statistical analysis

All data were analysed using the Stata V.16.1 (Stata Corporation, Texas, USA). Fisher's exact tests were used to detect differences between female and male sports medicine physicians and continuous data were compared using the Welch's t-test. A probability (p) value of <0.05 was considered significant. To investigate the related factors of receiving disrespectful attitudes and sexual harassment, binary logistic regression was used to determine the related variables. Age, gender, region where medical practice was conducted and residency training were included in the model. Male was set as the base level for gender and Europe as the base level for region since the gender gap there is the lowest according to the World Economic Forum, which not only focuses on income but also on political empowerment, educational attainment, health and survival, etc.¹⁵ Family medicine was the base level for residency training, since we speculated that the majority would be sports medicine physicians trained in family medicine. We also performed logistic regression analysis on both genders separately. ORs and associated 95% CIs were calculated to determine the strength of the model. In addition, since the responses were on a frequency scale, ordinal regression analysis was performed and the results are listed in the online supplemental material.

Patient and public involvement

The survey was reviewed by select sports medicine physicians prior to finalising the questions to assure clarity of content.

RESULTS

A total of 1250 responses were received from 51 countries, and among them, we excluded those that did not specify their gender (N=11) and those determined not to be licensed medical doctors (N=46). Thus, a total of 1193 sports medicine physicians were qualified for analysis. The percentages of women and men were 31.9% (380/1193) and 68.1% (813/1193), respectively, and the average age of female physicians (40.1±9.3) was lower than that of male counterparts (48.3±11.5) significantly (p<0.01). The majority of the participants were from North America (36.0%) and Asia (33.8%), and participant characteristics are listed in table 1. For the primary residency training, 43.7% of female sports medicine physicians trained in family medicine and 47.7% of male sports medicine physicians trained in orthopaedics.

According to our findings, female sports medicine physicians experience disrespect or have had their judgement questioned more than their male counterparts when encountering male athletes, male coaches, male physicians regardless of years of experience, male ATs, sports organisation/administration (all p<0.001), female athletes (p=0.015), female coaches (p=0.018), female physicians with more years of experience (p<0.001) and female ATs (p=0.006). Also, female physicians report being sexually harassed significantly more than their male counterparts by male sports participants and sports organisation/administration (all p<0.001). The OR was high, particularly in male physicians with more years of practice. Results of the percentage of both male and female sports medicine physicians

Table 1 Characteristics of the participants

	Female N (%)	Male N (%)	P value
Practice region			<0.001
Africa	17 (4.5)	18 (2.2)	
Asia	48 (12.6)	355 (43.7)	
Europe	91 (24.0)	186 (22.9)	
North America	215 (56.6)	214 (26.3)	
Oceania	3 (0.8)	4 (0.5)	
South America	6 (1.6)	33 (4.1)	
Multiple	0 (0.0)	3 (0.4)	
Total	380 (100)	813 (100)	
Primary residency training			<0.001
Emergency medicine	17 (4.5)	21 (2.6)	
Family medicine	166 (43.7)	199 (24.5)	
Internal medicine	17 (4.5)	43 (5.3)	
Orthopaedics	55 (14.5)	388 (47.7)	
Paediatrics	28 (7.4)	15 (1.9)	
PM&R	59 (15.5)	68 (8.4)	
Sports medicine	28 (7.4)	41 (5.0)	
Other	10 (2.6)	38 (3.2)	
Age (years)	40.1±9.3	48.3±11.5	<0.001

Bold values denote statistical significance at the $p < 0.05$ level.
PM&R, physical medicine and rehabilitation.

having perceived disrespect or their judgement questioned and sexually harassed are listed in [table 2](#). Details of the responses on both male and female sports medicine physicians are listed in [figure 1](#).

Results of the logistic regression analysis on perceiving disrespectful attitudes or having their judgement questioned are shown in [table 3](#) (both genders combined) and [table 4](#) (both genders separately). Additionally, the results of the logistic regression analysis on having been sexually harassed are listed in [table 5](#) (both genders combined) and [table 6](#) (both genders separately).

Being a female sports medicine physician was a related factor for experiencing disrespect or having their judgments questioned by male coaches (OR=2.01, 95% CI (1.48 to 2.74), $p < 0.001$), male physicians in practice longer than themselves (OR=2.18, 95% CI (1.58 to 3.01), $p < 0.001$), male physicians in practice the same or less time than themselves (OR=2.10, 95% CI (1.58 to 2.80), $p < 0.001$), male ATs (OR=1.55, 95% CI (1.16 to 2.07), $p = 0.003$), and organisations/administrations (OR=1.41, 95% CI (1.06 to 1.88), $p = 0.019$).

Age was a related factor for receiving disrespectful attitudes from both male and female physicians in practice longer and when the analysis was done separately, the results showed that younger female sports medicine physicians were more likely to receive disrespectful attitudes from female physicians in practice longer (OR=0.97, 95% CI (0.95 to 1.00), $p = 0.043$). Moreover, male sports medicine physicians were more likely to receive disrespectful attitudes from both male (OR=0.96, 95% CI (0.95 to 0.97), $p < 0.001$) and female (OR=0.96, 95% CI (0.94 to 0.97), $p < 0.001$) physicians in practice longer.

Sports medicine physicians in Asia perceive less disrespect or had their judgments questioned less by male athletes (OR=0.56, 95% CI (0.38 to 0.81), $p = 0.002$), female athletes (OR=0.57, 95% CI (0.39 to 0.85), $p = 0.006$) and male coaches (OR=0.62, 95% CI (0.42 to 0.90), $p = 0.013$) compared with European

Table 2 Percentage of sports medicine physicians who felt disrespected or had their judgement questioned

Have felt disrespected or their judgement questioned by the following (total responses)	Female N (%), 95% CI)	Male N (%), 95% CI)	P value
Male athletes (1153)	233 (63.8, 58.7 to 68.8)	377 (47.8, 44.3 to 51.4)	<0.001
Female athletes (1143)	176 (48.2, 43.0 to 53.5)	315 (40.5, 37.0 to 44.0)	0.015
Male coaches (1137)	259 (72.4, 67.4 to 76.9)	374 (48.0, 44.5 to 51.6)	<0.001
Female coaches (1134)	154 (42.8, 37.6 to 48.1)	273 (35.3, 31.9 to 38.8)	0.018
Male physicians in practice longer (1112)	274 (76.8, 72.0 to 81.0)	388 (51.4, 47.8 to 55.0)	<0.001
Male physicians in practice the same or less (1144)	218 (60.1, 54.8 to 65.1)	305 (39.1, 35.6 to 42.6)	<0.001
Female physicians in practice longer (1137)	175 (48.3, 43.1 to 53.6)	266 (34.3, 31.0 to 37.8)	<0.001
Female physicians in practice the same or less (1132)	102 (28.3, 23.7 to 33.3)	219 (28.4, 25.2 to 31.7)	1.000
Male athletic trainer (1136)	185 (51.4, 46.1 to 56.7)	271 (34.9, 31.6 to 38.4)	<0.001
Female athletic trainer (1128)	126 (35.3, 30.1 to 40.5)	209 (27.1, 24.0 to 30.4)	0.006
Organisation/administration (1137)	190 (53.1, 47.8 to 58.3)	323 (41.5, 38.0 to 45.0)	<0.001
Sexually harassed by the following (total responses)	Female N (%), 95% CI)	Male N (%), 95% CI)	P value
Male athletes (1151)	67 (18.4, 14.6 to 22.8)	12 (1.5, 0.8 to 2.6)	<0.001
Female athletes (1152)	8 (2.2, 1.0 to 4.3)	33 (4.2, 2.9 to 5.8)	0.122
Male coaches (1148)	49 (13.6, 10.2 to 17.5)	10 (1.3, 0.6 to 2.3)	<0.001
Female coaches (1145)	3 (0.8, 0.2 to 2.4)	19 (2.4, 1.5 to 3.8)	0.102
Male physicians in practice longer (1150)	108 (29.9, 25.2 to 34.9)	15 (1.9, 1.1 to 3.1)	<0.001
Male physicians in practice the same or less (1150)	54 (14.9, 11.4 to 19.0)	12 (1.5, 0.8 to 2.6)	<0.001
Female physicians in practice longer (1149)	6 (1.7, 0.6 to 3.6)	16 (2.0, 1.2 to 3.3)	0.818
Female physicians in practice the same or less (1147)	5 (1.4, 0.5 to 3.2)	22 (2.8, 1.8 to 4.2)	0.207
Male athletic trainer (1144)	29 (8.1, 5.5 to 11.5)	13 (1.7, 0.9 to 2.8)	<0.001
Female athletic trainer (1143)	3 (0.8, 0.2 to 2.4)	18 (2.3, 1.4 to 3.6)	0.100
Organisation/administration (1146)	42 (11.6, 8.5 to 15.4)	13 (1.7, 0.9 to 2.8)	<0.001

Bold values denote statistical significance at the $p < 0.05$ level.



Figure 1 (A) Details of the responses of 'how often have you felt disrespected or had your judgement questioned by the following?' on both male and female sports medicine physicians. (B) Details of the responses of 'how often have you been sexually harassed by the following' on both male and female sports medicine physicians.

physicians. As for male sports medicine physicians, those based in Asia experienced less disrespectful attitudes from male athletes (OR=0.52, 95% CI (0.34 to 0.81), $p=0.003$), female athletes (OR=0.53, 95% CI (0.34 to 0.84), $p=0.007$), male coaches (OR=0.58, 95% CI (0.37 to 0.89), $p=0.014$), female physicians in practice longer (OR=0.61, 95% CI (0.38 to 0.98), $p=0.040$), and male ATs (OR=0.60, 95% CI (0.38 to 0.94), $p=0.026$) compared with European sports medicine physicians. Sports medicine physicians based in Africa experienced more disrespected or had their judgments questioned by male coaches (OR=2.42, 95% CI (1.01 to 5.79), $p=0.048$), female coaches (OR=6.24, 95% CI (2.63 to 14.84), $p<0.001$), male physicians in practice longer than themselves (OR=3.96, 95% CI (1.51 to 10.39), $p=0.005$), female physicians in practice longer than themselves (OR=2.64, 95% CI (1.19 to 5.85), $p=0.017$), female physicians in practice the same or less time than themselves (OR=2.59, 95% CI (1.20 to 5.60), $p=0.015$), male ATs (OR=3.31, 95% CI (1.48 to 7.41), $p=0.004$), female ATs

(OR=3.46, 95% CI (1.59 to 7.51), $p=0.002$) and organisations/administrations (OR=2.34, 95% CI (1.08 to 5.10), $p=0.032$) compared with European physicians. This trend was higher when the analysis was performed only on female sports medicine physicians. Female North American physicians frequently perceived disrespect or had their judgments questioned by male athletes (OR=2.76, 95% CI (1.40 to 5.46), $p=0.004$), male physicians in practice longer than themselves (OR=4.55, 95% CI (2.02 to 10.29), $p<0.001$), male ATs (OR=2.18, 95% CI (1.11 to 4.30), $p=0.024$) and female ATs (OR=2.44, 95% CI (1.13 to 5.27), $p=0.023$), in comparison to European physicians.

In regard to residency training, compared with those with family medicine training, sports medicine physicians trained in orthopaedics have perceived less disrespect or have had their judgments questioned less by female athletes (OR=0.58, 95% CI (0.38 to 0.90), $p=0.014$) and female coaches (OR=0.47, 95% CI (0.30, 0.74), $p=0.001$). However, while as a whole orthopaedic surgeons experienced less disrespectful attitudes from certain

Table 3 Results of logistic regression analysis on having felt disrespected or their judgement questioned (both genders combined)

	OR	95% CI	P value
Male athletes			
Region (Ref: Europe)			
Asia	0.56	0.38 to 0.81	0.002
North America	1.67	1.14 to 2.43	0.008
Residency training (Ref: family medicine)			
Internal medicine	0.53	0.29 to 0.96	0.037
Emergency medicine	0.45	0.22 to 0.90	0.024
Female athletes			
Region (Ref: Europe)			
Asia	0.57	0.39 to 0.85	0.006
North America	1.48	1.02 to 2.15	0.039
Residency training (Ref: family medicine)			
Orthopaedics	0.58	0.38 to 0.90	0.014
Male coaches			
Gender (Ref: male)			
Female	2.01	1.48 to 2.74	<0.001
Region (Ref: Europe)			
Africa	2.42	1.01 to 5.79	0.048
Asia	0.62	0.42 to 0.90	0.013
Residency training (Ref: family medicine)			
PM&R	0.52	0.32 to 0.83	0.007
Emergency medicine	0.29	0.14 to 0.60	0.001
Female coaches			
Region (Ref: Europe)			
Africa	6.24	2.63 to 14.84	<0.001
North America	1.61	1.09 to 2.36	0.017
Residency training (Ref: family medicine)			
Orthopaedics	0.47	0.30 to 0.74	0.001
Emergency medicine	0.36	0.16 to 0.82	0.014
Male physicians in practice longer			
Gender (Ref: male)			
Female	2.18	1.58 to 3.01	<0.001
Age	0.97	0.95 to 0.98	<0.001
Region (Ref: Europe)			
Africa	3.96	1.51 to 10.39	0.005
North America	2.29	1.48 to 3.52	<0.001
Oceania	0.06	0.01 to 0.59	0.016
Residency training (Ref: family medicine)			
Sports medicine	2.15	1.04 to 4.41	0.038
Male physicians in practice the same or less			
Gender (Ref: male)			
Female	2.10	1.58 to 2.80	<0.001
Female physicians in practice longer			
Age	0.96	(0.95 to 0.97)	<0.001
Region (Ref: Europe)			
Africa	2.64	1.19 to 5.85	0.017
Female physicians in practice the same or less			
Region (Ref: Europe)			
Africa	2.59	1.20 to 5.60	0.015
Male athletic trainers			
Gender (Ref: male)			
Female	1.55	1.16 to 2.07	0.003
Region (Ref: Europe)			
Africa	3.31	1.48 to 7.41	0.004
Female athletic trainers			
Region (Ref: Europe)			

Continued

Table 3 Continued

	OR	95% CI	P value
Africa	3.46	1.59 to 7.51	0.002
South America	2.17	1.02 to 4.60	0.044
Residency training (Ref: family medicine)			
Internal medicine	0.45	0.22 to 0.94	0.033
Organisations/administrations			
Gender (Ref: male)			
Female	1.41	1.06 to 1.88	0.019
Region (Ref: Europe)			
Africa	2.34	1.08 to 5.10	0.032
Residency training (Ref: family medicine)			
PM&R	0.56	0.35 to 0.88	0.012
PM&R, physical medicine and rehabilitation.			

categories, females in orthopaedics experienced disrespectful attitudes from male physicians in practice longer at a higher rate than those in family medicine (OR=4.36, 95% CI (1.51 to 12.58), $p=0.006$). Sports medicine physicians trained in emergency medicine also experienced less disrespect or have had their judgments questioned less by male athletes (OR=0.45, 95% CI (0.22 to 0.90), $p=0.024$) male coaches (OR=0.29, 95% CI (0.14 to 0.60), $p=0.001$) and female coaches (OR=0.36, 95% CI (0.16 to 0.82), $p=0.014$) compared with family medicine trained sports medicine physicians.

Results of the logistic regression analysis on sexual harassment revealed that, compared with male sports medicine physicians, female counterparts have been sexually harassed more by male athletes (OR=12.42, 95% CI (6.14 to 25.11), $p<0.001$), male coaches (OR=9.95, 95% CI (4.58 to 21.62), $p<0.001$), male physicians in practice longer (OR=27.47, 95% CI (14.33 to 52.65), $p<0.001$), male physicians in practice same or less time (OR=13.77, 95% CI (6.54 to 28.99), $p<0.001$), male ATs (OR=5.40, 95% CI (2.46 to 11.85), $p<0.001$) and organisations/administrations (OR=7.31, 95% CI (3.50 to 15.27), $p<0.001$). Younger age was also a related factor of being sexually harassed by male athletes (OR=0.96, 95% CI (0.93 to 0.99), $p=0.021$) and female coaches (OR=0.95, 95% CI (0.90 to 0.99), $p=0.027$). Also, younger male sports medicine physicians were more likely to be sexually harassed than older male sports medicine physicians.

DISCUSSION

This is the first study to investigate the perception of disrespectful attitudes and being sexually harassed by sports participants in male and female sports medicine physicians in multiple countries. Our results indicated that, female physicians are frequently on the receiving end of disrespectful attitudes and having their judgement questioned more significantly than their male counterparts, especially by male sports participants, which was consistent with a previous study on academic medicine.⁶ Also, χ^2 analysis revealed that female physicians have been sexually harassed significantly more than male counterparts especially from male physicians with more experience. Moreover, when adjusted by logistic regression, gender of the sports medicine physician was a significant factor for having judgement questioned by male athletes, male coaches, male physicians and male ATs.

Logistic regression analysis showed that for interactions with certain members of the sports medicine realm, the gender of the sports medicine physician did not influence them potentially perceiving disrespect. This was during interactions with female

Table 4 Results of logistic regression analysis on having felt disrespected or their judgement questioned (both genders separately)

Female sports medicine physicians	OR	95% CI	P value
Male athletes			
Region (Ref: Europe)			
Africa	4.21	1.06 to 16.63	0.040
North America	2.76	1.40 to 5.46	0.004
Female athletes			
NA	NA	NA	NA
Male coaches			
Residency training (Ref: family medicine)			
PM & R	0.38	0.18 to 0.80	0.011
Female coaches			
Region (Ref: Europe)			
Africa	7.48	1.86 to 30.04	0.005
Male physicians in practice longer			
Region (Ref: Europe)			
Africa	6.92	1.34 to 35.74	0.021
North America	4.55	2.02 to 10.29	<0.001
Residency training (Ref: family medicine)			
Orthopaedics	4.36	1.51 to 12.58	0.006
Male physicians in practice the same or less			
Residency training (Ref: family medicine)			
PM & R	0.47	0.24 to 0.92	0.027
Female physicians in practice longer			
Age	0.97	0.95 to 1.00	0.043
Region (Ref: Europe)			
Africa	3.35	1.01 to 11.13	0.048
Female physicians in practice the same or less			
Region (Ref: Europe)			
Africa	3.65	1.07 to 12.41	0.039
Male athletic trainers			
Region (Ref: Europe)			
Africa	12.11	2.48 to 59.25	0.002
North America	2.18	1.11 to 4.30	0.024
Female athletic trainers			
Region (Ref: Europe)			
Africa	7.16	2.02 to 25.47	0.002
North America	2.44	1.13 to 5.27	0.023
Organisations/administrations			
Age	1.03	1.00 to 1.05	0.046
Residency training (Ref: family medicine)			
PM&R	0.47	0.24 to 0.94	0.033
Male sports medicine physicians			
Male athletes			
Age	0.99	0.97 to 1.00	0.038
Region (Ref: Europe)			
Asia	0.52	0.34 to 0.81	0.003
Residency training (Ref: family medicine)			
Emergency medicine	0.27	0.10 to 0.76	0.013
Female athletes			
Region (Ref: Europe)			
Asia	0.53	0.34 to 0.84	0.007
Residency training (Ref: family medicine)			
Orthopaedics	0.51	0.30 to 0.86	0.011
Emergency medicine	0.23	0.08 to 0.67	0.007
Male coaches			
Region (Ref: Europe)			
Asia	0.58	0.37 to 0.89	0.014
Residency training (Ref: family medicine)			

Continued

Table 4 Continued

Female sports medicine physicians	OR	95% CI	P value
Emergency medicine	0.22	0.07 to 0.64	0.006
Sports medicine	3.24	1.26 to 8.34	0.015
Female coaches			
Region (Ref: Europe)			
Africa	5.64	1.76 to 18.05	0.004
North America	1.78	1.11 to 2.88	0.018
Residency training (Ref: family medicine)			
Orthopaedics	0.48	0.28 to 0.82	0.007
Emergency medicine	0.23	0.07 to 0.74	0.014
Male physicians in practice longer			
Age	0.96	0.95 to 0.97	<0.001
Region (Ref: Europe)			
North America	1.82	1.09 to 3.06	0.023
South America	2.76	1.11 to 6.85	0.029
Residency training (Ref: family medicine)			
Sports medicine	2.98	1.18 to 7.51	0.021
Male physicians in practice the same or less			
Region (Ref: Europe)			
Africa	3.12	1.07 to 9.07	0.037
Female physicians in practice longer			
Age	0.96	0.94 to 0.97	<0.001
Region (Ref: Europe)			
Asia	0.61	0.38 to 0.98	0.040
Female physicians in practice the same or less			
NA	NA	NA	NA
Male athletic trainers			
Region (Ref: Europe)			
Asia	0.60	0.38 to 0.94	0.026
Residency training (Ref: family medicine)			
Emergency medicine	0.24	0.07 to 0.88	0.031
Sports medicine	2.55	1.08 to 6.00	0.032
Female athletic trainers			
Residency training (Ref: family medicine)			
Emergency medicine	0.19	0.04 to 0.86	0.031
Organisations/administrations			
Residency training (Ref: family medicine)			
	2.88	1.20 to 6.91	0.018
Sports medicine			

PM&R, physical medicine and rehabilitation.

athletes, female physicians and female coaches, and this could be explained again by females in general having less gender stereotypes and studies have shown males in general tend not to recognise gender stereotypes.¹⁶ One positive finding was that male and female physicians did not differ in perceiving disrespect from male athletes. While the power dynamic between physicians and athletes could be playing a role, it could also be possible that gender bias is less common in younger individuals due to improved attitudes on gender in society over time as athletes tend to be younger than coaches and other physicians.

A study in Switzerland pointed out that implementing gender sensitive teaching during medical school training might limit gender bias¹⁷; and this effect was confirmed in a study on faculty attitudes as well.¹⁸ If this is true, there is a possibility to reduce gender bias through formal education, which would need to involve multiple groups within sports medicine rather than only targeting the physicians. As per region, in general, sports medicine physicians practicing in North America and Africa perceived

Table 5 Results of logistic regression on having sexually harassed (both genders combined)

Male athletes	OR	95% CI	P value
Gender (Ref: male)			
Female	12.42	6.14 to 25.11	<0.001
Age	0.96	0.93 to 0.99	0.021
Region (Ref: Europe)			
Africa	7.65	2.42 to 24.19	0.001
Asia	2.76	1.01 to 7.56	0.048
Oceania	127.40	7.05 to 2301.59	0.001
South America	7.60	1.29 to 44.79	0.025
Female athletes			
Gender (Ref: male)			
Female	0.41	0.17 to 0.97	0.043
Region (Ref: Europe)			
Africa	4.18	1.30 to 13.46	0.016
Oceania	80.84	6.10 to 1072.17	0.001
South America	4.75	1.25 to 18.02	0.022
Male coaches			
Gender (Ref: male)			
Female	9.95	4.58 to 21.62	<0.001
Region (Ref: Europe)			
Africa	7.89	2.34 to 26.66	0.001
Oceania	53.60	4.65 to 617.19	0.001
South America	6.47	1.07 to 39.16	0.042
Female coaches			
Age	0.95	0.90 to 0.99	0.027
Male physicians in practice longer			
Gender (Ref: male)			
Female	27.47	14.33 to 52.65	<0.001
Residency training (Ref: family medicine)			
Pediatrics	0.13	0.03 to 0.55	0.006
Male physicians in practice the same or less			
Gender (Ref: male)			
Female	13.77	6.54 to 28.99	<0.001
Region (Ref: Europe)			
South America	4.68	1.08 to 20.16	0.039
Female physicians in practice longer			
NA	NA	NA	NA
Female physicians in practice the same or less			
Region (Ref: Europe)			
Africa	6.40	1.22 to 33.52	0.028
Male athletic trainers			
Gender (Ref: male)			
Female	5.40	2.46 to 11.85	<0.001
Female athletic trainers			
NA	NA	NA	NA
Organisations/administrations			
Gender (Ref: male)			
Female	7.31	3.50 to 15.27	<0.001
Region (Ref: Europe)			
Africa	11.51	3.27 to 40.53	<0.001
Oceania	35.78	4.08 to 313.38	0.001
Residency training (Ref: family medicine)			
Orthopaedics	0.25	0.07 to 0.83	0.023

Table 6 Results of logistic regression on having sexually harassed (both genders separately)

Female sports medicine physicians	OR	95% CI	P value
Male athletes			
Region (Ref: Europe)			
Africa	7.54	2.12 to 26.78	0.002
Female athletes			
NA	NA	NA	NA
Male coaches			
Region (Ref: Europe)			
Africa	6.55	1.74 to 24.67	0.005
Female coaches			
NA	NA	NA	NA
Male physicians in practice longer			
Residency training (Ref: family medicine)			
Orthopaedics	2.70	1.10 to 6.63	0.030
Pediatrics	0.12	0.03 to 0.54	0.006
Male physicians in practice the same or less			
NA	NA	NA	NA
Female physicians in practice longer			
Age	1.11	1.01 to 1.21	0.024
Female physicians in practice the same or less			
NA	NA	NA	NA
Male athletic trainers			
NA	NA	NA	NA
Female athletic trainers			
NA	NA	NA	NA
Organisations/administrations			
Age	1.05	1.01 to 1.09	0.008
Region (Ref: Europe)			
Africa	8.94	1.83 to 43.73	0.007
Male sports medicine physicians			
Male athletes			
Age	0.92	0.85 to 0.99	0.023
Residency training (Ref: family medicine)			
Orthopaedics	0.04	0.00 to 0.43	0.007
Female athletes			
Region (Ref: Europe)			
Africa	5.73	1.43 to 23.03	0.014
South America	6.13	1.46 to 25.79	0.013
Male coaches			
Age	0.88	0.81 to 0.96	0.006
Residency training (Ref: family medicine)			
Orthopaedics	0.04	0.00 to 0.65	0.023
Female coaches			
Age	0.94	0.89 to 0.99	0.019
Region (Ref: Europe)			
Africa	7.13	1.07 to 47.65	0.043
Male physicians in practice longer			
Age	0.93	0.87 to 0.99	0.023
Male physicians in practice the same or less			
Region (Ref: Europe)			
North America	0.04	0.00 to 0.73	0.030
Residency training (Ref: family medicine)			
Orthopaedics	0.09	0.01 to 0.83	0.034
Female physicians in practice longer			
Region (Ref: Europe)			
Africa	10.12	1.03 to 99.56	0.047
Female physicians in practice the same or less			
Region (Ref: Europe)			

Continued

Table 6 Continued

Female sports medicine physicians	OR	95% CI	P value
Africa	10.24	1.55 to 67.76	0.016
Male athletic trainers			
Age	0.92	0.86 to 0.99	0.019
Region (Ref: Europe)			
Asia	17.81	1.44 to 220.33	0.025
South America	71.71	3.62 to 1419.55	0.005
Residency training (Ref: family medicine)			
Orthopaedics	0.10	0.01 to 0.99	0.049
Female athletic trainers			
Age	0.94	0.89 to 0.99	0.022
Organisations/administrations			
Age	0.93	0.87 to 1.00	0.038
Region (Ref: Europe)			
Africa	19.92	1.67 to 237.06	0.018
Asia	11.27	1.01 to 126.05	0.049

disrespectful attitudes and have had their judgments questioned more than European physicians, but physicians in Asia experienced less. It is difficult to say whether these differences reflect true regional differences or if physicians in North America and Africa have a keener awareness of gender bias and pay more attention to how they are treated. Compared with other regions, studies on gender bias in Asia are limited and physicians from this region may have a higher tolerance for or lower awareness of gender bias creating underreporting.^{19–25} We also need to take into account that the majority of the Asian doctors are from Japan, which has a high gender gap.¹⁵ As to Africa, since the majority of the Africans were from South Africa, which is a country with a low gender gap according to world economic information, it is speculated that sports medicine physicians in Africa who answered the survey were sensitive to the topic.¹⁵ However, since the respondents in Oceania and Africa were small in this research, further investigation is required.

Unfortunately, the field of medicine is far from gender diverse according to both our results and previous studies.^{26,27} Gender diversity is important not only to reduce disparities but also for a better medical outcome and in fact, Greenwood *et al* reported that patient–physician gender concordance was a related factor for mortality rate and female patients treated by male physicians had a higher mortality rate.^{28,29} Needless to say, a diverse environment is important for equity and sports medicine societies should not only focus on increasing the number of female sports medicine physicians but also to increase awareness of the implicit gender bias in sports medicine and take deliberate actions such as changing policies and systems to combat discrimination and harassment.³⁰ Since educational intervention was effective to reduce gender bias in academic medicine, future education could include how women perceive disrespectful attitudes or have their judgments questioned and education on sexual harassment to bring awareness could be the first step.¹⁸ Moreover, according to this study, it has been demonstrated that female sports medicine physicians experience disrespectful attitudes, having their judgements questioned and sexually harassed more than their male counterparts and thus not being treated the same way as male counterparts. Both male and female sports medicine physicians should be aware of this fact.

Gender was a related factor for getting sexually harassed and female sports medicine physicians were being sexually harassed by all categories of male sports participants evaluated in our study (coaches, athletes, physicians, ATs) as well as organisations/

administrations more than male sports medicine physicians. It should be noted that female sports medicine physicians reported that they are most frequently sexually harassed by male physicians in practice longer than them, and since it has been demonstrated that female physicians during residency and fellowship were harassed more than those already in practice meaning that younger women tend to be the victims which indirectly matches our results.³¹ Also, since women and men have been reported to have different perception of gender bias, there is a possibility that female respondents were more sensitive to the topic.^{16,32} Furthermore, since experiencing disrespectful attitudes from female sports medicine physicians were significantly different by region, it is conjectured that cultural background has an influence.³²

There are several limitations to this study. First of all, the survey asked ‘what is your gender’ with options listed as ‘male’ and ‘female’. These are actually categories of sex rather than gender but we referred to it as gender in the paper since the question stem asked for gender. It should also be recognised that gender is not a binary category and future studies should consider capturing physicians who identify as a category other than ‘man’ or ‘woman’.^{33,34} Residency training differs by region and the percentage between surgical versus non-surgical sports medicine physicians in each country should be considered since gender bias in the field of surgery has been reported anecdotally to be an issue for quite some time.³⁵ Furthermore, the physicians in Oceania had low reach, which made the 95% CI values extremely large indicating a sparse data bias, leading to some regions being heavily represented by a single country. Since not all the questions were required to be answered, there could have been selection bias due to non-responses, and the sample may not be representative of the study population. In addition, since we were not able to reach out to all sports medicine organisations including countries that do not have one, measurement bias exists, and the survey-based design is also susceptible to recall bias. Also, even though the survey is anonymous, under-reporting of sexual harassment and abuse is possible due to fear of stigma.^{36–38}

Finally, since the majority of responses were from white sports medicine physicians, we consider that we have obtained a limited scope on gender bias attitudes from non-white sports medicine physicians and future studies should seek wider diversity in sports medicine physician participation.

Despite the increasing number of female physicians, our study indicated that female sports medicine physicians perceive that they are still not being treated the same way as male counterparts by sports participants. If female sports medicine physicians continue to feel disrespected and have their judgement questioned more than their male counterparts, this could lead to more stress, lower satisfaction in female sports medicine physicians’ work and burnout.

Sports Medicine societies should have a diversity and inclusion policy, as well as robust bullying, harassment and discrimination policies and reporting mechanisms. Annual data should also be collected on these across sport to ensure organisations move toward gender equality and safer work environments for physicians of all genders, races, ethnicities and sexual orientations.

CONCLUSIONS

Gender bias does exist in the field of sports medicine and female sports medicine physicians around the world perceive significantly more disrespectful attitudes, have their judgement questioned and are sexually harassed more than their male counterparts. Future work should explore opportunities to eliminate gender bias to make it a better, safer, more inclusive and fairer world for all athletes, teams, organisations and their sports physicians. Change will take time, and at times be

difficult, but must be championed and lead from the top by all sports medicine physicians in leadership positions across sporting organisations.

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Table 1. Results of ordinal logistic regression analysis on disrespectful attitudes (both genders combined)

Male athletes		Odds Ratio	95% CI	p value
Gender				
	Male	Base		
	Female	1.27	[0.97,1.66]	0.077
Age		0.99	[0.98,0.99]	0.044
Region				
	Europe	Base		
	Africa	1.81	[0.88,3.70]	0.106
	Asia	0.60	[0.41,0.86]	0.005
	North America	1.51	[1.07,2.13]	0.020
	Oceania	1.26	[0.33,4.83]	0.741
	South America	1.18	[0.59,2.37]	0.636
	Multiple	0.38	[0.04,4.06]	0.422
Residency training				
	Family Medicine	Base		
	Orthopedics	0.73	[0.49,1.09]	0.123
	Internal Medicine	0.57	[0.32,1.02]	0.059
	PM&R	0.78	[0.51,1.19]	0.244
	Pediatrics	0.89	[0.48,1.67]	0.723
	Emergency Medicine	0.49	[0.25,0.97]	0.039
	Sports Medicine	1.21	[0.68,2.15]	0.524
	Other	0.87	[0.45,1.69]	0.680
Female athletes		Odds Ratio	95% CI	p value
Gender				
	Male	Base		
	Female	0.81	[0.61,1.06]	0.127
Age		0.99	[0.98,1.00]	0.173
Region				
	Europe	Base		
	Africa	2.25	[1.09,4.65]	0.029
	Asia	0.60	[0.40,0.88]	0.009
	North America	1.40	[0.98,1.99]	0.061
	Oceania	1.09	[0.26,4.63]	0.907
	South America	0.89	[0.42,1.88]	0.767
	Multiple	0.53	[0.05,5.72]	0.601
Residency training				
	Family Medicine	Base		
	Orthopedics	0.60	[0.39,0.90]	0.014
	Internal Medicine	0.99	[0.56,1.74]	0.977
	PM&R	0.81	[0.53,1.25]	0.345
	Pediatrics	1.07	[0.57,1.99]	0.842
	Emergency Medicine	0.63	[0.32,1.23]	0.178
	Sports Medicine	1.03	[0.57,1.86]	0.934
	Other	0.64	[0.31,1.34]	0.237
Male coaches		Odds Ratio	95% CI	p value
Gender				
	Male	Base		

	Female	1.96	[1.49,2.57]	< 0.001
Age		0.99	[0.98,1.01]	0.349
Region				
	Europe	Base		
	Africa	2.97	[1.45,6.10]	0.003
	Asia	0.60	[0.42,0.86]	0.006
	North America	1.25	[0.88,1.77]	0.219
	Oceania	1.97	[0.51,7.57]	0.324
	South America	0.94	[0.47,1.89]	0.860
	Multiple	0.32	[0.03,3.42]	0.344
Residency training				
	Family Medicine	Base		
	Orthopedics	0.61	[0.41,0.91]	0.016
	Internal Medicine	0.63	[0.36,1.09]	0.100
	PM&R	0.54	[0.35,0.83]	0.005
	Pediatrics	0.76	[0.42,1.38]	0.370
	Emergency Medicine	0.26	[0.13,0.52]	< 0.001
	Sports Medicine	1.23	[0.68,2.22]	0.495
	Other	0.57	[0.28,1.16]	0.121
Female coaches		Odds Ratio	95% CI	p value
Gender				
	Male	Base		
	Female	1.01	[0.76,1.35]	0.927
Age		1.00	[0.99,1.02]	0.471
Region				
	Europe	Base		
	Africa	4.53	[2.26,9.08]	< 0.001
	Asia	1.01	[0.67,1.52]	0.959
	North America	1.50	[1.03,2.18]	0.036
	Oceania	1.26	[0.30,5.29]	0.756
	South America	1.37	[0.64,2.93]	0.413
	Multiple	0.77	[0.07,8.26]	0.826
Residency training				
	Family Medicine	Base		
	Orthopedics	0.47	[0.31,0.73]	0.001
	Internal Medicine	0.75	[0.42,1.34]	0.326
	PM&R	0.75	[0.48,1.17]	0.208
	Pediatrics	0.70	[0.37,1.34]	0.283
	Emergency Medicine	0.39	[0.17,0.86]	0.019
	Sports Medicine	1.21	[0.65,2.24]	0.547
	Other	0.65	[0.32,1.34]	0.243
Male physicians in practice longer		Odds Ratio	95% CI	p value
Gender				
	Male	Base		
	Female	2.42	[1.85,3.17]	< 0.001
Age		0.96	[0.95,0.97]	< 0.001
Region				
	Europe	Base		
	Africa	4.00	[2.03,7.90]	< 0.001
	Asia	0.92	[0.63,1.32]	0.637

North America	1.98	[1.34,2.93]	0.001
Oceania	0.06	[0.01,0.56]	0.014
South America	1.80	[0.91,3.56]	0.093
Multiple	0.43	[0.04,4.72]	0.488
Residency training			
Family Medicine	Base		
Orthopedics	1.62	[1.07,2.46]	0.024
Internal Medicine	0.92	[0.51,1.66]	0.785
PM&R	0.95	[0.61,1.46]	0.807
Pediatrics	1.50	[0.81,2.78]	0.199
Emergency Medicine	1.42	[0.75,2.70]	0.284
Sports Medicine	1.89	[1.03,3.48]	0.041
Other	1.95	[1.01,3.78]	0.046
Male physicians in practice the same or less	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	2.36	[1.80,3.11]	< 0.001
Age	1.00	[0.99,1.01]	0.504
Region			
Europe	Base		
Africa	2.15	[1.03,4.48]	0.042
Asia	0.87	[0.60,1.26]	0.459
North America	1.31	[0.91,1.89]	0.148
Oceania	1.14	[0.27,4.73]	0.860
South America	0.92	[0.44,1.93]	0.830
Multiple	0.76	[0.07,8.03]	0.819
Residency training			
Family Medicine	Base		
Orthopedics	1.10	[0.73,1.67]	0.636
Internal Medicine	0.62	[0.34,1.13]	0.116
PM&R	0.69	[0.45,1.07]	0.100
Pediatrics	1.19	[0.64,2.22]	0.581
Emergency Medicine	1.51	[0.77,2.96]	0.230
Sports Medicine	0.92	[0.50,1.70]	0.798
Other	1.16	[0.60,2.26]	0.660
Female physicians in practice longer	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	1.00	[0.75,1.32]	0.996
Age	0.96	[0.95,0.97]	< 0.001
Region			
Europe	Base		
Africa	3.48	[1.69,7.17]	0.001
Asia	0.70	[0.47,1.04]	0.076
North America	1.20	[0.82,1.74]	0.348
Oceania	0.46	[0.08,2.55]	0.371
South America	0.52	[0.22,1.21]	0.128
Multiple	0.72	[0.07,7.87]	0.789
Residency training			
Family Medicine	Base		

Orthopedics	1.07	[0.69,1.66]	0.748
Internal Medicine	0.93	[0.51,1.69]	0.804
PM&R	1.02	[0.66,1.59]	0.921
Pediatrics	1.30	[0.68,2.51]	0.430
Emergency Medicine	0.93	[0.46,1.89]	0.839
Sports Medicine	1.14	[0.60,2.14]	0.689
Other	1.21	[0.58,2.53]	0.608
Female physicians in practice the same or less	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	0.76	[0.56,1.04]	0.083
Age	0.98	[0.97,1.00]	0.018
Region			
Europe	Base		
Africa	3.12	[1.46,6.64]	0.003
Asia	0.83	[0.55,1.26]	0.375
North America	1.22	[0.81,1.84]	0.337
Oceania	n.c.		
South America	1.10	[0.50,2.42]	0.821
Multiple	1.17	[0.11,12.21]	0.898
Residency training			
Family Medicine	Base		
Orthopedics	1.19	[0.75,1.89]	0.466
Internal Medicine	0.84	[0.42,1.66]	0.616
PM&R	1.27	[0.79,2.04]	0.326
Pediatrics	1.69	[0.86,3.35]	0.130
Emergency Medicine	1.90	[0.94,3.83]	0.073
Sports Medicine	1.11	[0.56,2.18]	0.771
Other	1.44	[0.67,3.10]	0.355
Male athletic trainers	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	1.70	[1.29,2.24]	< 0.001
Age	1.00	[0.98,1.01]	0.424
Region			
Europe	Base		
Africa	3.89	[1.94,7.83]	< 0.001
Asia	0.70	[0.48,1.02]	0.065
North America	1.12	[0.77,1.62]	0.551
Oceania	0.89	[0.22,3.63]	0.871
South America	1.14	[0.55,2.36]	0.729
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.81	[0.53,1.23]	0.315
Internal Medicine	0.64	[0.35,1.16]	0.144
PM&R	0.90	[0.58,1.40]	0.649
Pediatrics	0.72	[0.38,1.37]	0.314
Emergency Medicine	0.43	[0.21,0.90]	0.026
Sports Medicine	1.22	[0.67,2.23]	0.521

Other	1.08	[0.53,2.19]	0.836
Female athletic trainers	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	1.16	[0.86,1.57]	0.328
Age	1.00	[0.99,1.01]	0.757
Region			
Europe	Base		
Africa	4.18	[1.99,8.79]	< 0.001
Asia	0.77	[0.50,1.18]	0.230
North America	1.34	[0.90,2.02]	0.152
Oceania	0.34	[0.04,3.00]	0.330
South America	2.04	[0.99,4.2]	0.055
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.79	[0.50,1.25]	0.305
Internal Medicine	0.42	[0.20,0.85]	0.017
PM&R	1.01	[0.63,1.61]	0.970
Pediatrics	0.98	[0.50,1.93]	0.953
Emergency Medicine	0.59	[0.27,1.30]	0.189
Sports Medicine	1.10	[0.56,2.13]	0.789
Other	0.96	[0.44,2.11]	0.921
Organizations/Administrations	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	1.48	[1.12,1.94]	0.005
Age	1.00	[0.98,1.01]	0.472
Region			
Europe	Base		
Africa	2.42	[1.18,4.97]	0.016
Asia	0.79	[0.55,1.15]	0.220
North America	1.03	[0.72,1.48]	0.865
Oceania	1.04	[0.28,3.81]	0.954
South America	2.21	[1.13,4.34]	0.021
Multiple	0.83	[0.08,9.19]	0.880
Residency training			
Family Medicine	Base		
Orthopedics	0.75	[0.50,1.12]	0.160
Internal Medicine	0.73	[0.42,1.29]	0.283
PM&R	0.59	[0.38,0.92]	0.021
Pediatrics	0.74	[0.40,1.36]	0.329
Emergency Medicine	0.48	[0.23,0.99]	0.046
Sports Medicine	1.70	[0.95,3.05]	0.073
Other	1.06	[0.54,2.07]	0.866

PM&R; physical medicine and rehabilitation, 95 % CI; 95 % confidence interval, n.c; not calculated

Table 2 Results of ordinal logistic regression analysis on having felt disrespected or their judgment questioned (both genders separately)

Female sports medicine physicians			
Male athletes	Odds Ratio	95% CI	p value
Age	1.01	[0.99,1.04]	0.301
Region			
Europe	Base		
Africa	3.24	[1.14,9.19]	0.027
Asia	0.61	[0.28,1.35]	0.224
North America	2.36	[1.25,4.47]	0.008
Oceania	3.26	[0.42,25.44]	0.260
South America	0.23	[0.02,2.14]	0.196
Residency training			
Family Medicine	Base		
Orthopedics	0.80	[0.37,1.72]	0.571
Internal Medicine	0.64	[0.23,1.81]	0.400
PM&R	0.89	[0.47,1.66]	0.710
Pediatrics	0.73	[0.33,1.60]	0.426
Emergency Medicine	0.96	[0.38,2.46]	0.938
Sports Medicine	0.80	[0.28,2.31]	0.683
Other	2.40	[0.61,9.34]	0.208
Female athletes	Odds Ratio	95% CI	p value
Age	1.02	[0.99,1.04]	0.137
Region			
Europe	Base		
Africa	2.85	[0.95,8.54]	0.061
Asia	0.88	[0.38,2.02]	0.764
North America	1.64	[0.86,3.12]	0.135
Oceania	7.18	[0.85,60.46]	0.070
South America	0.36	[0.04,3.38]	0.368
Residency training			
Family Medicine	Base		
Orthopedics	0.84	[0.38,1.87]	0.665
Internal Medicine	1.15	[0.41,3.26]	0.791
PM&R	0.89	[0.47,1.70]	0.732
Pediatrics	1.21	[0.55,2.68]	0.633
Emergency Medicine	1.63	[0.64,4.17]	0.307
Sports Medicine	0.77	[0.26,2.25]	0.628
Other	1.06	[0.22,5.22]	0.939
Male coaches	Odds Ratio	95% CI	p value
Age	1.01	[0.99,1.03]	0.464
Region			
Europe	Base		
Africa	4.37	[1.53,12.51]	0.006
Asia	0.76	[0.35,1.64]	0.487
North America	1.25	[0.66,2.37]	0.486
Oceania	14.58	[2.09,101.54]	0.007
South America	0.17	[0.02,1.67]	0.128
Residency training			
Family Medicine	Base		

Orthopedics	0.46	[0.22,0.99]	0.046
Internal Medicine	0.38	[0.15,0.99]	0.048
PM&R	0.42	[0.21,0.80]	0.009
Pediatrics	0.55	[0.26,1.15]	0.112
Emergency Medicine	0.30	[0.11,0.81]	0.018
Sports Medicine	0.38	[0.13,1.09]	0.073
Other	0.31	[0.07,1.45]	0.138
Female coaches	Odds Ratio	95% CI	p value
Age	1.02	[0.99,1.04]	0.226
Region			
Europe	Base		
Africa	4.60	[1.59,13.28]	0.005
Asia	1.75	[0.77,3.98]	0.182
North America	1.45	[0.73,2.88]	0.286
Oceania	8.05	[0.99,65.53]	0.051
South America	0.54	[0.06,5.11]	0.589
Residency training			
Family Medicine	Base		
Orthopedics	0.46	[0.20,1.04]	0.061
Internal Medicine	0.57	[0.20,1.67]	0.305
PM&R	0.80	[0.41,1.54]	0.501
Pediatrics	0.68	[0.30,1.53]	0.347
Emergency Medicine	0.57	[0.18,1.75]	0.324
Sports Medicine	0.59	[0.18,1.89]	0.375
Other	1.37	[0.30,6.19]	0.684
Male physicians in practice longer	Odds Ratio	95% CI	p value
Age	0.98	[0.96,1.00]	0.126
Region			
Europe	Base		
Africa	5.63	[2.01,15.75]	0.001
Asia	0.97	[0.47,2.03]	0.943
North America	3.66	[1.84,7.29]	< 0.001
Oceania	n.c.		
South America	1.05	[0.13,8.85]	0.962
Residency training			
Family Medicine	Base		
Orthopedics	2.71	[1.30,5.64]	0.008
Internal Medicine	0.59	[0.21,1.69]	0.324
PM&R	0.79	[0.43,1.47]	0.464
Pediatrics	0.92	[0.43,1.96]	0.829
Emergency Medicine	2.15	[0.90,5.15]	0.085
Sports Medicine	1.86	[0.64,5.40]	0.255
Other	4.42	[1.21,16.17]	0.025
Male physicians in practice the same or less	Odds Ratio	95% CI	p value
Age	1.01	[0.99,1.03]	0.275
Region			
Europe	Base		
Africa	1.12	[0.38,3.28]	0.843
Asia	0.80	[0.38,1.69]	0.554
North America	1.44	[0.77,2.71]	0.254
Oceania	3.10	[0.44,21.77]	0.255

South America	0.72	[0.11,4.79]	0.734
Residency training			
Family Medicine	Base		
Orthopedics	0.85	[0.40,1.81]	0.675
Internal Medicine	0.41	[0.15,1.12]	0.082
PM&R	0.44	[0.23,0.83]	0.012
Pediatrics	0.99	[0.47,2.10]	0.987
Emergency Medicine	1.45	[0.56,3.78]	0.447
Sports Medicine	0.53	[0.19,1.48]	0.224
Other	1.84	[0.52,6.42]	0.342
Female physicians in practice longer	Odds Ratio	95% CI	p value
Age	0.98	[0.95,1.00]	0.062
Region			
Europe	Base		
Africa	4.95	[1.65,14.91]	0.004
Asia	1.35	[0.62,2.93]	0.453
North America	1.59	[0.84,3.03]	0.156
Oceania	n.c.		
South America	0.44	[0.05,4.11]	0.469
Residency training			
Family Medicine	Base		
Orthopedics	1.51	[0.70,3.27]	0.296
Internal Medicine	0.92	[0.34,2.51]	0.878
PM&R	1.13	[0.60,2.14]	0.701
Pediatrics	1.15	[0.51,2.59]	0.744
Emergency Medicine	1.23	[0.45,3.36]	0.685
Sports Medicine	0.88	[0.29,2.63]	0.817
Other	3.10	[0.77,12.58]	0.113
Female physicians in practice the same or less	Odds Ratio	95% CI	p value
Age	0.99	[0.97,1.02]	0.710
Region			
Europe	Base		
Africa	4.49	[1.37,14.76]	0.013
Asia	1.43	[0.59,3.50]	0.429
North America	1.83	[0.84,4.02]	0.130
Oceania	n.c.		
South America	0.97	[0.10,9.32]	0.977
Residency training			
Family Medicine	Base		
Orthopedics	1.85	[0.78,4.37]	0.163
Internal Medicine	0.38	[0.08,1.80]	0.224
PM&R	1.02	[0.49,2.12]	0.952
Pediatrics	1.19	[0.48,2.92]	0.712
Emergency Medicine	1.62	[0.57,4.64]	0.368
Sports Medicine	0.96	[0.25,3.61]	0.948
Other	3.41	[0.65,17.75]	0.146
Male athletic trainers	Odds Ratio	95% CI	p value
Age	1.01	[0.98,1.03]	0.595
Region			
Europe	Base		
Africa	7.99	[2.84,22.44]	< 0.001

Asia	0.93	[0.42,2.08]	0.865
North America	2.04	[1.05,3.98]	0.036
Oceania	3.99	[0.57,28.04]	0.165
South America	0.40	[0.04,3.70]	0.417
Residency training			
Family Medicine	Base		
Orthopedics	0.88	[0.40,1.91]	0.745
Internal Medicine	0.56	[0.20,1.57]	0.271
PM&R	0.88	[0.46,1.66]	0.684
Pediatrics	0.59	[0.27,1.31]	0.195
Emergency Medicine	0.68	[0.26,1.77]	0.434
Sports Medicine	0.79	[0.27,2.33]	0.672
Other	1.83	[0.40,8.41]	0.435
Female athletic trainers	Odds Ratio	95% CI	p value
Age	1.03	[1.00,1.05]	0.049
Region			
Europe	Base		
Africa	7.26	[2.33,22.66]	0.001
Asia	1.27	[0.51,3.12]	0.610
North America	2.28	[1.05,4.96]	0.037
Oceania	n.c.		
South America	0.69	[0.07,6.64]	0.748
Residency training			
Family Medicine	Base		
Orthopedics	1.00	[0.42,2.40]	0.995
Internal Medicine	0.24	[0.05,1.16]	0.076
PM&R	1.31	[0.66,2.59]	0.442
Pediatrics	1.01	[0.43,2.36]	0.981
Emergency Medicine	1.42	[0.52,3.88]	0.499
Sports Medicine	0.99	[0.28,3.50]	0.984
Other	5.23	[1.17,23.3]	0.030
Organizations/Administrations	Odds Ratio	95% CI	p value
Age	1.02	[0.99,1.04]	0.137
Region			
Europe	Base		
Africa	2.40	[0.83,6.97]	0.108
Asia	0.71	[0.32,1.57]	0.397
North America	1.73	[0.90,3.30]	0.099
Oceania	2.55	[0.37,17.80]	0.345
South America	3.62	[0.55,23.95]	0.182
Residency training			
Family Medicine	Base		
Orthopedics	1.03	[0.48,2.21]	0.948
Internal Medicine	0.32	[0.11,0.98]	0.046
PM&R	0.45	[0.23,0.88]	0.020
Pediatrics	0.65	[0.32,1.34]	0.245
Emergency Medicine	0.43	[0.15,1.23]	0.117
Sports Medicine	0.97	[0.35,2.71]	0.957
Other	1.10	[0.25,4.78]	0.900
Male sports medicine physicians			
Male athletes	Odds Ratio	95% CI	p value

Age	0.98	[0.97,0.99]	0.006
Region			
Europe	Base		
Africa	1.08	[0.38,3.12]	0.884
Asia	0.58	[0.38,0.89]	0.012
North America	1.22	[0.80,1.87]	0.357
Oceania	0.75	[0.12,4.62]	0.758
South America	1.38	[0.64,2.95]	0.412
Multiple	0.29	[0.03,3.28]	0.318
Residency training			
Family Medicine	Base		
Orthopedics	0.69	[0.43,1.12]	0.131
Internal Medicine	0.59	[0.29,1.20]	0.144
PM&R	0.73	[0.41,1.29]	0.277
Pediatrics	1.38	[0.47,4.07]	0.563
Emergency Medicine	0.27	[0.10,0.73]	0.010
Sports Medicine	1.66	[0.81,3.38]	0.164
Other	0.68	[0.31,1.51]	0.343
Female athletes	Odds Ratio	95% CI	p value
Age	0.99	[0.97,1.00]	0.030
Region			
Europe	Base		
Africa	1.95	[0.70,5.41]	0.200
Asia	0.56	[0.36,0.87]	0.010
North America	1.37	[0.89,2.12]	0.151
Oceania	0.24	[0.02,2.52]	0.237
South America	0.98	[0.43,2.20]	0.957
Multiple	0.45	[0.04,5.00]	0.519
Residency training			
Family Medicine	Base		
Orthopedics	0.55	[0.33,0.90]	0.016
Internal Medicine	0.94	[0.48,1.86]	0.870
PM&R	0.74	[0.41,1.33]	0.312
Pediatrics	1.06	[0.36,3.11]	0.912
Emergency Medicine	0.23	[0.08,0.68]	0.008
Sports Medicine	1.18	[0.57,2.47]	0.652
Other	0.59	[0.25,1.36]	0.214
Male coaches	Odds Ratio	95% CI	p value
Age	0.99	[0.98,1.00]	0.160
Region			
Europe	Base		
Africa	1.76	[0.63,4.96]	0.283
Asia	0.52	[0.34,0.80]	0.003
North America	1.18	[0.77,1.82]	0.448
Oceania	0.49	[0.08,2.97]	0.440
South America	0.93	[0.44,1.99]	0.854
Multiple	0.24	[0.02,2.68]	0.246
Residency training			
Family Medicine	Base		
Orthopedics	0.75	[0.46,1.21]	0.235
Internal Medicine	0.87	[0.44,1.72]	0.699

PM&R	0.62	[0.35,1.11]	0.108
Pediatrics	1.42	[0.48,4.17]	0.524
Emergency Medicine	0.20	[0.07,0.59]	0.003
Sports Medicine	2.39	[1.15,4.95]	0.019
Other	0.76	[0.34,1.69]	0.502
Female coaches	Odds Ratio	95% CI	p value
Age	1.00	[0.99,1.02]	0.747
Region			
Europe	Base		
Africa	4.55	[1.71,12.12]	0.002
Asia	0.87	[0.54,1.40]	0.573
North America	1.59	[1.00,2.51]	0.049
Oceania	0.26	[0.03,2.68]	0.257
South America	1.41	[0.61,3.24]	0.421
Multiple	0.63	[0.06,6.88]	0.702
Residency training			
Family Medicine	Base		
Orthopedics	0.51	[0.30,0.85]	0.011
Internal Medicine	0.85	[0.42,1.71]	0.641
PM&R	0.66	[0.35,1.21]	0.178
Pediatrics	0.88	[0.29,2.67]	0.824
Emergency Medicine	0.25	[0.08,0.81]	0.021
Sports Medicine	1.78	[0.83,3.79]	0.136
Other	0.57	[0.25,1.33]	0.195
Male physicians in practice longer	Odds Ratio	95% CI	p value
Age	0.95	[0.94,0.97]	< 0.001
Region			
Europe	Base		
Africa	3.26	[1.25,8.49]	0.016
Asia	0.94	[0.60,1.46]	0.772
North America	1.44	[0.88,2.35]	0.145
Oceania	0.18	[0.02,1.95]	0.160
South America	1.83	[0.87,3.88]	0.113
Multiple	0.35	[0.03,4.14]	0.407
Residency training			
Family Medicine	Base		
Orthopedics	1.36	[0.81,2.29]	0.248
Internal Medicine	1.16	[0.57,2.35]	0.690
PM&R	1.21	[0.66,2.24]	0.534
Pediatrics	3.90	[1.35,11.26]	0.012
Emergency Medicine	0.91	[0.35,2.39]	0.854
Sports Medicine	2.10	[0.98,4.50]	0.056
Other	1.59	[0.72,3.52]	0.251
Male physicians in practice the same or less	Odds Ratio	95% CI	p value
Age	0.99	[0.98,1.01]	0.289
Region			
Europe	Base		
Africa	4.13	[1.48,11.51]	0.007
Asia	0.85	[0.55,1.31]	0.459
North America	1.18	[0.74,1.87]	0.483
Oceania	0.45	[0.04,4.70]	0.507

South America	0.86	[0.38,1.94]	0.723
Multiple	0.70	[0.07,7.54]	0.770
Residency training			
Family Medicine	Base		
Orthopedics	1.32	[0.79,2.20]	0.285
Internal Medicine	0.84	[0.40,1.79]	0.652
PM&R	1.11	[0.61,2.01]	0.740
Pediatrics	1.57	[0.51,4.80]	0.430
Emergency Medicine	1.45	[0.55,3.80]	0.452
Sports Medicine	1.28	[0.59,2.78]	0.531
Other	1.11	[0.49,2.50]	0.810
Female physicians in practice longer	Odds Ratio	95% CI	p value
Age	0.95	[0.94,0.97]	< 0.001
Region			
Europe	Base		
Africa	2.81	[1.03,7.63]	0.043
Asia	0.60	[0.37,0.95]	0.031
North America	1.11	[0.69,1.79]	0.666
Oceania	0.92	[0.13,6.38]	0.929
South America	0.49	[0.19,1.23]	0.128
Multiple	0.59	[0.05,6.62]	0.665
Residency training			
Family Medicine	Base		
Orthopedics	1.02	[0.60,1.75]	0.932
Internal Medicine	0.99	[0.46,2.12]	0.976
PM&R	0.88	[0.48,1.63]	0.687
Pediatrics	1.94	[0.63,5.96]	0.247
Emergency Medicine	0.68	[0.24,1.91]	0.462
Sports Medicine	1.38	[0.62,3.05]	0.427
Other	0.94	[0.38,2.36]	0.902
Female physicians in practice the same or less	Odds Ratio	95% CI	p value
Age	0.98	[0.97,1.00]	0.017
Region			
Europe	Base		
Africa	2.52	[0.90,7.06]	0.078
Asia	0.76	[0.47,1.23]	0.259
North America	1.11	[0.67,1.82]	0.693
Oceania	n.c.		
South America	1.03	[0.44,2.44]	0.944
Multiple	1.04	[0.10,11.06]	0.974
Residency training			
Family Medicine	Base		
Orthopedics	1.15	[0.66,2.01]	0.616
Internal Medicine	1.15	[0.52,2.55]	0.732
PM&R	1.51	[0.80,2.83]	0.202
Pediatrics	2.99	[1.02,8.80]	0.046
Emergency Medicine	2.21	[0.85,5.75]	0.103
Sports Medicine	1.34	[0.59,3.05]	0.482
Other	1.28	[0.53,3.13]	0.582
Male athletic trainers	Odds Ratio	95% CI	p value
Age	0.99	[0.98,1.01]	0.219

Region			
Europe	Base		
Africa	1.91	[0.69,5.34]	0.216
Asia	0.60	[0.39,0.93]	0.024
North America	0.78	[0.49,1.24]	0.995
Oceania	0.2	[0.02,2.03]	0.173
South America	1.09	[0.49,2.44]	0.827
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.80	[0.47,1.34]	0.390
Internal Medicine	0.77	[0.37,1.62]	0.497
PM&R	0.99	[0.54,1.81]	0.971
Pediatrics	0.97	[0.31,3.03]	0.955
Emergency Medicine	0.24	[0.07,0.85]	0.028
Sports Medicine	2.01	[0.94,4.30]	0.071
Other	1.02	[0.45,2.32]	0.964
Female athletic trainers	Odds Ratio	95% CI	p value
Age	0.99	[0.98,1.01]	0.504
Region			
Europe	Base		
Africa	3.28	[1.13,9.53]	0.029
Asia	0.69	[0.42,1.13]	0.142
North America	1.12	[0.68,1.85]	0.649
Oceania	0.49	[0.05,5.11]	0.551
South America	2.16	[0.98,4.77]	0.056
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.72	[0.41,1.25]	0.239
Internal Medicine	0.49	[0.21,1.15]	0.100
PM&R	0.81	[0.42,1.54]	0.513
Pediatrics	1.07	[0.34,3.34]	0.912
Emergency Medicine	0.18	[0.04,0.83]	0.028
Sports Medicine	1.28	[0.57,2.89]	0.550
Other	0.58	[0.21,1.57]	0.280
Organizations/Administrations	Odds Ratio	95% CI	p value
Age	0.99	[0.98,1.00]	0.122
Region			
Europe	Base		
Africa	2.65	[0.92,7.58]	0.070
Asia	0.76	[0.50,1.17]	0.211
North America	0.74	[0.47,1.16]	0.186
Oceania	0.66	[0.11,3.89]	0.649
South America	1.86	[0.88,3.92]	0.105
Multiple	0.72	[0.07,7.70]	0.784
Residency training			
Family Medicine	Base		
Orthopedics	0.74	[0.45,1.21]	0.233
Internal Medicine	1.10	[0.56,2.17]	0.786
PM&R	0.81	[0.44,1.48]	0.489

Pediatrics	0.66	[0.19,2.28]	0.509
Emergency Medicine	0.51	[0.18,1.45]	0.207
Sports Medicine	2.49	[1.20,5.18]	0.014
Other	1.18	[0.55,2.55]	0.674

PM&R; physical medicine and rehabilitation, 95 % CI; 95 % confidence interval, n.c; not calculated

Table 3 Results of ordinal logistic regression on having sexually harassed (both genders combined)

Male athletes	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	11.58	[5.75,23.30]	< 0.001
Age	0.96	[0.94,0.99]	0.021
Region			
Europe	Base		
Africa	7.43	[2.4,22.98]	< 0.001
Asia	2.8	[1.03,7.62]	0.044
North America	1.39	[0.58,3.34]	0.457
Oceania	67.5	[4.66,978.04]	0.002
South America	7.92	[1.34,46.89]	0.023
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.43	[0.16,1.17]	0.097
Internal Medicine	0.34	[0.07,1.56]	0.165
PM&R	0.65	[0.29,1.45]	0.292
Pediatrics	0.23	[0.05,1.06]	0.059
Emergency Medicine	0.42	[0.09,1.88]	0.254
Sports Medicine	0.13	[0.01,1.20]	0.072
Other	1.51	[0.35,6.62]	0.582
Female athletes	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	0.37	[0.16,0.89]	0.026
Age	0.97	[0.93,1.00]	0.050
Region			
Europe	Base		
Africa	4.57	[1.42,14.78]	0.011
Asia	0.77	[0.28,2.07]	0.598
North America	0.42	[0.14,1.23]	0.112
Oceania	69.31	[5.45,880.55]	0.001
South America	4.71	[1.26,17.67]	0.022
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.90	[0.27,2.99]	0.870
Internal Medicine	0.87	[0.16,4.71]	0.867
PM&R	2.69	[0.96,7.53]	0.060
Pediatrics	n.c.		
Emergency Medicine	0.80	[0.09,7.34]	0.847
Sports Medicine	0.26	[0.03,2.48]	0.244
Other	1.84	[0.32,10.44]	0.491
Male coaches	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	9.41	[4.35,20.36]	< 0.001

Age	0.97	[0.94,1.01]	0.101
Region			
Europe	Base		
Africa	7.87	[2.36,26.27]	0.001
Asia	2.80	[0.86,9.14]	0.088
North America	1.17	[0.44,3.14]	0.751
Oceania	30.67	[3.30,285.07]	0.003
South America	6.34	[1.05,38.13]	0.044
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.30	[0.09,1.00]	0.049
Internal Medicine	0.43	[0.09,2.06]	0.294
PM&R	0.52	[0.2,1.34]	0.176
Pediatrics	0.73	[0.23,2.32]	0.589
Emergency Medicine	n.c.		
Sports Medicine	0.35	[0.06,1.95]	0.232
Other	1.05	[0.19,5.89]	0.952
Female coaches	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	0.32	[0.09,1.18]	0.086
Age	0.95	[0.90,0.99]	0.030
Region			
Europe	Base		
Africa	4.33	[0.78,24.09]	0.094
Asia	1.37	[0.37,5.07]	0.635
North America	0.74	[0.16,3.51]	0.707
Oceania	n.c.		
South America	2.77	[0.27,28.56]	0.392
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	2.13	[0.37,12.34]	0.399
Internal Medicine	n.c.		
PM&R	3.79	[0.81,17.66]	0.089
Pediatrics	n.c.		
Emergency Medicine	2.38	[0.22,25.71]	0.476
Sports Medicine	n.c.		
Other	6.01	[0.71,50.84]	0.099
Male physicians in practice longer	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	28.25	[14.61,54.62]	< 0.001
Age	0.99	[0.96,1.01]	0.272
Region			
Europe	Base		
Africa	2.21	[0.71,6.81]	0.169
Asia	1.37	[0.63,2.97]	0.427
North America	1.83	[0.90,3.73]	0.095
Oceania	n.c.		

South America	3.46	[0.81,14.78]	0.093
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	2.00	[0.92,4.35]	0.082
Internal Medicine	0.42	[0.12,1.51]	0.184
PM&R	0.63	[0.30,1.29]	0.205
Pediatrics	0.13	[0.03,0.58]	0.007
Emergency Medicine	0.46	[0.13,1.66]	0.236
Sports Medicine	0.73	[0.22,2.40]	0.609
Other	2.96	[0.83,10.54]	0.094
Male physicians in practice the same or less	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	13.84	[6.54,29.32]	< 0.001
Age	0.99	[0.96,1.02]	0.442
Region			
Europe	Base		
Africa	0.50	[0.06,4.24]	0.528
Asia	1.33	[0.53,3.31]	0.542
North America	1.51	[0.63,3.59]	0.354
Oceania	n.c.		
South America	5.26	[1.22,22.63]	0.026
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	1.61	[0.62,4.16]	0.328
Internal Medicine	0.65	[0.14,3.04]	0.586
PM&R	0.92	[0.38,2.24]	0.852
Pediatrics	0.36	[0.08,1.59]	0.177
Emergency Medicine	0.74	[0.16,3.43]	0.704
Sports Medicine	0.83	[0.19,3.63]	0.802
Other	2.77	[0.62,12.41]	0.183
Female physicians in practice longer	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	1.03	[0.35,2.99]	0.960
Age	0.99	[0.95,1.03]	0.621
Region			
Europe	Base		
Africa	5.42	[0.84,35.11]	0.076
Asia	1.18	[0.32,4.36]	0.806
North America	1.07	[0.22,5.22]	0.930
Oceania	n.c.		
South America	4.33	[0.70,26.62]	0.114
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	1.90	[0.38,9.47]	0.432
Internal Medicine	n.c.		

PM&R	1.34	[0.27,6.58]	0.716
Pediatrics	n.c.		
Emergency Medicine	n.c.		
Sports Medicine	0.84	[0.07,9.81]	0.890
Other	3.98	[0.53,29.9]	0.179
Female physicians in practice the same or less	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	0.61	[0.20,1.83]	0.375
Age	0.98	[0.94,1.02]	0.316
Region			
Europe	Base		
Africa	6.84	[1.28,36.62]	0.025
Asia	1.71	[0.50,5.85]	0.390
North America	0.64	[0.13,3.09]	0.577
Oceania	n.c.		
South America	4.33	[0.70,26.66]	0.114
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	1.73	[0.37,8.16]	0.489
Internal Medicine	0.82	[0.08,8.45]	0.865
PM&R	1.63	[0.35,7.61]	0.535
Pediatrics	2.10	[0.22,20.43]	0.523
Emergency Medicine	n.c.		
Sports Medicine	n.c.		
Other	2.99	[0.40,22.31]	0.285
Male athletic trainers	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	5.37	[2.44,11.82]	< 0.001
Age	0.99	[0.96,1.03]	0.694
Region			
Europe	Base		
Africa	1.83	[0.43,7.72]	0.410
Asia	1.71	[0.59,4.96]	0.322
North America	0.49	[0.18,1.33]	0.161
Oceania	n.c.		
South America	3.44	[0.63,18.81]	0.153
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.45	[0.14,1.43]	0.174
Internal Medicine	n.c.		
PM&R	0.70	[0.24,2.08]	0.525
Pediatrics	0.78	[0.16,3.74]	0.760
Emergency Medicine	0.48	[0.06,3.88]	0.492
Sports Medicine	0.38	[0.07,2.08]	0.267
Other	0.90	[0.16,4.99]	0.909
Female athletic trainers	Odds Ratio	95% CI	p value

Gender			
Male	Base		
Female	0.30	[0.08,1.12]	0.073
Age	0.95	[0.91,1.00]	0.053
Region			
Europe	Base		
Africa	3.49	[0.51,23.86]	0.202
Asia	3.10	[0.68,14.06]	0.143
North America	0.54	[0.11,2.73]	0.458
Oceania	n.c.		
South America	3.87	[0.34,43.67]	0.274
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.44	[0.08,2.48]	0.351
Internal Medicine	1.46	[0.21,9.97]	0.700
PM&R	1.01	[0.19,5.48]	0.993
Pediatrics	2.56	[0.26,25.17]	0.420
Emergency Medicine	1.67	[0.17,16.85]	0.662
Sports Medicine	n.c.		
Other	1.91	[0.24,15.34]	0.543
Organizations/Administrations	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	6.80	[3.24,14.23]	< 0.001
Age	1.01	[0.98,1.04]	0.546
Region			
Europe	Base		
Africa	10.18	[2.95,35.19]	< 0.001
Asia	3.35	[0.99,11.37]	0.052
North America	1.48	[0.52,4.26]	0.465
Oceania	19.87	[2.71,145.48]	0.003
South America	5.51	[0.95,32.01]	0.058
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.26	[0.08,0.86]	0.028
Internal Medicine	n.c.		
PM&R	0.63	[0.24,1.65]	0.342
Pediatrics	0.84	[0.27,2.67]	0.769
Emergency Medicine	0.33	[0.04,2.56]	0.286
Sports Medicine	0.66	[0.15,2.95]	0.586
Other	0.83	[0.15,4.66]	0.828

PM&R; physical medicine and rehabilitation, 95 % CI; 95 % confidence interval, n.c; not calculated

Table 4 Results of ordinal logistic regression on having sexually harassed (both genders separately)

Female sports medicine physicians			
Male athletes	Odds Ratio	95% CI	p value
Age	0.98	[0.95,1.02]	0.258
Region			
Europe	Base		
Africa	7.79	[2.23,27.21]	0.001
Asia	1.17	[0.34,4.02]	0.799
North America	1.48	[0.57,3.82]	0.424
Oceania	96.64	[5.4,1730.32]	0.002
South America	4.68	[0.41,53.33]	0.214
Residency training			
Family Medicine	Base		
Orthopedics	0.68	[0.22,2.11]	0.504
Internal Medicine	0.47	[0.10,2.26]	0.343
PM&R	0.52	[0.21,1.3]	0.160
Pediatrics	0.24	[0.05,1.08]	0.063
Emergency Medicine	0.51	[0.11,2.35]	0.388
Sports Medicine	0.17	[0.02,1.57]	0.117
Other	1.98	[0.31,12.54]	0.469
Female athletes	Odds Ratio	95% CI	p value
Age	1.07	[0.96,1.19]	0.216
Region			
Europe	Base		
Africa	10.5	[0.51,215.79]	0.127
Asia	0.57	[0.05,7.11]	0.660
North America	0.86	[0.05,14.35]	0.914
Oceania	n.c.		
South America	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	n.c.		
Internal Medicine	n.c.		
PM&R	n.c.		
Pediatrics	n.c.		
Emergency Medicine	n.c.		
Sports Medicine	n.c.		
Other	n.c.		
Male coaches	Odds Ratio	95% CI	p value
Age	1.00	[0.96,1.04]	0.994
Region			
Europe	Base		
Africa	6.91	[1.84,25.94]	0.004
Asia	0.72	[0.13,4.03]	0.708
North America	1.17	[0.40,3.40]	0.769
Oceania	54.56	[4.24,702.61]	0.002
South America	3.23	[0.30,35.26]	0.337
Residency training			
Family Medicine	Base		

Orthopedics	0.37	[0.09,1.58]	0.178
Internal Medicine	0.63	[0.13,3.18]	0.577
PM&R	0.43	[0.14,1.31]	0.139
Pediatrics	0.73	[0.23,2.35]	0.604
Emergency Medicine	n.c.		
Sports Medicine	0.40	[0.07,2.36]	0.314
Other	1.10	[0.11,11.31]	0.938
Female coaches	Odds Ratio	95% CI	p value
Age	1.06	[0.94,1.20]	0.355
Region			
Europe	Base		
Africa	n.c.		
Asia	1.15	[0.06,22.31]	0.925
North America	2.10	[0.06,70.52]	0.678
Oceania	n.c.		
South America	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	n.c.		
Internal Medicine	n.c.		
PM&R	n.c.		
Pediatrics	n.c.		
Emergency Medicine	n.c.		
Sports Medicine	n.c.		
Other	n.c.		
Male physicians in practice longer	Odds Ratio	95% CI	p value
Age	1.00	[0.98,1.03]	0.868
Region			
Europe	Base		
Africa	1.65	[0.48,5.69]	0.425
Asia	0.66	[0.25,1.73]	0.395
North America	2.00	[0.92,4.38]	0.082
Oceania	n.c.		
South America	4.29	[0.50,36.7]	0.184
Residency training			
Family Medicine	Base		
Orthopedics	3.27	[1.35,7.93]	0.009
Internal Medicine	0.49	[0.13,1.83]	0.291
PM&R	0.47	[0.20,1.06]	0.069
Pediatrics	0.12	[0.03,0.55]	0.006
Emergency Medicine	0.49	[0.13,1.82]	0.288
Sports Medicine	0.76	[0.22,2.65]	0.668
Other	2.46	[0.49,12.38]	0.274
Male physicians in practice the same or less	Odds Ratio	95% CI	p value
Age	1.00	[0.97,1.04]	0.960
Region			
Europe	Base		
Africa	n.c.		
Asia	0.66	[0.20,2.16]	0.490
North America	1.94	[0.72,5.19]	0.187
Oceania	n.c.		

South America	2.48	[0.21,28.86]	0.468
Residency training			
Family Medicine	Base		
Orthopedics	2.77	[0.93,8.24]	0.067
Internal Medicine	0.93	[0.19,4.53]	0.930
PM&R	0.91	[0.34,2.45]	0.847
Pediatrics	0.18	[0.02,1.38]	0.098
Emergency Medicine	0.86	[0.18,4.06]	0.846
Sports Medicine	1.29	[0.27,6.27]	0.751
Other	3.83	[0.58,25.28]	0.163
Female physicians in practice longer	Odds Ratio	95% CI	p value
Age	1.12	[1.02,1.22]	0.017
Region			
Europe	Base		
Africa	n.c.		
Asia	3.04	[0.21,43.03]	0.411
North America	1.26	[0.06,26.77]	0.883
Oceania	n.c.		
South America	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	1.50	[0.08,29.57]	0.792
Internal Medicine	n.c.		
PM&R	n.c.		
Pediatrics	n.c.		
Emergency Medicine	n.c.		
Sports Medicine	1.72	[0.04,74.98]	0.779
Other	5.66	[0.13,244.09]	0.366
Female physicians in practice the same or less	Odds Ratio	95% CI	p value
Age	1.10	[0.99,1.21]	0.064
Region			
Europe	Base		
Africa	n.c.		
Asia	3.01	[0.22,40.79]	0.408
North America	1.29	[0.06,29.87]	0.873
Oceania	n.c.		
South America	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	1.68	[0.08,35.90]	0.739
Internal Medicine	n.c.		
PM&R	n.c.		
Pediatrics	n.c.		
Emergency Medicine	n.c.		
Sports Medicine	n.c.		
Other	6.11	[0.14,275.62]	0.352
Male athletic trainers	Odds Ratio	95% CI	p value
Age	1.04	[0.99,1.08]	0.099
Region			
Europe	Base		
Africa	1.38	[0.24,8.00]	0.716

Asia	0.77	[0.17,3.47]	0.737
North America	0.65	[0.19,2.16]	0.480
Oceania	n.c.		
South America	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.88	[0.22,3.47]	0.856
Internal Medicine	n.c.		
PM&R	0.36	[0.07,1.82]	0.217
Pediatrics	0.43	[0.05,3.47]	0.431
Emergency Medicine	0.59	[0.07,4.94]	0.625
Sports Medicine	0.54	[0.09,3.38]	0.508
Other	1.18	[0.11,12.91]	0.891
Female athletic trainers	Odds Ratio	95% CI	p value
Age	1.06	[0.93,1.20]	0.366
Region			
Europe	Base		
Africa	n.c.		
Asia	1.19	[0.06,23.07]	0.909
North America	2.15	[0.06,72.86]	0.670
Oceania	n.c.		
South America	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	n.c.		
Internal Medicine	n.c.		
PM&R	n.c.		
Pediatrics	n.c.		
Emergency Medicine	n.c.		
Sports Medicine	n.c.		
Other	n.c.		
Organizations/Administrations	Odds Ratio	95% CI	p value
Age	1.06	[1.02,1.10]	0.004
Region			
Europe	Base		
Africa	8.49	[1.73,41.69]	0.008
Asia	2.10	[0.38,11.70]	0.396
North America	2.49	[0.64,9.59]	0.186
Oceania	47.58	[4.69,483.01]	0.001
South America	5.78	[0.51,66.11]	0.158
Residency training			
Family Medicine	Base		
Orthopedics	0.34	[0.07,1.59]	0.170
Internal Medicine	n.c.		
PM&R	0.30	[0.08,1.22]	0.094
Pediatrics	0.60	[0.16,2.20]	0.439
Emergency Medicine	0.39	[0.05,3.13]	0.374
Sports Medicine	0.93	[0.16,5.33]	0.937
Other	1.42	[0.12,17.36]	0.784
Male sports medicine physicians			
Male athletes	Odds Ratio	95% CI	p value

Age	0.92	[0.85,0.99]	0.022
Region			
Europe	Base		
Africa	n.c.		
Asia	n.c.		
North America	n.c.		
Oceania	n.c.		
South America	n.c.		
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.04	[0.00,0.40]	0.007
Internal Medicine	n.c.		
PM&R	0.41	[0.04,4.11]	0.451
Pediatrics	n.c.		
Emergency Medicine	n.c.		
Sports Medicine	n.c.		
Other	0.23	[0.01,4.34]	0.328
Female athletes	Odds Ratio	95% CI	p value
Age	0.97	[0.93,1.00]	0.063
Region			
Europe	Base		
Africa	6.12	[1.53,24.39]	0.010
Asia	0.97	[0.32,2.97]	0.953
North America	0.45	[0.14,1.45]	0.181
Oceania	n.c.		
South America	5.96	[1.45,24.45]	0.013
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.53	[0.14,1.94]	0.334
Internal Medicine	0.66	[0.11,3.88]	0.643
PM&R	2.30	[0.76,6.96]	0.140
Pediatrics	n.c.		
Emergency Medicine	n.c.		
Sports Medicine	0.21	[0.02,2.10]	0.185
Other	0.68	[0.07,6.64]	0.744
Male coaches	Odds Ratio	95% CI	p value
Age	0.88	[0.81,0.97]	0.007
Region			
Europe	Base		
Africa	n.c.		
Asia	n.c.		
North America	n.c.		
Oceania	n.c.		
South America	n.c.		
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.04	[0.00,0.67]	0.025
Internal Medicine	n.c.		

	PM&R	0.22	[0.01,3.76]	0.296
	Pediatrics	n.c.		
	Emergency Medicine	n.c.		
	Sports Medicine	n.c.		
	Other	0.35	[0.01,9.46]	0.532
	Female coaches	Odds Ratio	95% CI	p value
Age		0.94	[0.89,0.99]	0.022
Region				
	Europe	Base		
	Africa	6.24	[0.93,41.75]	0.059
	Asia	1.63	[0.36,7.32]	0.526
	North America	0.74	[0.13,4.26]	0.733
	Oceania	n.c.		
	South America	3.45	[0.3,39.58]	0.319
	Multiple	n.c.		
Residency training				
	Family Medicine	Base		
	Orthopedics	1.45	[0.22,9.70]	0.702
	Internal Medicine	n.c.		
	PM&R	3.20	[0.64,16.03]	0.157
	Pediatrics	n.c.		
	Emergency Medicine	n.c.		
	Sports Medicine	n.c.		
	Other	2.54	[0.18,36.01]	0.490
	Male physicians in practice longer	Odds Ratio	95% CI	p value
Age		0.93	[0.88,0.99]	0.025
Region				
	Europe	Base		
	Africa	n.c.		
	Asia	n.c.		
	North America	n.c.		
	Oceania	n.c.		
	South America	n.c.		
	Multiple	n.c.		
Residency training				
	Family Medicine	Base		
	Orthopedics	0.28	[0.02,3.67]	0.330
	Internal Medicine	n.c.		
	PM&R	1.45	[0.14,15.56]	0.759
	Pediatrics	n.c.		
	Emergency Medicine	n.c.		
	Sports Medicine	n.c.		
	Other	1.56	[0.09,28.28]	0.762
	Male physicians in practice the same or less	Odds Ratio	95% CI	p value
Age		0.95	[0.89,1.02]	0.130
Region				
	Europe	Base		
	Africa	n.c.		
	Asia	n.c.		
	North America	n.c.		
	Oceania	n.c.		

South America	n.c.		
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.08	[0.01,0.89]	0.039
Internal Medicine	n.c.		
PM&R	0.26	[0.02,3.33]	0.301
Pediatrics	1.86	[0.08,43.1]	0.699
Emergency Medicine	n.c.		
Sports Medicine	n.c.		
Other	0.27	[0.01,5.27]	0.384
Female physicians in practice longer	Odds Ratio	95% CI	p value
Age	0.95	[0.90,1.01]	0.109
Region			
Europe	Base		
Africa	10.88	[1.07,110.11]	0.043
Asia	1.38	[0.25,7.62]	0.714
North America	1.33	[0.17,10.23]	0.785
Oceania	n.c.		
South America	7.45	[0.89,62.22]	0.064
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	1.98	[0.25,15.61]	0.517
Internal Medicine	n.c.		
PM&R	1.66	[0.25,10.91]	0.600
Pediatrics	n.c.		
Emergency Medicine	n.c.		
Sports Medicine	n.c.		
Other	3.20	[0.21,48.20]	0.401
Female physicians in practice the same or less	Odds Ratio	95% CI	p value
Age	0.96	[0.92,1.01]	0.124
Region			
Europe	Base		
Africa	10.57	[1.55,72.11]	0.016
Asia	1.69	[0.41,6.93]	0.465
North America	0.43	[0.06,3.22]	0.412
Oceania	n.c.		
South America	4.56	[0.66,31.56]	0.124
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	2.06	[0.29,14.45]	0.466
Internal Medicine	1.08	[0.08,14.73]	0.955
PM&R	2.46	[0.36,16.61]	0.356
Pediatrics	8.44	[0.64,112.05]	0.106
Emergency Medicine	n.c.		
Sports Medicine	n.c.		
Other	2.27	[0.15,33.73]	0.552
Male athletic trainers	Odds Ratio	95% CI	p value

Age	0.92	[0.86,0.99]	0.020
Region			
Europe	Base		
Africa	5.78	[0.3,110.83]	0.245
Asia	17.16	[1.29,227.36]	0.031
North America	0.32	[0.02,5.54]	0.435
Oceania	n.c.		
South America	54.29	[2.73,1077.57]	0.009
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.11	[0.01,1.14]	0.064
Internal Medicine	n.c.		
PM&R	0.75	[0.08,7.10]	0.799
Pediatrics	3.83	[0.20,74.39]	0.376
Emergency Medicine	n.c.		
Sports Medicine	n.c.		
Other	0.51	[0.03,9.89]	0.654
Female athletic trainers	Odds Ratio	95% CI	p value
Age	0.94	[0.89,0.99]	0.024
Region			
Europe	Base		
Africa	6.29	[0.72,55.07]	0.097
Asia	5.66	[0.86,37.37]	0.072
North America	0.52	[0.08,3.46]	0.502
Oceania	n.c.		
South America	6.30	[0.44,90.86]	0.177
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.20	[0.03,1.34]	0.098
Internal Medicine	0.96	[0.12,7.43]	0.965
PM&R	0.66	[0.11,4.08]	0.651
Pediatrics	3.67	[0.34,39.27]	0.283
Emergency Medicine	n.c.		
Sports Medicine	n.c.		
Other	0.58	[0.04,7.97]	0.683
Organizations/Administrations	Odds Ratio	95% CI	p value
Age	0.92	[0.86,0.99]	0.029
Region			
Europe	Base		
Africa	29.80	[2.54,349.89]	0.007
Asia	9.53	[0.88,103.12]	0.064
North America	0.33	[0.02,6.23]	0.461
Oceania	n.c.		
South America	15.40	[0.65,363.96]	0.090
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.25	[0.02,2.57]	0.241
Internal Medicine	n.c.		

PM&R	1.96	[0.26,14.92]	0.517
Pediatrics	10.13	[0.54,189.77]	0.121
Emergency Medicine	n.c.		
Sports Medicine	n.c.		
Other	1.16	[0.06,21.31]	0.922

PM&R; physical medicine and rehabilitation, 95 % CI; 95 % confidence interval, n.c.; not calculated

Details of the survey

- What is your gender? Female, Male, Prefer not to answer, Other
- In what country do you practice?
- How many years have you been practicing after completing residency or fellowship?
Answer “0” if you are still in training
- In what specialty was your primary residency training?
Emergency Medicine, Family Medicine, Internal Medicine, Orthopaedics, Pediatrics,
Physical Medicine & Rehabilitation, Other
- What is your age?
- What is your marital status? (select all that apply)
Married, Not married but in a relationship, Not married nor in a relationship, Divorced,
Widowed, Prefer not to answer
- Do you have any children? Yes, No, Prefer not to answer
- Which of the following best describes you? (select all that apply).
Asian, Black or African American, Hispanic or Latino, Native American, Pacific islander,
White, Other
- How often have you felt disrespected or had your judgment questioned by the following?”

How often have you felt disrespected or had your judgment questioned by the following?	Every day	Few times a week	Few times a month	Few times a year	Never
Male Athletes					
Female Athletes					
Male Coaches					
Female Coaches					
Male physicians who have been in practice longer than you					
Male physicians who have been in practice the same or less time than you					
Female physicians who have been in practice longer than you					
Female physicians who have been in practice the same or less time than you					
Male Athletic trainer					
Female Athletic trainer					
Organization/Administration (Ex Team Manager, Athletic Director)					
• How often have you been sexually harassed by the following?					
Male Athletes					

Female Athletes

Male Coaches

Female Coaches

Male physicians who have been in practice longer than you

Male physicians who have been in practice the same or less time than you

Female physicians who have been in practice longer than you

Female physicians who have been in practice the same or less time than you

Male Athletic trainer

Female Athletic trainer

Organization/Administration
(Ex Team Manager, Athletic Director)

- How comfortable are you with a female sports medicine physician working on the sidelines during her pregnancy?
To a great extent, Somewhat, Very little, Not at all
- Female physicians can continue to work as productively as male sports medicine physicians after giving birth
Strongly agree, Agree, Undecided, Disagree, Strongly disagree
- How satisfied are you with the percentage of sports medicine physicians that are female in your country?
To a great extent, Somewhat, Very little, Not at all
- Please rate your level of agreement with the following statements

	Strongly Agree	Agree	Undecided	Disagree	Strongly disagree
MALE sports medicine physicians are better suited than their female counterparts to take care of MALE athletes.					
MALE sports medicine physicians are better suited than their female counterparts to take care of FEMALE athletes.					
FEMALE sports medicine physicians are better suited than their male					

counterparts to take care of MALE athletes.	
FEMALE sports medicine physicians are better suited than their male counterparts to take care of FEMALE athletes.	

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2 Table 5. Full results of logistic regression analysis on having felt disrespected or their judgment
3 questioned (both genders combined)

Male athletes		Odds Ratio	95% CI	p value
Gender				
	Male	Base		
	Female	1.23	[0.91,1.65]	0.174
Age		0.99	[0.98,1.00]	0.221
Region				
	Europe	Base		
	Africa	1.50	[0.69,3.24]	0.305
	Asia	0.56	[0.38,0.81]	0.002
	North America	1.67	[1.14,2.43]	0.008
	Oceania	3.33	[0.37,29.75]	0.283
	South America	1.19	[0.57,2.48]	0.653
	Multiple	0.40	[0.03,4.56]	0.458
Residency training				
	Family Medicine	Base		
	Orthopedics	0.70	[0.46,1.08]	0.106
	Internal Medicine	0.53	[0.29,0.96]	0.037
	PM&R	0.74	[0.47,1.18]	0.203
	Pediatrics	0.67	[0.34,1.31]	0.243
	Emergency Medicine	0.45	[0.22,0.90]	0.024
	Sports Medicine	1.22	[0.64,2.33]	0.537
	Other	0.78	[0.39,1.56]	0.479
Female athletes		Odds Ratio	95% CI	p value
Gender				
	Male	Base		
	Female	0.83	[0.62,1.11]	0.205
Age		0.99	[0.98,1.01]	0.314
Region				
	Europe	Base		
	Africa	1.83	[0.86,3.90]	0.119
	Asia	0.57	[0.39,0.85]	0.006
	North America	1.48	[1.02,2.15]	0.039
	Oceania	1.33	[0.27,6.54]	0.722
	South America	0.82	[0.39,1.75]	0.610
	Multiple	0.58	[0.05,6.63]	0.659
Residency training				
	Family Medicine	Base		
	Orthopedics	0.58	[0.38,0.90]	0.014
	Internal Medicine	0.99	[0.55,1.79]	0.975
	PM&R	0.85	[0.54,1.33]	0.466
	Pediatrics	0.94	[0.49,1.79]	0.842

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Emergency Medicine	0.66	[0.33,1.33]	0.250
Sports Medicine	1.04	[0.56,1.94]	0.903
Other	0.56	[0.27,1.18]	0.128
Male coaches	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	2.01	[1.48,2.74]	< 0.001
Age	1.00	[0.98,1.01]	0.483
Region			
Europe	Base		
Africa	2.42	[1.01,5.79]	0.048
Asia	0.62	[0.42,0.90]	0.013
North America	1.45	[0.99,2.14]	0.059
Oceania	2.57	[0.28,23.52]	0.402
South America	0.92	[0.43,1.94]	0.821
Multiple	0.38	[0.03,4.35]	0.434
Residency training			
Family Medicine	Base		
Orthopedics	0.67	[0.43,1.03]	0.068
Internal Medicine	0.78	[0.42,1.45]	0.441
PM&R	0.52	[0.32,0.83]	0.007
Pediatrics	0.96	[0.45,2.02]	0.913
Emergency Medicine	0.29	[0.14,0.60]	0.001
Sports Medicine	1.29	[0.66,2.53]	0.461
Other	0.49	[0.24,1.01]	0.052
Female coaches	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	1.03	[0.76,1.38]	0.858
Age	1.01	[0.99,1.02]	0.320
Region			
Europe	Base		
Africa	6.24	[2.63,14.84]	< 0.001
Asia	1.03	[0.68,1.55]	0.904
North America	1.61	[1.09,2.36]	0.017
Oceania	1.67	[0.34,8.25]	0.526
South America	1.30	[0.60,2.81]	0.498
Multiple	0.88	[0.08,10.19]	0.918
Residency training			
Family Medicine	Base		
Orthopedics	0.47	[0.30,0.74]	0.001
Internal Medicine	0.73	[0.40,1.34]	0.316
PM&R	0.74	[0.46,1.17]	0.199
Pediatrics	0.66	[0.34,1.27]	0.214
Emergency Medicine	0.36	[0.16,0.82]	0.014

Sports Medicine	1.22	[0.64,2.32]	0.540
Other	0.60	[0.29,1.24]	0.166
Male physicians in practice longer	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	2.18	[1.58,3.01]	< 0.001
Age	0.97	[0.95,0.98]	< 0.001
Region			
Europe	Base		
Africa	3.96	[1.51,10.39]	0.005
Asia	1.04	[0.71,1.55]	0.830
North America	2.29	[1.48,3.52]	< 0.001
Oceania	0.06	[0.01,0.59]	0.016
South America	2.15	[0.97,4.78]	0.060
Multiple	0.51	[0.04,6.42]	0.605
Residency training			
Family Medicine	Base		
Orthopedics	1.49	[0.92,2.39]	0.102
Internal Medicine	0.85	[0.44,1.66]	0.632
PM&R	0.85	[0.51,1.42]	0.530
Pediatrics	1.70	[0.70,4.11]	0.238
Emergency Medicine	1.02	[0.46,2.26]	0.968
Sports Medicine	2.15	[1.04,4.41]	0.038
Other	1.61	[0.78,3.31]	0.197
Male physicians in practice the same or less	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	2.10	[1.58,2.80]	< 0.001
Age	1.00	[0.99,1.01]	0.916
Region			
Europe	Base		
Africa	1.96	[0.90,4.27]	0.091
Asia	0.87	[0.60,1.27]	0.476
North America	1.32	[0.91,1.93]	0.148
Oceania	1.62	[0.32,8.15]	0.560
South America	0.92	[0.43,1.96]	0.824
Multiple	0.80	[0.07,8.94]	0.853
Residency training			
Family Medicine	Base		
Orthopedics	1.10	[0.72,1.69]	0.663
Internal Medicine	0.62	[0.34,1.15]	0.130
PM&R	0.73	[0.46,1.15]	0.172
Pediatrics	1.18	[0.60,2.29]	0.636
Emergency Medicine	1.41	[0.68,2.92]	0.360
Sports Medicine	0.99	[0.52,1.87]	0.973

Other	1.12	[0.56,2.24]	0.741
Female physicians in practice longer	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	1.10	[0.82,1.47]	0.532
Age	0.96	[0.95,0.97]	< 0.001
Region			
Europe	Base		
Africa	2.64	[1.19,5.85]	0.017
Asia	0.73	[0.49,1.09]	0.125
North America	1.22	[0.83,1.80]	0.318
Oceania	0.48	[0.08,2.80]	0.418
South America	0.57	[0.24,1.35]	0.204
Multiple	0.85	[0.07,10.13]	0.900
Residency training			
Family Medicine	Base		
Orthopedics	0.98	[0.62,1.54]	0.928
Internal Medicine	0.91	[0.49,1.71]	0.779
PM&R	0.99	[0.63,1.57]	0.970
Pediatrics	0.98	[0.51,1.90]	0.955
Emergency Medicine	0.82	[0.40,1.70]	0.597
Sports Medicine	1.10	[0.57,2.12]	0.777
Other	1.01	[0.48,2.14]	0.971
Female physicians in practice the same or less	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	0.78	[0.57,1.07]	0.130
Age	0.99	[0.98,1.00]	0.084
Region			
Europe	Base		
Africa	2.59	[1.20,5.60]	0.015
Asia	0.80	[0.53,1.23]	0.314
North America	1.25	[0.83,1.90]	0.288
Oceania	n.c.		
South America	1.09	[0.49,2.42]	0.841
Multiple	1.29	[0.11,14.65]	0.835
Residency training			
Family Medicine	Base		
Orthopedics	1.20	[0.75,1.93]	0.445
Internal Medicine	0.81	[0.41,1.62]	0.554
PM&R	1.28	[0.79,2.08]	0.311
Pediatrics	1.40	[0.71,2.76]	0.333
Emergency Medicine	2.02	[0.97,4.18]	0.059
Sports Medicine	1.17	[0.59,2.34]	0.653
Other	1.27	[0.59,2.74]	0.546

Male athletic trainers		Odds Ratio	95% CI	p value
Gender				
Male		Base		
Female		1.55	[1.16,2.07]	0.003
Age		1.00	[0.99,1.01]	0.613
Region				
Europe		Base		
Africa		3.31	[1.48,7.41]	0.004
Asia		0.72	[0.49,1.07]	0.101
North America		1.21	[0.82,1.76]	0.336
Oceania		1.20	[0.24,5.96]	0.825
South America		1.07	[0.51,2.27]	0.853
Multiple		n.c.		
Residency training				
Family Medicine		Base		
Orthopedics		0.82	[0.53,1.27]	0.384
Internal Medicine		0.72	[0.39,1.34]	0.302
PM&R		0.84	[0.53,1.32]	0.450
Pediatrics		0.71	[0.37,1.37]	0.310
Emergency Medicine		0.51	[0.24,1.09]	0.080
Sports Medicine		1.41	[0.74,2.69]	0.292
Other		0.92	[0.45,1.88]	0.819
Female athletic trainers		Odds Ratio	95% CI	p value
Gender				
Male		Base		
Female		1.17	[0.86,1.59]	0.312
Age		1.00	[0.99,1.02]	0.667
Region				
Europe		Base		
Africa		3.46	[1.59,7.51]	0.002
Asia		0.75	[0.49,1.16]	0.194
North America		1.41	[0.94,2.12]	0.097
Oceania		0.36	[0.04,3.21]	0.358
South America		2.17	[1.02,4.60]	0.044
Multiple		n.c.		
Residency training				
Family Medicine		Base		
Orthopedics		0.83	[0.52,1.33]	0.432
Internal Medicine		0.45	[0.22,0.94]	0.033
PM&R		1.01	[0.63,1.63]	0.955
Pediatrics		0.88	[0.45,1.73]	0.713
Emergency Medicine		0.64	[0.29,1.43]	0.279
Sports Medicine		1.09	[0.55,2.16]	0.798
Other		0.88	[0.40,1.92]	0.741
Organizations/Administrations		Odds Ratio	95% CI	p value

Gender			
Male	Base		
Female	1.41	[1.06,1.88]	0.019
Age	1.00	[0.99,1.01]	0.882
Region			
Europe	Base		
Africa	2.34	[1.08,5.10]	0.032
Asia	0.85	[0.58,1.24]	0.408
North America	1.12	[0.77,1.63]	0.553
Oceania	3.76	[0.42,33.67]	0.236
South America	2.12	[1.00,4.50]	0.050
Multiple	0.54	[0.05,6.25]	0.623
Residency training			
Family Medicine	Base		
Orthopedics	0.74	[0.48,1.13]	0.161
Internal Medicine	0.74	[0.41,1.33]	0.311
PM&R	0.56	[0.35,0.88]	0.012
Pediatrics	0.85	[0.44,1.65]	0.635
Emergency Medicine	0.50	[0.24,1.04]	0.063
Sports Medicine	1.64	[0.86,3.12]	0.132
Other	0.90	[0.45,1.79]	0.766

1 PM&R; physical medicine and rehabilitation, 95 % CI; 95 % confidence interval, n.c; not
2 calculated
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- 1 Table 6. Full results of logistic regression analysis on having felt disrespected or their judgment
- 2 questioned (both genders separately)

Female sports medicine physicians			
Male athletes	Odds Ratio	95% CI	p value
Age	1.02	[0.99,1.05]	0.127
Region			
Europe	Base		
Africa	4.21	[1.06,16.63]	0.040
Asia	0.58	[0.26,1.33]	0.201
North America	2.76	[1.40,5.46]	0.004
Oceania	n.c.		
South America	0.26	[0.03,2.46]	0.238
Residency training			
Family Medicine	Base		
Orthopedics	0.83	[0.36,1.94]	0.666
Internal Medicine	0.48	[0.16,1.44]	0.190
PM&R	0.82	[0.40,1.69]	0.586
Pediatrics	0.59	[0.24,1.42]	0.238
Emergency Medicine	0.81	[0.27,2.43]	0.708
Sports Medicine	0.64	[0.22,1.88]	0.417
Other	2.27	[0.50,10.26]	0.286
Female athletes	Odds Ratio	95% CI	p value
Age	1.02	[0.99,1.04]	0.209
Region			
Europe	Base		
Africa	2.43	[0.77,7.69]	0.132
Asia	0.83	[0.36,1.90]	0.656
North America	1.67	[0.86,3.24]	0.132
Oceania	n.c.		
South America	0.36	[0.04,3.43]	0.373
Residency training			
Family Medicine	Base		
Orthopedics	0.89	[0.40,2.02]	0.789
Internal Medicine	1.07	[0.37,3.05]	0.903
PM&R	1.03	[0.53,2.00]	0.936
Pediatrics	1.22	[0.53,2.81]	0.634
Emergency Medicine	1.97	[0.68,5.68]	0.208
Sports Medicine	0.80	[0.27,2.38]	0.684
Other	0.77	[0.17,3.55]	0.738
Male coaches	Odds Ratio	95% CI	p value

Age	1.01	[0.98,1.03]	0.658
Region			
Europe	Base		
Africa	7.03	[0.84,58.79]	0.072
Asia	0.74	[0.32,1.72]	0.490
North America	1.38	[0.66,2.89]	0.396
Oceania	n.c.		
South America	0.13	[0.01,1.32]	0.085
Residency training			
Family Medicine	Base		
Orthopedics	0.62	[0.25,1.54]	0.304
Internal Medicine	0.60	[0.19,1.95]	0.399
PM&R	0.38	[0.18,0.80]	0.011
Pediatrics	1.05	[0.35,3.13]	0.932
Emergency Medicine	0.37	[0.12,1.14]	0.084
Sports Medicine	0.36	[0.12,1.11]	0.074
Other	0.26	[0.06,1.17]	0.079
Female coaches	Odds Ratio	95% CI	p value
Age	1.01	[0.99,1.04]	0.369
Region			
Europe	Base		
Africa	7.48	[1.86,30.04]	0.005
Asia	1.71	[0.74,3.94]	0.210
North America	1.43	[0.72,2.85]	0.303
Oceania	n.c.		
South America	0.55	[0.06,5.31]	0.607
Residency training			
Family Medicine	Base		
Orthopedics	0.53	[0.23,1.24]	0.145
Internal Medicine	0.62	[0.21,1.88]	0.403
PM&R	0.90	[0.45,1.80]	0.769
Pediatrics	0.76	[0.33,1.77]	0.529
Emergency Medicine	0.58	[0.19,1.80]	0.347
Sports Medicine	0.59	[0.18,1.88]	0.369
Other	0.96	[0.22,4.22]	0.952
Male physicians in practice longer	Odds Ratio	95% CI	p value
Age	0.99	[0.96,1.02]	0.471
Region			
Europe	Base		
Africa	6.92	[1.34,35.74]	0.021
Asia	1.37	[0.53,3.55]	0.515
North America	4.55	[2.02,10.29]	< 0.001
Oceania	n.c.		

South America	0.40	[0.06,2.79]	0.354
Residency training			
Family Medicine	Base		
Orthopedics	4.36	[1.51,12.58]	0.006
Internal Medicine	0.43	[0.13,1.43]	0.170
PM&R	0.75	[0.33,1.70]	0.488
Pediatrics	1.07	[0.35,3.23]	0.905
Emergency Medicine	1.10	[0.31,3.94]	0.880
Sports Medicine	1.70	[0.51,5.63]	0.386
Other	7.52	[0.83,67.93]	0.072
Male physicians in practice the same or less	Odds Ratio	95% CI	p value
Age	1.01	[0.99,1.04]	0.258
Region			
Europe	Base		
Africa	1.05	[0.33,3.39]	0.930
Asia	0.87	[0.38,1.96]	0.732
North America	1.41	[0.72,2.75]	0.317
Oceania	n.c.		
South America	0.59	[0.09,3.96]	0.591
Residency training			
Family Medicine	Base		
Orthopedics	0.87	[0.39,1.95]	0.739
Internal Medicine	0.43	[0.15,1.24]	0.117
PM&R	0.47	[0.24,0.92]	0.027
Pediatrics	1.26	[0.52,3.10]	0.608
Emergency Medicine	1.56	[0.47,5.18]	0.471
Sports Medicine	0.56	[0.19,1.65]	0.292
Other	2.80	[0.53,14.96]	0.228
Female physicians in practice longer	Odds Ratio	95% CI	p value
Age	0.97	[0.95,1.00]	0.043
Region			
Europe	Base		
Africa	3.35	[1.01,11.13]	0.048
Asia	1.52	[0.68,3.41]	0.313
North America	1.52	[0.78,2.95]	0.220
Oceania	n.c.		
South America	0.46	[0.05,4.43]	0.505
Residency training			
Family Medicine	Base		
Orthopedics	1.30	[0.58,2.93]	0.527
Internal Medicine	1.02	[0.36,2.92]	0.967
PM&R	1.21	[0.62,2.38]	0.573
Pediatrics	0.96	[0.42,2.21]	0.929

Emergency Medicine	1.01	[0.36,2.79]	0.990
Sports Medicine	0.82	[0.27,2.50]	0.725
Other	2.21	[0.53,9.11]	0.275
Female physicians in practice the same or less	Odds Ratio	95% CI	p value
Age	1.00	[0.97,1.02]	0.798
Region			
Europe	Base		
Africa	3.65	[1.07,12.41]	0.039
Asia	1.33	[0.54,3.26]	0.538
North America	1.74	[0.79,3.82]	0.168
Oceania	n.c.		
South America	0.96	[0.10,9.45]	0.971
Residency training			
Family Medicine	Base		
Orthopedics	1.98	[0.82,4.80]	0.128
Internal Medicine	0.40	[0.09,1.90]	0.251
PM&R	1.10	[0.53,2.32]	0.796
Pediatrics	1.08	[0.44,2.67]	0.866
Emergency Medicine	1.96	[0.65,5.95]	0.232
Sports Medicine	0.96	[0.25,3.65]	0.950
Other	1.99	[0.41,9.57]	0.391
Male athletic trainers	Odds Ratio	95% CI	p value
Age	1.01	[0.98,1.03]	0.648
Region			
Europe	Base		
Africa	12.11	[2.48,59.25]	0.002
Asia	1.10	[0.48,2.50]	0.819
North America	2.18	[1.11,4.30]	0.024
Oceania	n.c.		
South America	0.44	[0.05,4.23]	0.480
Residency training			
Family Medicine	Base		
Orthopedics	1.00	[0.44,2.29]	0.998
Internal Medicine	0.68	[0.23,2.02]	0.490
PM&R	0.84	[0.42,1.68]	0.620
Pediatrics	0.69	[0.30,1.58]	0.378
Emergency Medicine	1.05	[0.36,3.11]	0.927
Sports Medicine	0.86	[0.29,2.58]	0.790
Other	1.17	[0.27,5.08]	0.831
Female athletic trainers	Odds Ratio	95% CI	p value
Age	1.02	[1.00,1.05]	0.086
Region			

Europe	Base		
Africa	7.16	[2.02,25.47]	0.002
Asia	1.22	[0.49,3.04]	0.668
North America	2.44	[1.13,5.27]	0.023
Oceania	n.c.		
South America	0.74	[0.08,7.17]	0.792
Residency training			
Family Medicine	Base		
Orthopedics	1.20	[0.49,2.93]	0.694
Internal Medicine	0.27	[0.06,1.32]	0.106
PM&R	1.42	[0.70,2.89]	0.331
Pediatrics	0.99	[0.42,2.34]	0.984
Emergency Medicine	1.83	[0.62,5.44]	0.277
Sports Medicine	1.02	[0.29,3.62]	0.973
Other	4.13	[0.91,18.71]	0.066
Organizations/Administrations	Odds Ratio	95% CI	p value
Age	1.03	[1.00,1.05]	0.046
Region			
Europe	Base		
Africa	2.26	[0.70,7.32]	0.173
Asia	0.75	[0.33,1.71]	0.490
North America	1.77	[0.90,3.47]	0.098
Oceania	n.c.		
South America	1.67	[0.25,11.04]	0.596
Residency training			
Family Medicine	Base		
Orthopedics	0.98	[0.44,2.22]	0.969
Internal Medicine	0.33	[0.10,1.02]	0.053
PM&R	0.47	[0.24,0.94]	0.033
Pediatrics	1.03	[0.44,2.42]	0.943
Emergency Medicine	0.48	[0.16,1.44]	0.190
Sports Medicine	0.79	[0.27,2.29]	0.663
Other	0.84	[0.19,3.67]	0.819
Male sports medicine physicians			
Male athletes	Odds Ratio	95% CI	p value
Age	0.99	[0.97,1.00]	0.038
Region			
Europe	Base		
Africa	0.71	[0.25,2.02]	0.517
Asia	0.52	[0.34,0.81]	0.003
North America	1.30	[0.81,2.06]	0.274
Oceania	0.86	[0.08,9.60]	0.902
South America	1.26	[0.54,2.93]	0.599
Multiple	0.27	[0.02,3.50]	0.317

Residency training			
Family Medicine	Base		
Orthopedics	0.68	[0.41,1.13]	0.135
Internal Medicine	0.60	[0.29,1.24]	0.167
PM&R	0.71	[0.39,1.32]	0.284
Pediatrics	0.82	[0.28,2.44]	0.725
Emergency Medicine	0.27	[0.10,0.76]	0.013
Sports Medicine	2.37	[0.95,5.88]	0.063
Other	0.62	[0.28,1.41]	0.255
Female athletes	Odds Ratio	95% CI	p value
Age	0.99	[0.97,1.00]	0.071
Region			
Europe	Base		
Africa	1.54	[0.53,4.47]	0.423
Asia	0.53	[0.34,0.84]	0.007
North America	1.49	[0.94,2.38]	0.093
Oceania	0.24	[0.02,2.54]	0.233
South America	0.87	[0.38,1.99]	0.733
Multiple	0.49	[0.04,5.82]	0.568
Residency training			
Family Medicine	Base		
Orthopedics	0.51	[0.30,0.86]	0.011
Internal Medicine	0.95	[0.46,1.99]	0.900
PM&R	0.69	[0.37,1.28]	0.237
Pediatrics	0.72	[0.25,2.12]	0.556
Emergency Medicine	0.23	[0.08,0.67]	0.007
Sports Medicine	1.20	[0.54,2.69]	0.650
Other	0.50	[0.21,1.17]	0.111
Male coaches	Odds Ratio	95% CI	p value
Age	0.99	[0.98,1.01]	0.405
Region			
Europe	Base		
Africa	1.40	[0.47,4.12]	0.543
Asia	0.58	[0.37,0.89]	0.014
North America	1.42	[0.89,2.27]	0.138
Oceania	0.71	[0.06,8.06]	0.785
South America	1.05	[0.45,2.45]	0.915
Multiple	0.27	[0.02,3.57]	0.321
Residency training			
Family Medicine	Base		
Orthopedics	0.72	[0.43,1.21]	0.215
Internal Medicine	0.90	[0.44,1.88]	0.787
PM&R	0.63	[0.34,1.16]	0.138
Pediatrics	0.89	[0.30,2.65]	0.838
Emergency Medicine	0.22	[0.07,0.64]	0.006

Sports Medicine	3.24	[1.26,8.34]	0.015
Other	0.61	[0.27,1.38]	0.238
Female coaches	Odds Ratio	95% CI	p value
Age	1.01	[0.99,1.02]	0.431
Region			
Europe	Base		
Africa	5.64	[1.76,18.05]	0.004
Asia	0.91	[0.56,1.47]	0.686
North America	1.78	[1.11,2.88]	0.018
Oceania	0.25	[0.02,2.69]	0.253
South America	1.31	[0.56,3.11]	0.533
Multiple	0.71	[0.06,8.64]	0.789
Residency training			
Family Medicine	Base		
Orthopedics	0.48	[0.28,0.82]	0.007
Internal Medicine	0.78	[0.37,1.63]	0.510
PM&R	0.58	[0.31,1.11]	0.100
Pediatrics	0.61	[0.21,1.78]	0.363
Emergency Medicine	0.23	[0.07,0.74]	0.014
Sports Medicine	1.93	[0.85,4.40]	0.117
Other	0.51	[0.22,1.21]	0.126
Male physicians in practice longer	Odds Ratio	95% CI	p value
Age	0.96	[0.95,0.97]	< 0.001
Region			
Europe	Base		
Africa	2.94	[0.87,9.90]	0.082
Asia	1.06	[0.67,1.67]	0.804
North America	1.82	[1.09,3.06]	0.023
Oceania	0.15	[0.01,1.72]	0.128
South America	2.76	[1.11,6.85]	0.029
Multiple	0.42	[0.03,5.92]	0.518
Residency training			
Family Medicine	Base		
Orthopedics	1.22	[0.7,2.13]	0.474
Internal Medicine	1.11	[0.51,2.44]	0.787
PM&R	0.97	[0.5,1.88]	0.926
Pediatrics	4.04	[0.85,19.22]	0.080
Emergency Medicine	1.00	[0.35,2.87]	0.994
Sports Medicine	2.98	[1.18,7.51]	0.021
Other	1.22	[0.54,2.78]	0.632
Male physicians in practice the same or less	Odds Ratio	95% CI	p value
Age	1.00	[0.98,1.01]	0.750
Region			
Europe	Base		

Africa	3.12	[1.07,9.07]	0.037
Asia	0.85	[0.54,1.32]	0.465
North America	1.28	[0.80,2.05]	0.298
Oceania	0.43	[0.04,4.64]	0.490
South America	0.91	[0.40,2.10]	0.831
Multiple	0.74	[0.07,8.46]	0.811
Residency training			
Family Medicine	Base		
Orthopedics	1.25	[0.74,2.11]	0.402
Internal Medicine	0.76	[0.35,1.63]	0.483
PM&R	1.06	[0.57,1.97]	0.847
Pediatrics	0.98	[0.33,2.89]	0.975
Emergency Medicine	1.25	[0.48,3.29]	0.644
Sports Medicine	1.37	[0.61,3.05]	0.442
Other	0.95	[0.42,2.17]	0.903
Female physicians in practice longer	Odds Ratio	95% CI	p value
Age	0.96	[0.94,0.97]	< 0.001
Region			
Europe	Base		
Africa	2.34	[0.78,7.05]	0.129
Asia	0.61	[0.38,0.98]	0.040
North America	1.16	[0.71,1.89]	0.550
Oceania	0.54	[0.21,1.38]	0.195
South America	2.34	[0.78,7.05]	0.129
Multiple	0.68	[0.05,8.68]	0.770
Residency training			
Family Medicine	Base		
Orthopedics	0.94	[0.54,1.64]	0.834
Internal Medicine	0.90	[0.41,1.98]	0.790
PM&R	0.77	[0.41,1.46]	0.426
Pediatrics	1.16	[0.39,3.48]	0.786
Emergency Medicine	0.63	[0.22,1.81]	0.393
Sports Medicine	1.41	[0.61,3.28]	0.420
Other	0.77	[0.30,1.94]	0.575
Female physicians in practice the same or less	Odds Ratio	95% CI	p value
Age	0.98	[0.97,1.00]	0.017
Region	0.99	[0.97,1.00]	0.083
Europe	Base		
Africa	2.11	[0.74,5.97]	0.161
Asia	0.74	[0.46,1.21]	0.230
North America	1.15	[0.69,1.91]	0.590
Oceania	n.c.		
South America	1.02	[0.43,2.44]	0.965
Multiple	1.17	[0.10,13.49]	0.902

Residency training			
Family Medicine	Base		
Orthopedics	1.13	[0.64,2.00]	0.668
Internal Medicine	1.05	[0.47,2.35]	0.904
PM&R	1.44	[0.76,2.75]	0.265
Pediatrics	2.13	[0.73,6.20]	0.167
Emergency Medicine	2.07	[0.78,5.49]	0.142
Sports Medicine	1.43	[0.62,3.30]	0.407
Other	1.16	[0.47,2.85]	0.745
Male athletic trainers	Odds Ratio	95% CI	p value
Age	0.99	[0.98,1.01]	0.438
Region			
Europe	Base		
Africa	1.60	[0.56,4.61]	0.382
Asia	0.60	[0.38,0.94]	0.026
North America	0.86	[0.54,1.39]	0.548
Oceania	0.17	[0.02,1.83]	0.143
South America	0.95	[0.41,2.20]	0.908
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.80	[0.47,1.36]	0.406
Internal Medicine	0.81	[0.38,1.72]	0.586
PM&R	0.86	[0.46,1.59]	0.626
Pediatrics	0.74	[0.24,2.25]	0.590
Emergency Medicine	0.24	[0.07,0.88]	0.031
Sports Medicine	2.55	[1.08,6.00]	0.032
Other	0.91	[0.40,2.09]	0.832
Female athletic trainers	Odds Ratio	95% CI	p value
Age	1.00	[0.98,1.01]	0.643
Region			
Europe	Base		
Africa	2.51	[0.86,7.29]	0.092
Asia	0.66	[0.40,1.09]	0.103
North America	1.15	[0.70,1.92]	0.578
Oceania	0.52	[0.05,5.57]	0.586
South America	2.23	[0.97,5.12]	0.058
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.73	[0.41,1.29]	0.278
Internal Medicine	0.53	[0.23,1.24]	0.144
PM&R	0.77	[0.40,1.49]	0.444
Pediatrics	0.84	[0.27,2.59]	0.766
Emergency Medicine	0.19	[0.04,0.86]	0.031

Sports Medicine	1.28	[0.55,2.96]	0.571
Other	0.52	[0.19,1.41]	0.198
Organizations/Administrations	Odds Ratio	95% CI	p value
Age	0.99	[0.98,1.01]	0.435
Region			
Europe	Base		
Africa	2.20	[0.74,6.53]	0.155
Asia	0.82	[0.53,1.28]	0.388
North America	0.84	[0.53,1.35]	0.476
Oceania	1.15	[0.10,12.65]	0.909
South America	1.93	[0.83,4.49]	0.127
Multiple	0.41	[0.03,5.22]	0.490
Residency training			
Family Medicine	Base		
Orthopedics	0.72	[0.43,1.21]	0.215
Internal Medicine	1.08	[0.53,2.23]	0.829
PM&R	0.65	[0.35,1.21]	0.177
Pediatrics	0.48	[0.14,1.59]	0.230
Emergency Medicine	0.50	[0.18,1.40]	0.189
Sports Medicine	2.88	[1.20,6.91]	0.018
Other	0.98	[0.45,2.16]	0.966

1 PM&R; physical medicine and rehabilitation, 95 % CI; 95 % confidence interval, n.c; not
2 calculated

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1 Table 7 Full results of logistic regression on having sexually harassed (both genders combined)

Male athletes	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	12.42	[6.14,25.11]	< 0.001
Age	0.96	[0.93,0.99]	0.021
Region			
Europe	Base		
Africa	7.65	[2.42,24.19]	0.001
Asia	2.76	[1.01,7.56]	0.048
North America	1.35	[0.56,3.22]	0.503
Oceania	127.40	[7.05,2301.59]	0.001
South America	7.60	[1.29,44.79]	0.025
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.43	[0.16,1.18]	0.101
Internal Medicine	0.33	[0.07,1.57]	0.165
PM&R	0.66	[0.30,1.48]	0.314
Pediatrics	0.22	[0.05,1.01]	0.051
Emergency Medicine	0.42	[0.09,1.90]	0.257
Sports Medicine	0.13	[0.01,1.18]	0.070
Other	1.34	[0.31,5.81]	0.699
Female athletes	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	0.41	[0.17,0.97]	0.043
Age	0.97	[0.94,1.00]	0.062
Region			
Europe	Base		
Africa	4.18	[1.30,13.46]	0.016
Asia	0.79	[0.29,2.14]	0.638
North America	0.42	[0.15,1.24]	0.117
Oceania	80.84	[6.10,1072.17]	0.001
South America	4.75	[1.25,18.02]	0.022
Multiple	4.18	[1.30,13.46]	0.016
Residency training			
Family Medicine	Base		
Orthopedics	0.89	[0.27,2.93]	0.847
Internal Medicine	0.89	[0.16,4.86]	0.897
PM&R	2.56	[0.91,7.21]	0.075
Pediatrics	n.c.		
Emergency Medicine	0.83	[0.09,7.50]	0.871
Sports Medicine	0.27	[0.03,2.55]	0.254
Other	1.62	[0.29,9.21]	0.585

Male coaches	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	9.95	[4.58,21.62]	< 0.001
Age	0.97	[0.94,1.00]	0.093
Region			
Europe	Base		
Africa	7.89	[2.34,26.66]	0.001
Asia	2.77	[0.85,9.01]	0.092
North America	1.17	[0.44,3.13]	0.756
Oceania	53.60	[4.65,617.19]	0.001
South America	6.47	[1.07,39.16]	0.042
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.31	[0.09,1.00]	0.050
Internal Medicine	0.44	[0.09,2.09]	0.302
PM&R	0.54	[0.21,1.39]	0.205
Pediatrics	0.73	[0.23,2.35]	0.600
Emergency Medicine	n.c.		
Sports Medicine	0.36	[0.06,1.98]	0.237
Other	0.94	[0.17,5.17]	0.940
Female coaches	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	0.31	[0.09,1.15]	0.080
Age	0.95	[0.90,0.99]	0.027
Region			
Europe	Base		
Africa	4.39	[0.80,23.92]	0.088
Asia	1.39	[0.37,5.16]	0.622
North America	0.73	[0.16,3.42]	0.690
Oceania	n.c.		
South America	2.63	[0.25,27.18]	0.417
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	2.10	[0.37,12.05]	0.404
Internal Medicine	n.c.		
PM&R	4.01	[0.87,18.52]	0.075
Pediatrics	n.c.		
Emergency Medicine	2.36	[0.22,25.63]	0.481
Sports Medicine	n.c.		
Other	5.43	[0.66,45.02]	0.117
Male physicians in practice longer	Odds Ratio	95% CI	p value

Gender			
Male	Base		
Female	27.47	[14.33,52.65]	< 0.001
Age	0.99	[0.96,1.01]	0.224
Region			
Europe	Base		
Africa	2.35	[0.74,7.51]	0.149
Asia	1.40	[0.65,3.06]	0.392
North America	1.86	[0.91,3.82]	0.089
Oceania	n.c.		
South America	3.26	[0.76,14.09]	0.113
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	1.80	[0.82,3.95]	0.144
Internal Medicine	0.42	[0.11,1.52]	0.186
PM&R	0.60	[0.29,1.26]	0.178
Pediatrics	0.13	[0.03,0.55]	0.006
Emergency Medicine	0.40	[0.11,1.43]	0.158
Sports Medicine	0.69	[0.21,2.31]	0.551
Other	2.68	[0.74,9.70]	0.132
Male physicians in practice the same or less	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	13.77	[6.54,28.99]	< 0.001
Age	0.99	[0.96,1.02]	0.363
Region			
Europe	Base		
Africa	0.47	[0.06,3.99]	0.491
Asia	1.25	[0.50,3.10]	0.638
North America	1.46	[0.61,3.47]	0.394
Oceania	n.c.		
South America	4.68	[1.08,20.16]	0.039
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	1.67	[0.64,4.35]	0.293
Internal Medicine	0.66	[0.14,3.07]	0.593
PM&R	0.93	[0.38,2.28]	0.878
Pediatrics	0.36	[0.08,1.59]	0.177
Emergency Medicine	0.66	[0.14,3.04]	0.595
Sports Medicine	0.77	[0.17,3.40]	0.725
Other	2.57	[0.57,11.56]	0.219
Female physicians in practice	Odds Ratio	95% CI	p value

	longer			
Gender				
	Male	Base		
	Female	1.03	[0.36,3.01]	0.950
Age		0.99	[0.95,1.03]	0.627
Region				
	Europe	Base		
	Africa	5.05	[0.79,32.18]	0.087
	Asia	1.18	[0.32,4.37]	0.799
	North America	1.06	[0.22,5.11]	0.945
	Oceania	n.c.		
	South America	4.51	[0.73,27.83]	0.105
	Multiple	n.c.		
Residency training				
	Family Medicine	Base		
	Orthopedics	1.85	[0.37,9.17]	0.450
	Internal Medicine	n.c.		
	PM&R	1.38	[0.28,6.74]	0.688
	Pediatrics	n.c.		
	Emergency Medicine	n.c.		
	Sports Medicine	0.82	[0.07,9.64]	0.875
	Other	3.61	[0.49,26.67]	0.209
Female physicians in practice the same or less	Odds Ratio		95% CI	p value
Gender				
	Male	Base		
	Female	0.61	[0.20,1.84]	0.382
Age		0.98	[0.94,1.02]	0.326
Region				
	Europe	Base		
	Africa	6.40	[1.22,33.52]	0.028
	Asia	1.70	[0.50,5.81]	0.398
	North America	0.63	[0.13,3.01]	0.560
	Oceania	n.c.		
	South America	4.19	[0.68,25.71]	0.122
	Multiple	n.c.		
Residency training				
	Family Medicine	Base		
	Orthopedics	1.71	[0.37,7.98]	0.492
	Internal Medicine	0.85	[0.08,8.78]	0.892
	PM&R	1.66	[0.36,7.73]	0.517
	Pediatrics	2.12	[0.22,20.67]	0.517
	Emergency Medicine	n.c.		
	Sports Medicine	n.c.		
	Other	2.65	[0.36,19.23]	0.336

Male athletic trainers	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	5.40	[2.46,11.85]	< 0.001
Age	0.99	[0.96,1.03]	0.666
Region			
Europe	Base		
Africa	1.84	[0.43,7.75]	0.408
Asia	1.67	[0.58,4.85]	0.344
North America	0.48	[0.18,1.29]	0.144
Oceania	n.c.		
South America	3.43	[0.63,18.80]	0.155
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.45	[0.14,1.42]	0.174
Internal Medicine	n.c.		
PM&R	0.71	[0.24,2.09]	0.529
Pediatrics	0.80	[0.17,3.81]	0.776
Emergency Medicine	0.48	[0.06,3.89]	0.493
Sports Medicine	0.38	[0.07,2.06]	0.262
Other	0.83	[0.15,4.57]	0.830
Female athletic trainers	Odds Ratio	95% CI	p value
Gender			
Male	Base		
Female	0.29	[0.08,1.10]	0.069
Age	0.95	[0.91,1.00]	0.050
Region			
Europe	Base		
Africa	3.37	[0.50,22.80]	0.213
Asia	3.13	[0.69,14.13]	0.139
North America	0.54	[0.11,2.71]	0.455
Oceania	n.c.		
South America	3.97	[0.35,45.18]	0.267
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.43	[0.08,2.41]	0.338
Internal Medicine	1.52	[0.22,10.44]	0.667
PM&R	1.05	[0.20,5.64]	0.955
Pediatrics	2.61	[0.26,25.74]	0.411
Emergency Medicine	1.70	[0.17,17.04]	0.653
Sports Medicine	n.c.		
Other	1.81	[0.23,14.13]	0.573
Organizations/Administrations	Odds Ratio	95% CI	p value

Gender			
Male	Base		
Female	7.31	[3.50,15.27]	< 0.001
Age	1.01	[0.98,1.04]	0.580
Region			
Europe	Base		
Africa	11.51	[3.27,40.53]	< 0.001
Asia	3.38	[0.99,11.46]	0.051
North America	1.37	[0.48,3.92]	0.552
Oceania	35.78	[4.08,313.38]	0.001
South America	5.17	[0.87,30.69]	0.071
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.25	[0.07,0.83]	0.023
Internal Medicine	n.c.		
PM&R	0.58	[0.22,1.56]	0.284
Pediatrics	0.89	[0.28,2.84]	0.838
Emergency Medicine	0.32	[0.04,2.49]	0.274
Sports Medicine	0.60	[0.13,2.71]	0.502
Other	0.67	[0.12,3.81]	0.656

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PM&R; physical medicine and rehabilitation, 95 % CI; 95 % confidence interval, n.c; not calculated

1 Table 8 Full results of logistic regression on having sexually harassed (both genders separately)

Female sports medicine physicians			
Male athletes	Odds Ratio	95% CI	p value
Age	0.98	[0.95,1.02]	0.278
Region			
Europe	Base		
Africa	7.54	[2.12,26.78]	0.002
Asia	1.10	[0.32,3.75]	0.882
North America	1.44	[0.56,3.70]	0.454
Oceania	n.c.		
South America	4.56	[0.40,52.11]	0.223
Residency training			
Family Medicine	Base		
Orthopedics	0.70	[0.23,2.18]	0.543
Internal Medicine	0.48	[0.10,2.32]	0.360
PM&R	0.54	[0.21,1.35]	0.188
Pediatrics	0.23	[0.05,1.06]	0.059
Emergency Medicine	0.53	[0.11,2.43]	0.410
Sports Medicine	0.17	[0.02,1.56]	0.117
Other	1.78	[0.29,11.10]	0.535
Female athletes	Odds Ratio	95% CI	p value
Age	1.06	[0.96,1.17]	0.269
Region			
Europe	Base		
Africa	9.18	[0.48,176.29]	0.142
Asia	0.46	[0.04,6.00]	0.554
North America	0.77	[0.05,12.77]	0.857
Oceania	n.c.		
South America	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.24	[0.02,3.52]	0.296
Internal Medicine	n.c.		
PM&R	0.09	[0.00,2.57]	0.160
Pediatrics	n.c.		
Emergency Medicine	0.50	[0.02,14.60]	0.685
Sports Medicine	n.c.		
Other	n.c.		
Male coaches	Odds Ratio	95% CI	p value
Age	1	[0.96,1.04]	0.995
Region			
Europe	Base		
Africa	6.55	[1.74,24.67]	0.005
Asia	0.68	[0.12,3.79]	0.659
North America	1.18	[0.41,3.40]	0.766

Oceania	n.c.		
South America	3.22	[0.29,35.31]	0.339
Residency training			
Family Medicine	Base		
Orthopedics	0.37	[0.09,1.60]	0.185
Internal Medicine	0.65	[0.13,3.28]	0.603
PM&R	0.46	[0.15,1.38]	0.166
Pediatrics	0.75	[0.23,2.41]	0.631
Emergency Medicine	n.c.		
Sports Medicine	0.41	[0.07,2.42]	0.328
Other	1.00	[0.10,10.19]	0.998
Female coaches	Odds Ratio	95% CI	p value
Age	1.05	[0.93,1.18]	0.416
Region			
Europe	Base		
Africa	0.98	[0.05,19.34]	0.987
Asia	n.c.		
North America	1.98	[0.06,65.93]	0.702
Oceania	n.c.		
South America	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.15	[0.01,3.09]	0.218
Internal Medicine	n.c.		
PM&R	n.c.		
Pediatrics	n.c.		
Emergency Medicine	0.34	[0.01,16.81]	0.586
Sports Medicine	n.c.		
Other	n.c.		
Male physicians in practice longer	Odds Ratio	95% CI	p value
Age	1.00	[0.97,1.03]	0.954
Region			
Europe	Base		
Africa	1.84	[0.52,6.60]	0.346
Asia	0.69	[0.26,1.83]	0.458
North America	2.02	[0.92,4.46]	0.081
Oceania	n.c.		
South America	3.25	[0.41,25.70]	0.264
Residency training			
Family Medicine	Base		
Orthopedics	2.70	[1.10,6.63]	0.030
Internal Medicine	0.50	[0.13,1.87]	0.301
PM&R	0.45	[0.20,1.03]	0.058
Pediatrics	0.12	[0.03,0.54]	0.006
Emergency Medicine	0.42	[0.11,1.54]	0.191

Sports Medicine	0.73	[0.20,2.58]	0.621
Other	2.21	[0.44,11.23]	0.337
Male physicians in practice the same or less	Odds Ratio	95% CI	p value
Age	1.00	[0.96,1.03]	0.919
Region			
Europe	Base		
Africa	n.c.		
Asia	0.61	[0.19,2.00]	0.413
North America	1.86	[0.70,4.97]	0.217
Oceania	n.c.		
South America	1.87	[0.17,20.50]	0.610
Residency training			
Family Medicine	Base		
Orthopedics	2.90	[0.97,8.70]	0.057
Internal Medicine	0.94	[0.19,4.57]	0.934
PM&R	0.92	[0.34,2.49]	0.875
Pediatrics	0.18	[0.02,1.39]	0.101
Emergency Medicine	0.74	[0.16,3.48]	0.704
Sports Medicine	1.21	[0.25,5.94]	0.811
Other	3.41	[0.52,22.24]	0.200
Female physicians in practice longer	Odds Ratio	95% CI	p value
Age	1.11	[1.01,1.21]	0.024
Region			
Europe	Base		
Africa	n.c.		
Asia	2.49	[0.17,35.84]	0.503
North America	1.18	[0.06,24.38]	0.914
Oceania	n.c.		
South America	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	1.65	[0.08,32.03]	0.741
Internal Medicine	n.c.		
PM&R	n.c.		
Pediatrics	n.c.		
Emergency Medicine	n.c.		
Sports Medicine	1.81	[0.04,76.59]	0.755
Other	3.67	[0.07,181.37]	0.513
Female physicians in practice the same or less	Odds Ratio	95% CI	p value
Age	1.09	[0.99,1.19]	0.090
Region			
Europe	Base		
Africa	n.c.		

Asia	2.54	[0.19,34.72]	0.485
North America	1.23	[0.05,27.84]	0.897
Oceania	n.c.		
South America	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	1.85	[0.09,39.23]	0.692
Internal Medicine	n.c.		
PM&R	n.c.		
Pediatrics	n.c.		
Emergency Medicine	n.c.		
Sports Medicine	n.c.		
Other	4.34	[0.09,220.67]	0.464
Male athletic trainers	Odds Ratio	95% CI	p value
Age	1.03	[0.99,1.08]	0.125
Region			
Europe	Base		
Africa	1.41	[0.24,8.13]	0.703
Asia	0.73	[0.16,3.27]	0.677
North America	0.61	[0.19,2.04]	0.427
Oceania	n.c.		
South America	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.90	[0.23,3.55]	0.882
Internal Medicine	n.c.		
PM&R	0.36	[0.07,1.84]	0.221
Pediatrics	0.44	[0.06,3.57]	0.445
Emergency Medicine	0.60	[0.07,5.03]	0.637
Sports Medicine	0.54	[0.09,3.41]	0.516
Other	0.99	[0.09,10.88]	0.992
Female athletic trainers	Odds Ratio	95% CI	p value
Age	1.05	[0.93,1.19]	0.430
Region			
Europe	Base		
Africa	n.c.		
Asia	1.01	[0.05,20.16]	0.995
North America	2.03	[0.06,68.36]	0.693
Oceania	n.c.		
South America	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.15	[0.01,3.03]	0.214
Internal Medicine	n.c.		
PM&R	n.c.		

Pediatrics	n.c.		
Emergency Medicine	0.33	[0.01,16.94]	0.585
Sports Medicine	n.c.		
Other	n.c.		
Organizations/Administrations	Odds Ratio	95% CI	p value
Age	1.05	[1.01,1.09]	0.008
Region			
Europe	Base		
Africa	8.94	[1.83,43.73]	0.007
Asia	1.81	[0.33,10.05]	0.498
North America	2.11	[0.57,7.82]	0.264
Oceania	n.c.		
South America	3.86	[0.34,43.90]	0.276
Residency training			
Family Medicine	Base		
Orthopedics	0.35	[0.08,1.61]	0.177
Internal Medicine	n.c.		
PM&R	0.30	[0.08,1.23]	0.095
Pediatrics	0.64	[0.18,2.36]	0.505
Emergency Medicine	0.40	[0.05,3.21]	0.386
Sports Medicine	0.83	[0.15,4.74]	0.834
Other	0.90	[0.07,11.29]	0.937
Male sports medicine physicians			
Male athletes	Odds Ratio	95% CI	p value
Age	0.92	[0.85,0.99]	0.023
Region			
Europe	Base		
Africa	n.c.		
Asia	5.21	[0.39,69.43]	0.212
North America	0.13	[0.01,1.88]	0.133
Oceania	n.c.		
South America	12.47	[0.41,375.97]	0.146
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.04	[0.00,0.43]	0.007
Internal Medicine	n.c.		
PM&R	0.52	[0.06,4.76]	0.562
Pediatrics	n.c.		
Emergency Medicine	n.c.		
Sports Medicine	n.c.		
Other	0.26	[0.01,4.55]	0.354
Female athletes	Odds Ratio	95% CI	p value
Age	0.97	[0.93,1.00]	0.076
Region			

Europe	Base		
Africa	5.73	[1.43,23.03]	0.014
Asia	1.01	[0.33,3.13]	0.987
North America	0.47	[0.15,1.5]	0.202
Oceania	n.c.		
South America	6.13	[1.46,25.79]	0.013
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.51	[0.14,1.87]	0.308
Internal Medicine	0.68	[0.11,4.00]	0.668
PM&R	2.21	[0.73,6.71]	0.163
Pediatrics	n.c.		
Emergency Medicine	n.c.		
Sports Medicine	0.22	[0.02,2.19]	0.197
Other	0.58	[0.06,5.62]	0.636
Male coaches	Odds Ratio	95% CI	p value
Age	0.88	[0.81,0.96]	0.006
Region			
Europe	Base		
Africa	n.c.		
Asia	5.72	[0.34,95.46]	0.225
North America	0.06	[0.00,1.26]	0.070
Oceania	n.c.		
South America	20.08	[0.53,766.61]	0.106
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.04	[0.00,0.65]	0.023
Internal Medicine	n.c.		
PM&R	0.30	[0.02,4.44]	0.384
Pediatrics	n.c.		
Emergency Medicine	n.c.		
Sports Medicine	n.c.		
Other	0.40	[0.02,9.65]	0.573
Female coaches	Odds Ratio	95% CI	p value
Age	0.94	[0.89,0.99]	0.019
Region			
Europe	Base		
Africa	7.13	[1.07,47.65]	0.043
Asia	1.67	[0.37,7.54]	0.508
North America	0.74	[0.13,4.22]	0.732
Oceania	n.c.		
South America	3.27	[0.28,37.56]	0.342
Multiple	n.c.		

Residency training			
Family Medicine	Base		
Orthopedics	1.47	[0.22,9.71]	0.687
Internal Medicine	n.c.		
PM&R	3.52	[0.71,17.34]	0.122
Pediatrics	n.c.		
Emergency Medicine	n.c.		
Sports Medicine	n.c.		
Other	2.21	[0.16,30.43]	0.552
Male physicians in practice longer	Odds Ratio	95% CI	p value
Age	0.93	[0.87,0.99]	0.023
Region			
Europe	Base		
Africa	n.c.		
Asia	2.85	[0.24,34.22]	0.409
North America	0.22	[0.01,3.44]	0.278
Oceania	n.c.		
South America	4.23	[0.18,101.52]	0.374
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.27	[0.02,3.23]	0.302
Internal Medicine	n.c.		
PM&R	1.64	[0.17,16.33]	0.671
Pediatrics	n.c.		
Emergency Medicine	n.c.		
Sports Medicine	n.c.		
Other	1.56	[0.10,25.41]	0.754
Male physicians in practice the same or less	Odds Ratio	95% CI	p value
Age	0.95	[0.89,1.02]	0.143
Region			
Europe	Base		
Africa	n.c.		
Asia	1.91	[0.13,29.01]	0.641
North America	0.04	[0.00,0.73]	0.030
Oceania	n.c.		
South America	7.5	[0.32,174.90]	0.210
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.09	[0.01,0.83]	0.034
Internal Medicine	n.c.		
PM&R	0.31	[0.03,3.57]	0.347
Pediatrics	2.81	[0.13,61.32]	0.511

Emergency Medicine	n.c.		
Sports Medicine	n.c.		
Other	0.28	[0.02,4.96]	0.387
Female physicians in practice longer	Odds Ratio	95% CI	p value
Age	0.95	[0.90,1.01]	0.111
Region			
Europe	Base		
Africa	10.12	[1.03,99.56]	0.047
Asia	1.44	[0.26,8.01]	0.678
North America	1.31	[0.17,9.96]	0.795
Oceania	n.c.		
South America	8.37	[0.98,71.39]	0.052
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	1.84	[0.24,14.37]	0.560
Internal Medicine	n.c.		
PM&R	1.79	[0.28,11.67]	0.541
Pediatrics	n.c.		
Emergency Medicine	n.c.		
Sports Medicine	n.c.		
Other	2.65	[0.18,39.38]	0.480
Female physicians in practice the same or less	Odds Ratio	95% CI	p value
Age	0.97	[0.92,1.01]	0.129
Region			
Europe	Base		
Africa	10.24	[1.55,67.76]	0.016
Asia	1.69	[0.41,6.92]	0.468
North America	0.43	[0.06,3.16]	0.405
Oceania	n.c.		
South America	4.37	[0.63,30.09]	0.134
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	2.06	[0.30,14.13]	0.463
Internal Medicine	1.18	[0.09,16.15]	0.899
PM&R	2.56	[0.38,17.15]	0.333
Pediatrics	8.65	[0.65,114.58]	0.102
Emergency Medicine	n.c.		
Sports Medicine	n.c.		
Other	1.86	[0.13,26.77]	0.65
Male athletic trainers	Odds Ratio	95% CI	p value
Age	0.92	[0.86,0.99]	0.019

Region			
Europe	Base		
Africa	5.32	[0.28,101.75]	0.267
Asia	17.81	[1.44,220.33]	0.025
North America	0.31	[0.02,5.51]	0.429
Oceania	n.c.		
South America	71.71	[3.62,1419.55]	0.005
Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.10	[0.01,0.99]	0.049
Internal Medicine	n.c.		
PM&R	0.87	[0.10,7.64]	0.903
Pediatrics	4.86	[0.26,91.77]	0.292
Emergency Medicine	n.c.		
Sports Medicine	n.c.		
Other	0.50	[0.03,8.89]	0.639
Female athletic trainers	Odds Ratio	95% CI	p value
Age	0.94	[0.89,0.99]	0.022
Region			
Europe	Base		
Africa	6.24	[0.72,54.10]	0.097
Asia	5.61	[0.87,36.21]	0.070
North America	0.53	[0.08,3.49]	0.509
Oceania	n.c.		
South America	6.42	[0.44,93.26]	0.173
Multiple	6.24	[0.72,54.10]	0.097
Residency training			
Family Medicine	Base		
Orthopedics	0.21	[0.03,1.33]	0.096
Internal Medicine	1.05	[0.14,8.15]	0.961
PM&R	0.71	[0.12,4.29]	0.707
Pediatrics	3.80	[0.35,40.89]	0.270
Emergency Medicine	n.c.		
Sports Medicine	n.c.		
Other	0.56	[0.04,7.40]	0.663
Organizations/Administrations	Odds Ratio	95% CI	p value
Age	0.93	[0.87,1.00]	0.038
Region			
Europe	Base		
Africa	19.92	[1.67,237.06]	0.018
Asia	11.27	[1.01,126.05]	0.049
North America	0.31	[0.02,5.79]	0.434
Oceania	n.c.		
South America	19.49	[0.81,468.61]	0.067

Multiple	n.c.		
Residency training			
Family Medicine	Base		
Orthopedics	0.18	[0.02,1.70]	0.133
Internal Medicine	n.c.		
PM&R	1.54	[0.21,11.38]	0.670
Pediatrics	9.50	[0.54,165.95]	0.123
Emergency Medicine	n.c.		
Sports Medicine	n.c.		
Other	0.80	[0.05,13.73]	0.878

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PM&R; physical medicine and rehabilitation, 95 % CI; 95 % confidence interval, n.c; not calculated