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Epidemiology of Injuries in National Collegiate Athletic Association Men's Soccer: 2014–2015 Through 2018–2019

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Context: The National Collegiate Athletic Association has sponsored men's soccer programs since 1959, and the popularity of the sport has grown over time.

Background: Routine examinations of athlete injuries are important for identifying emerging temporal patterns.

Methods: Exposure and injury data collected in the National Collegiate Athletic Association Injury Surveillance Program from 2014–2015 through 2018–2019 were analyzed. Injury counts, rates, and proportions were used to describe injury characteristics, and injury rate ratios were used to examine differential injury rates.

Results: The overall injury rate was 8.51 per 1000 athlete exposures. Lateral ligament complex tears (ankle sprains) (9.2%), hamstring tears (7.0%), and concussions (5.2%) were the most commonly reported injuries. Rates of lateral ligament complex tears remained stable from 2014–2015 through 2018–2019, whereas hamstring tear rates decreased and concussion rates increased.

Summary: The findings of this study were in line with the existing epidemiological evidence, although notable temporal patterns were observed. Incidence trajectories of commonly observed injuries warrant particular attention in the future.

Key Words: surveillance, collegiate, sport-related

Key Points

- The competition injury rate was higher than the practice injury rate across the study period; however, competition injury rates followed a decreasing trajectory during the latter years of the study period while practice injury rates remained relatively stable.
- Thigh injuries, and ankle injuries accounted for the largest proportions of all injuries reported during the study period, and under half of all reported injuries resulted in time loss of $\geq$ 1 day.
- Most reported injuries were classified as sprains, strains, and contusions; ankle sprains, hamstring tears, and concussions were the most commonly reported specific diagnoses.

Soccer is among the most popular sports in the world, and athletes of all ages widely participate in the sport.[1] It follows that collegiate soccer in the United States is also popular, and men's soccer programs in institutions across the United States have competed as part of the National Collegiate Athletic Association (NCAA) since 1959.[2] Sponsorship of men's soccer programs among member institutions has progressively increased since then, and by the 2014–2015 athletic season, 817 soccer programs competed as part of the NCAA. The number of sponsored programs had risen thereafter to 839 by the 2018–2019 athletic season. Given the notable population of collegiate soccer players in the United States, it is important to continuously survey the landscape of injuries among NCAA soccer players to identify emerging patterns related to injury incidence and outcomes.

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Sports injury surveillance is an effective method of routinely monitoring injury-related patterns in large populations of athletes.[3] Etiological hypotheses developed by researchers using findings from surveillance studies may be used to shape nuanced and targeted studies of specific injuries or athlete subgroups.[3,4] The NCAA has maintained an injury surveillance system since 1982, and after a series of adaptations, it is now in its current form of the NCAA Injury Surveillance Program (ISP).[5,6] Throughout its existence, the NCAA ISP has captured data on men's soccer-related injuries and has been instrumental in appraising the burden of injury in this group.[2,7] Previous researchers studying NCAA men's soccer-related injuries have reported overall injury rates between 6.9 and 8.3 per 1000 athlete-exposures (AEs).[7,8] In prior studies of this population, researchers have also reported higher competition injury rates (15.6–18.8 per 1000 AEs) than practice injury rates (4.3–4.6 per 1000 AEs).[2,7] Furthermore, it has also been noted that the most commonly injured body parts in this group are hip, thigh, and upper leg, and the most common injury diagnoses are sprains, strains, and contusions.[2,7] It is important to follow up this work to

Table 1. Reported and National Estimates of Injuries, AEs, and Rates per 1000 AEs by Event Type Across Divisions[a]

	Number AEs Rate per 1000 AEs (95% CI)					
	Overall		Practices		Competitions	
Division	Reported	National Estimate	Reported	National Estimate	Reported	National Estimate
I	840	17 296	398	7951	442	9345
	106 607	2 413 043	83 627	1 892 966	22 981	520 077
	7.88 (7.35, 8.41)	7.17 (6.63, 7.70)	4.76 (4.29, 5.23)	4.20 (3.73, 4.67)	19.23 (17.44, 21.03)	17.97 (16.18, 19.76)
II	883	23 191	479	13 089	404	10 102
	105 794	2 393 138	79 303	1 854 187	26 491	538 951
	8.35 (7.80, 8.90)	9.69 (9.14, 10.24)	6.04 (5.50, 6.58)	7.06 (6.52, 7.60)	15.25 (13.76, 16.74)	18.74 (17.26, 20.23)
III	1098	46 372	586	25 474	512	20 898
	119 277	4 680 463	88 295	3 527 740	30 981	1 152 724
	9.21 (8.66, 9.75)	9.91 (9.36, 10.45)	6.64 (6.10, 7.17)	7.22 (6.68, 7.76)	16.53 (15.09, 17.96)	18.13 (16.70, 19.56)
Overall	2821	86 859	1463	46 514	1358	40 345
	331 678	9 486 644	251 225	7 274 892	80 453	2 211 752
	8.51 (8.19, 8.82)	9.16 (8.84, 9.47)	5.82 (5.53, 6.12)	6.39 (6.10, 6.69)	16.88 (15.98, 17.78)	18.24 (17.34, 19.14)

Abbreviation: AEs, athlete-exposures.

[a] Data presented in the order of reported number, followed by athlete exposures (AEs), estimated injury rates, and associated 95% Confidence Intervals (CIs) for each cross-tabulation of division and event types. Data pooled association-wide are presented overall, and separately for practices and competitions. National estimates were produced using sampling weights estimated on the basis of sport, division, and year. All CIs were constructed using variance estimates calculated on the basis of reported data. A reportable injury was one that occurred due to participation in an organized intercollegiate practice or competition, and required medical attention by a team Certified Athletic Trainer or physician (regardless of time loss). Only scheduled team practices and competitions were retained in this analysis.

identify temporal differences in injury risk and outcomes. Periodic evaluations of soccer-related injury incidence and subsequent outcomes in this population will help researchers identify emerging patterns and curate salient injury prevention practices. Accordingly, the purpose of this study is to describe the epidemiology of soccer-related injuries captured among NCAA men's soccer players during the 2014–2015 through 2018–2019 athletic seasons.

METHODS

Study Data

Men's soccer exposure and injury data collected in the NCAA ISP during the 2014–2015 through 2018–2019 athletic seasons were analyzed in this study. The methods of the NCAA ISP have been reviewed and approved as an exempt study by the NCAA Research Review Board. NCAA ISP methods are detailed in a separate manuscript within this special issue.[9] Briefly, athletic trainers (ATs) at participating institutions contributed exposure and injury data by using their clinical electronic medical record systems. A reportable injury was one that occurred due to participation in an organized intercollegiate practice or competition and required medical attention by a team certified AT or physician (regardless of time loss [TL]). Scheduled team practices and competitions during the competitive season were considered reportable exposures for this analysis. Data from 17 (2% of membership) participating programs in 2014–2015, 15 (2% of membership) in 2015–2016, 21 (3% of membership) in 2016–2017, 29 (4% of membership) in 2017–2018, and 84 (10% of membership) in 2018–2019 qualified for inclusion in our analyses. Qualification criteria are detailed further in the aforementioned methods manuscript.[9]

Statistical Analysis

Injury counts and rates (per 1000 AEs, for which 1 AE was defined as 1 athlete participating in 1 exposure event) were examined by event type (practice or competition), competition level (Division I, Division II, or Division III), season segment (preseason, regular season, or postseason), and TL (TL or non time loss [NTL]). Poststratification sample weights by sport and division were established within the surveillance system to compute national estimates of injury events based on the sampled teams; weighted and unweighted rates were estimated for this study, and results are presented in terms of unweighted rates unless otherwise specified (due to low frequencies of injury observations across levels of certain explanatory variables). Temporal trends in injury rates across the study period were evaluated using rate profile plots stratified by levels of the aforementioned variables. Similarly, temporal trends in rates of most commonly reported injuries were also examined across the study period. Injury counts and proportions were examined by TL (TL or NTL), body part injured, mechanism of injury, injury diagnosis, player position, and activity at the time of injury. Injury rate ratios (IRRs) were used to examine differential injury rates across event types, competition levels, and season segments. IRRs with associated 95% confidence intervals (CIs) excluding 1.00 were considered statistically significant. All analyses were conducted using SAS 9.4 (SAS Institute).

RESULTS

A total of 2821 men's soccer injuries from 331 678 AEs were reported to the NCAA ISP during the 2014–2015 through 2018–2019 athletic seasons (rate = 8.51 per 1000 AEs). This equated to a national estimate of 86 859 injuries overall (Table 1). Across the study period, the competition injury rate was higher than the practice injury rate (IRR = 2.90; 95% CI = 2.69, 3.12). Competition injury rates were

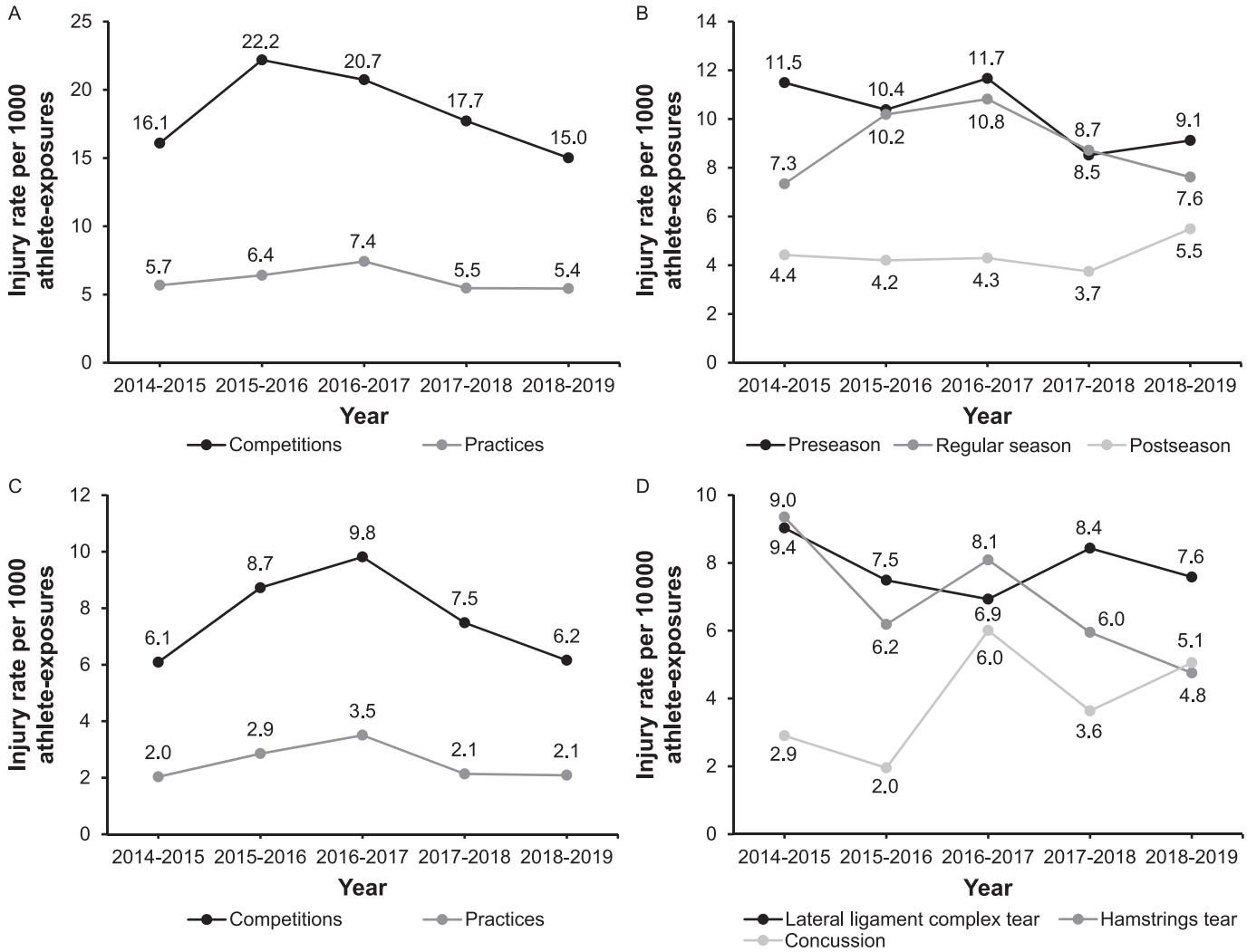

Figure. Temporal patterns in injury rates between 2014–2015 and 2018–2019. A, Overall injury rates (per 1000 AEs) stratified by event type (practices and competitions). B, Injury rates (per 1000 AEs) stratified by season segment. C, Rates (per 1000 AEs) of time loss injuries stratified by event type (practices and competitions). D, Rates (per 10 000 AEs) of most commonly reported injuries. All rates are unweighted and based on reported data.

highest in 2015–2016 and steadily decreased thereafter, whereas practice injury rates remained relatively stable across the study period (Figure A). The overall Division I injury rate (rate = 7.88 per 1000 AEs) was lower than Division II (rate = 8.35 per 1000 AEs) and Division III (rate = 9.21 per 1000 AEs) injury rates; statistically significant differences were observed between Division I and Division III rates (IRR = 0.86; 95% CI = 0.78, 0.94), as well as between Division II and Division III rates (IRR = 0.91; 95% CI = 0.83, 0.99).

Injuries by Season Segment

A total of 756 preseason injuries (national estimate: 23 339), 1974 regular season injuries (national estimate: 60 931), and 91 postseason injuries (national estimate: 2588) were reported between 2014–2015 and 2018–2019 (Table 2). The rate of preseason injuries was higher than rates of regular season (IRR = 1.15; 95% CI = 1.06, 1.25) and postseason injuries (IRR = 2.05; 95% CI = 1.65, 2.55). Preseason and regular season injury rates were comparable between 2015–2016 and 2017–2018, although preseason rates increased slightly between 2017–2018 and 2018–2019, and regular season rates decreased (Figure B). Postseason injury rates remained relatively stable between 2014–2015 and 2017–2018, with an increase noted in the last year of the study period (Figure B).

Time Loss

Under half (41.1%) of all reported injuries resulted in TL of ≥1 day (TL was not reported in ∼21% of all reported injuries). TL injuries accounted for comparable proportions of reported competition (41.8%) and practice (40.4%) injuries. Rates of competition-related TL injuries increased between 2014–2015 and 2016–2017 and decreased steadily thereafter (Figure C). A comparable pattern was noted when examining temporal trends of practice-related TL injury rates as well (Figure C).

Injury Characteristics

Thigh injuries (16.6%) and ankle injuries (15.0%) accounted for the largest proportions of all injuries reported during the study period. Knee injuries and hip/groin injuries

Table 2. Reported and National Estimates of Injuries, AEs, and Rates per 1000 AEs by Season Segment Across Divisions[a]

	Number AEs Rate per 1000 AEs (95% CI)					
	Preseason		Regular Season		Post Season	
Division	Reported	National Estimate	Reported	National Estimate	Reported	National Estimate
I	181	3738	613	12 681	46	877
	21 459	458 487	74 881	1 720 906	10 267	233 650
	8.43 (7.21, 9.66)	8.15 (6.92, 9.38)	8.19 (7.54, 8.83)	7.37 (6.72, 8.02)	4.48 (3.19, 5.78)	3.75 (2.46, 5.05)
II	282	7011	584	15 921	17	260
	28 085	655 592	74 585	1 671 746	3124	65 800
	10.04 (8.87, 11.21)	10.69 (9.52, 11.87)	7.83 (7.19, 8.47)	9.52 (8.89, 10.16)	5.44 (2.85, 8.03)	3.95 (1.36, 6.54)
III	293	12 591	777	32 330	28	1451
	28 628	1 096 621	84 731	3 287 603	5918	296 239
	10.23 (9.06, 11.41)	11.48 (10.31, 12.65)	9.17 (8.53, 9.81)	9.83 (9.19, 10.48)	4.73 (2.98, 6.48)	4.90 (3.15, 6.65)
Overall	756	23 339	1974	60 931	91	2588
	78 172	2 210 700	234 198	6 680 255	19 309	595 690
	9.67 (8.98, 10.36)	10.56 (9.87, 11.25)	8.43 (8.06, 8.80)	9.12 (8.75, 9.49)	4.71 (3.74, 5.68)	4.34 (3.38, 5.31)

Abbreviation: AEs, athlete-exposures.

[a] Data presented in the order of reported number, followed by athlete exposures (AEs), estimated injury rates, and associated 95% Confidence Intervals (CIs) for each cross-tabulation of division and season segments. Data pooled association-wide are presented overall, and separately for preseason, regular season, and postseason National estimates were produced using sampling weights estimated on the basis of sport, division, and year. All CIs were constructed using variance estimates calculated on the basis of reported data. A reportable injury was one that occurred due to participation in an organized intercollegiate practice or competition, and required medical attention by a team Certified Athletic Trainer or physician (regardless of time loss). Only scheduled team practices and competitions were retained in this analysis.

were also common in both competitions and practices (Table 3). Notably, head/face injuries accounted for larger proportions of competition injuries (13.0%) than practice injuries (5.7%). Over one-third of all reported injuries were attributable to player contact mechanisms (35.3%), and a larger proportion of competition injuries (46.5%) than practice injuries (24.9%) was resultant of player contact. Noncontact injuries also accounted for a notable proportion (27.1%) of all reported injuries. In contrast to player contact injuries, a larger proportion of practice-related injuries (30.8%) than competition-related injuries (23.1%) were attributable to this mechanism.

Overall, most men's soccer injuries reported during the 2014–2015 to 2018–2019 athletic seasons were sprains (21.5%), strains (21.8%), and contusions (18.7%). Although sprains accounted for comparable proportions of practice (21.5%) and competition (21.4%) injuries, a larger proportion of practice-related injuries (23.7%) than competition-related injuries (19.9%) were strains. The most commonly reported injuries during the study period were partial or complete lateral ligament complex tears (ankle sprains) (9.2%), hamstring tears (7.0%), and concussions (5.2%). Rates of lateral ligament complex tears remained relatively stable throughout the study period, whereas rates of hamstring tears decreased (particularly between 2016–2017 and 2018–2019), and rates of concussions increased overall (Figure D).

Injuries by Soccer-Specific Activities and Playing Positions

Most injuries in men's soccer during the 2014–2015 to 2018–2019 athletic seasons occurred during general play (31.6%). Running (11.5%) and defending (10.9%) also accounted for notable proportions of all reported injuries. Although comparable proportions of competition (30.6%) and practice (32.5%) injuries occurred during general play, a markedly larger proportion of competition injuries (14.4%) than practice injuries (7.7%) was attributable to defending. Conversely, running accounted for a slightly larger proportion of practice injuries (13.5%) than competition injuries (9.4%). Midfielders accounted for the largest proportion of injured soccer players captured during the study period (Table 4).

SUMMARY

Here, we aimed to describe the epidemiology of soccer-related injuries among NCAA men's soccer players during the 2014–2015 to 2018–2019 athletic seasons. Across the study period, the competition injury rate was higher than the practice injury rate. The practice and competition injury rates observed in this study are generally comparable to those reported in previous studies of NCAA men's soccer-related injuries.[2,7,8] Competition injury rates appeared to be on a downward trajectory following 2015–2016 and should be closely monitored following 2018–2019 to identify if this trend is maintained. Furthermore, the injury rate in preseason was higher than that in regular and postseasons, and preseason injury rates typically centered around the same value across the study period. Previous researchers have also shown higher preseason injury rates than regular and postseason rates.[2,7] Given the historical evidence in conjunction with the results of this study, preseason injury risk may warrant special attention in this population. Performance and conditioning assessments used by coaching staff during preseason may be considered as particular areas for monitoring and assessment, as nuanced preseason training and primary prevention of preseason injuries have been previously discussed to be protective against injury risk during subsequent phases of the season.[10,11] In doing so, it is important to consider the challenges associated with

Table 3. Distribution of Injuries by Body Part, Mechanism, and Injury Diagnosis; Stratified by Event Type[a]

	Overall, (%)		Competitions, (%)		Practices, (%)	
	Injuries Reported	National Estimate	Injuries Reported	National Estimate	Injuries Reported	National Estimate
Injury site						
Head/face	260 (9.22)	7895 (9.09)	177 (13.03)	5552 (13.76)	83 (5.67)	2343 (5.04)
Neck	17 (0.60)	385 (0.44)	10 (0.74)	256 (0.63)	7 (0.48)	129 (0.28)
Shoulder	99 (3.51)	3015 (3.47)	51 (3.76)	1503 (3.73)	48 (3.28)	1512 (3.25)
Arm/elbow	35 (1.24)	908 (1.05)	24 (1.77)	576 (1.43)	11 (0.75)	332 (0.71)
Hand/wrist	112 (3.97)	2829 (3.26)	60 (4.42)	1124 (2.79)	52 (3.55)	1705 (3.67)
Trunk	174 (6.17)	5457 (6.28)	66 (4.86)	2027 (5.02)	108 (7.38)	3430 (7.37)
Hip/groin	340 (12.05)	10 000 (11.51)	143 (10.53)	4323 (10.72)	197 (13.47)	5677 (12.20)
Thigh	469 (16.63)	14 708 (16.93)	217 (15.98)	6323 (15.67)	252 (17.22)	8385 (18.03)
Knee	368 (13.05)	10 524 (12.12)	173 (12.74)	4908 (12.17)	195 (13.33)	5616 (12.07)
Lower leg	249 (8.83)	8944 (10.30)	112 (8.25)	3593 (8.91)	137 (9.36)	5351 (11.50)
Ankle	424 (15.03)	13 188 (15.18)	211 (15.54)	6408 (15.88)	213 (14.56)	6780 (14.58)
Foot	243 (8.61)	7889 (9.08)	105 (7.73)	3452 (8.56)	138 (9.43)	4438 (9.54)
Other	31 (1.10)	1118 (1.29)	9 (0.66)	301 (0.75)	22 (1.50)	817 (1.76)
Mechanism						
Player contact	996 (35.31)	30 579 (35.21)	632 (46.54)	19 374 (48.02)	364 (24.88)	11 205 (24.09)
Surface contact	357 (12.66)	10 298 (11.86)	181 (13.33)	4991 (12.37)	176 (12.03)	5307 (11.41)
Ball contact	181 (6.42)	5649 (6.50)	66 (4.86)	2102 (5.21)	115 (7.86)	3548 (7.63)
Other contact	18 (0.64)	349 (0.40)	8 (0.59)	124 (0.31)	10 (0.68)	225 (0.48)
Noncontact	764 (27.08)	25 139 (28.94)	314 (23.12)	9967 (24.70)	450 (30.76)	15 172 (32.62)
Overuse	333 (11.80)	10 407 (11.98)	81 (5.96)	1937 (4.80)	252 (17.22)	8470 (18.21)
Other/unknown	172 (6.10)	4437 (5.11)	76 (5.60)	1850 (4.59)	96 (6.56)	2587 (5.56)
Diagnosis						
Abrasion/laceration	59 (2.09)	1901 (2.19)	41 (3.02)	1483 (3.68)	18 (1.23)	418 (0.90)
Concussion	147 (5.21)	3957 (4.56)	98 (7.22)	2548 (6.32)	49 (3.35)	1409 (3.03)
Contusion	528 (18.72)	17 026 (19.60)	333 (24.52)	10 485 (25.99)	195 (13.33)	6541 (14.06)
Dislocation/subluxation	51 (1.81)	1339 (1.54)	26 (1.91)	685 (1.70)	25 (1.71)	654 (1.41)
Fracture	85 (3.01)	2022 (2.33)	58 (4.27)	1272 (3.15)	27 (1.85)	750 (1.61)
Illness/infection	11 (0.39)	490 (0.56)	3 (0.22)	70 (0.17)	8 (0.55)	420 (0.90)
Inflammatory condition	206 (7.30)	6800 (7.83)	47 (3.46)	1399 (3.47)	159 (10.87)	5401 (11.61)
Spasm	211 (7.48)	6098 (7.02)	79 (5.82)	2748 (6.81)	132 (9.02)	3349 (7.20)
Sprain	605 (21.45)	18 787 (21.63)	290 (21.35)	8685 (21.53)	315 (21.53)	10 102 (21.72)
Strain	616 (21.84)	20 049 (23.08)	270 (19.88)	8011 (19.86)	346 (23.65)	12 038 (25.88)
Other	302 (10.71)	8388 (9.66)	113 (8.32)	2957 (7.33)	189 (12.92)	5431 (11.68)

[a] Data presented in the order of reported number, followed by the proportion of all injuries attributable to a given category. Data pooled across event types are presented overall, and separately for practices and competitions. National estimates were produced using sampling weights estimated on the basis of sport, division, and year A reportable injury was one that occurred due to participation in an organized intercollegiate practice or competition, and required medical attention by a team Certified Athletic Trainer or physician (regardless of time loss).Only scheduled team practices and competitions were retained in this analysis.

the measurement of at-risk exposure time, which has been previously discussed with regard to sports injury surveillance[12,13] and may have naturally affected the injury rates estimated in this study. The inherently fluid nature of the sport makes it particularly challenging to precisely represent at-risk exposure time in soccer using AEs. In targeted, small-scale studies of this population, future researchers may consider alternative methods of capturing at-risk exposure time (for example, by leveraging wearable technology) to better estimate injury risk in a particular period of the season.

The most common injury diagnoses reported in NCAA men's soccer during the 2014–2015 to 2018–2019 athletic seasons were sprains, strains, and contusions. Although our findings are consistent with results observed in previous studies of this population,[2,7] the most frequently reported specific injuries during this time period were lateral ligament complex tears (ankle sprains), hamstring tears, and concussions. These injury incidence trajectories were markedly different over the study period. Although the nature of surveillance-based studies and the type of analyses conducted in this study preclude etiological inferences from being drawn based on the observed results, these results are important for identifying meaningful inflection points (or lack thereof) in injury incidence. For instance, the decreasing rates of hamstring tears following 2016–2017 are notable and warrant further attention. It may be reasonable to juxtapose these rates to the growing traction of workload monitoring systems during this time period—affording researchers and practitioners the capacity to identify specific "high risk" movements and craft prevention strategies targeting such movements.[14] Strategies that were widely adopted to reduce the incidence of muscular injuries may provide a meaningful blueprint for crafting further injury prevention strategies. It is also important to continue monitoring the incidence trajectory of hamstring tears given that the aforementioned decrease was observed only for the final 2 years of this study period. In contrast with rates of hamstring tears, rates of lateral ligament complex tears centered around the same value throughout the study period. Previous researchers have also shown that ankle sprains are among the most common injuries observed in this population.[2,7] Some ankle injury prevention strategies (both prophylactic support-based and

Table 4. Distribution of Injuries by Injury Activity and Playing Position; Stratified by Event Type[a]

	Overall, (%)		Competitions, (%)		Practices, (%)	
	Injuries Reported	National Estimate	Injuries Reported	Injuries Reported	National Estimate	Injuries Reported
Activity						
On the ball	48 (1.70)	2057 (2.37)	28 (2.06)	1278 (3.17)	20 (1.37)	778 (1.67)
Blocking shot	77 (2.73)	2918 (3.36)	31 (2.28)	1292 (3.20)	46 (3.14)	1626 (3.50)
Conditioning	54 (1.91)	2377 (2.74)	2 (0.15)	140 (0.35)	52 (3.55)	2237 (4.81)
Set pieces	45 (1.60)	1383 (1.59)	23 (1.69)	642 (1.59)	22 (1.50)	741 (1.59)
Defending	308 (10.92)	9862 (11.35)	195 (14.36)	5494 (13.62)	113 (7.72)	4368 (9.39)
General play	892 (31.62)	28 242 (32.51)	416 (30.63)	12 018 (29.79)	476 (32.54)	16 223 (34.88)
Goalkeeping	145 (5.14)	4557 (5.25)	59 (4.34)	2257 (5.59)	86 (5.88)	2301 (4.95)
Heading	143 (5.07)	4569 (5.26)	104 (7.66)	3179 (7.88)	39 (2.67)	1390 (2.99)
Loose ball	90 (3.19)	2678 (3.08)	50 (3.68)	1452 (3.60)	40 (2.73)	1226 (2.64)
Passing	78 (2.76)	2260 (2.60)	44 (3.24)	1363 (3.38)	34 (2.32)	897 (1.93)
Receiving	44 (1.56)	1724 (1.98)	17 (1.25)	738 (1.83)	27 (1.85)	986 (2.12)
Running	324 (11.49)	9594 (11.05)	127 (9.35)	3685 (9.13)	197 (13.47)	5909 (12.70)
Finishing	108 (3.83)	2553 (2.94)	31 (2.28)	726 (1.80)	77 (5.26)	1827 (3.93)
Slide tackling	147 (5.21)	4507 (5.19)	100 (7.36)	3057 (7.58)	47 (3.21)	1450 (3.12)
Other/unknown	318 (11.27)	7578 (8.72)	131 (9.65)	3022 (7.49)	187 (12.78)	4557 (9.80)
Position						
Goalkeeper	263 (9.32)	8610 (9.91)	92 (6.77)	3131 (7.76)	171 (11.69)	5479 (11.78)
Defender	815 (28.89)	24 958 (28.73)	414 (30.49)	12 074 (29.93)	401 (27.41)	12 884 (27.70)
Midfielder	944 (33.46)	29 421 (33.87)	473 (34.83)	13 932 (34.53)	471 (32.19)	15 489 (33.30)
Forward/striker	646 (22.90)	19 819 (22.82)	324 (23.86)	9750 (24.17)	322 (22.01)	10 069 (21.65)
Other/unknown	153 (5.42)	4051 (4.66)	55 (4.05)	1459 (3.62)	98 (6.70)	2593 (5.57)

[a] Data presented in the order of reported number, followed by the proportion of all injuries attributable to a given category. Data pooled across event types are presented overall, and separately for practices and competitions. National estimates were produced using sampling weights estimated on the basis of sport, division, and year. A reportable injury was one that occurred due to participation in an organized intercollegiate practice or competition, and required medical attention by a team Certified Athletic Trainer or physician (regardless of time loss). Only scheduled team practices and competitions were retained in this analysis.

exercise-based) have been previously shown to be efficacious in the primary prevention of ankle sprains,[15–19] and it may be relevant to consider the wider applicability of such prevention strategies in this population in the future. However, further studies of lateral ligament complex tears (ankle sprains) in this population are needed to inform such efforts. Indeed, it is important to acknowledge that the external validity of these findings may be potentially limited due to the nature of ISP participation. Although ISP participation among men's soccer programs has continued to grow over time (reflecting the success of recently used recruitment strategies such as support and communication from the NCAA Sport Science Institute), participation varies across divisions and is typically lowest among Division III men's soccer programs. Differential participation across divisions may be especially salient given the potential variability in the competitive season structure and access to sports medicine resources across divisions. Therefore, as mentioned above, further work in specific factions of this population will be critical for directing effective ankle sprain prevention efforts.

Continued monitoring of NCAA men's soccer injuries is important and will yield meaningful insight into the evolving burden of injury in this population. Routine injury surveillance should also involve monitoring the trajectory of the most commonly reported specific injuries. As mentioned above, although surveillance-based studies are important for identifying emerging temporal patterns, researchers need to conduct targeted studies to reconcile the observed results and understand the etiology of the observed epidemiological patterns.

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