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Athletic Training Services Trends Between Public and Private High Schools: A 5-Year Retrospective Analysis

Donghyeon Kim, MS, ATC*; Amir Defino, MS, LAT, ATC†; Christianne M. Eason, PhD, ATC*; Douglas J. Casa, PhD, FNAK, FNATA, FACSM, LAT, ATC*; Chaeyeon Yoo, MS‡; Ayami Yoshihara, PhD, ATC*; Kelly Coleman, PhD, LAT, ATC§; Erica M. Filep, PhD, LAT, ATC‖; Robert A. Huggins, PhD, LAT, ATC*

*Department of Kinesiology, Korey Stringer Institute, University of Connecticut, Storrs; †Athletics, Mount Saint Joseph High School, Baltimore, MD; ‡Department of Statistics, University of Connecticut, Storrs; §Department of Health and Movement Sciences, Southern Connecticut State University, New Haven; ‖Department of Kinesiology and Military Science, Texas A&M University-Corpus Christi

Context: Access to athletic trainers (ATs) in high schools is crucial for student-athlete (SA) safety. Although most high schools in the United States have access to athletic training services (ATS), no authors have longitudinally compared ATS trends between public (PUB) and private (PVT) school sectors.

Objective: To compare ATS trends between PUB and PVT schools from the 2018–2019 through 2022–2023 academic years.

Design: Longitudinal cross-sectional study.

Setting: Online survey.

Main Outcome Measure(s): High school responses to the Athletic Training Locations and Services survey from all 50 US states and the District of Columbia were queried from the 2018–2019 to 2022–2023 academic years. Average numbers of SAs (*SAs*), sports (*Sports*), full-time ATs (*FtATs*), part-time ATs (*PtATs*), and the sum of full-time and part-time ATs (*ATs*), along with the average weekly contracted hours (*CHrs*) and actual hours (*AHrs*) per school, and ratios of *SAs : ATs*, *Sports : ATs*, *CHrs : SAs*, *CHrs : Sports*, *AHrs : SAs*, and *AHrs : Sports* were examined to track ATS trends over 5 years and compare PUB vs PVT schools.

Results: Public schools had higher *SAs* and *Sports* vs PVT schools (both $P < .001$). Private schools had higher *ATs*, *CHrs*, and *AHrs* than PUB schools (all $P < .050$). Ratios of *SAs : ATs* and *Sports : ATs* were higher in PUB schools, whereas *CHrs : SAs*, *AHrs : SAs*, *CHrs : Sports*, and *AHrs : Sports* were higher in PVT schools (all $P < .050$). From 2018–2019 to 2022–2023, PUB schools increased *Sports* and *Sports : ATs*; PVT schools increased *SAs*, *Sports*, *ATs*, and *SAs : ATs* (all $P < .050$). Over the years, PUB schools decreased *CHrs : Sports* and *AHrs : Sports*; PVT decreased *CHrs : SAs*, *AHrs : SAs*, *CHrs : Sports*, and *AHrs : Sports*. *FtATs* increased in both sectors, whereas *PtATs* decreased in only PVT schools.

Conclusions: Overall, ATS were more extensively provided in PVT schools, based on *ATs* and ATS hours. Both sectors increased *FtATs*, which is encouraging. However, as *SAs* and *Sports* increased, ATS provided per SA and sport declined.

Key Words: sports, athletes, student health services, safety

Key Points

- Both public and private school sectors experienced changes in athletic training services trends over 5 years.
- Full-time athletic trainers increased and part-time athletic trainers decreased in both sectors.
- Public schools had more student-athletes and sports per athletic trainer, whereas private schools provided more athletic training service hours per student-athlete and sport.

Sports participation of student-athletes (SAs) in high schools (HSs) has steadily increased over the past 50 years.[1] Although a temporary decrease occurred during the last 5 years due to COVID-19, data suggest a rapid rebound in the most recent year, with over 7 800 000 HS SAs participating in sports in 2022–2023.[1] Although physical activity in adolescents improves physical and mental health, enhances social interactions, and promotes cognitive self-regulation,[2] sports participation inevitably involves injury risk.[3] About 40% of adolescent athletes experience sports-related injuries, with higher rates among those aged 14 to 17.[4] Moreover, catastrophic injuries and sudden death among HS SAs have been consistently reported. According to a 40-year survey by the National Center for Catastrophic Sport Injury Research, HS SAs have accounted for 79% of all college and HS catastrophic injuries.[5] Additionally, from 2007 to 2015, 45 sudden deaths in American youth sports were reported, with a mean age of 13 and an incidence rate of 1.83 deaths per 10 million athlete-years.[6]

In 1999, the American Medical Association recommended that certified athletic trainers (ATs) be on-site at all HSs with athletics to ensure early recognition and immediate treatment of sports-related injuries.[7] Athletic trainers are highly qualified health care professionals who deliver various services, including injury prevention, emergency care, and rehabilitation.[8] The National Athletic Trainers' Association (NATA), the Board of Certification, and the Commission on Accreditation of Athletic Training Education emphasize the need for on-site ATs to prevent and manage sudden deaths during practices and games,[9,10] with trained ATs leading to 83% survival rates for sudden cardiac arrest in the HS setting.[11]

Previous authors have investigated AT access in HSs.[12–15] Authors analyzing data from 2015–2016 to 2017–2018 reported that 66% of US HSs with interscholastic athletic programs provided athletic training services (ATS),[15] a 35% increase from 1998.[7] Despite this increase, differences in the percentage of schools receiving ATS were reported between public (PUB) and private (PVT) HSs. Additionally, when ATS were categorized by weekly service hours—full-time ATS ($\geq$30 hours per week) and part-time ATS ($<$30 hours per week)—sector-based differences were also noted. Pike et al[14] reported that a higher percentage of PUB schools received ATS compared with PVT schools, with Huggins et al[15] supporting this by reporting 14% greater access to ATS and 4% more access to full-time ATS in PUB schools than in PVT schools.

A comprehensive analysis of ATS between PUB and PVT HSs is essential for identifying gaps in health care services that may place SAs in 1 school sector at a higher risk than those in the other. Although previous authors have addressed ATS accessibility between HS sectors, there is still a lack of knowledge on how PUB and PVT schools differ in the overall extent and characteristics of ATS, such as the average number of ATs (full-time or part-time), ATS hours provision, and ATS allocation per SA and per sport. Furthermore, no authors have tracked how ATS trends have changed longitudinally.

Therefore, the primary objectives of our study were (1) to examine ATS trends in PUB and PVT schools over a 5-year period and (2) to compare the extent and characteristics of ATS provision between school sectors using detailed statistical analysis. By analyzing ATS from diverse perspectives using novel variables, we aimed to provide valuable evidence for future research on ATS, determine the current standard of care related to ATS, and understand the trends in health care of both PUB and PVT HSs.

METHODS

Among all PUB and PVT HSs with interscholastic athletics for grades 9 to 12 across all US states and the District of Columbia, schools that provided ATS and submitted Athletic Training Locations and Services (ATLAS) surveys were examined. The ATLAS project, an initiative launched by the Korey Stringer Institute in collaboration with NATA, systemically collects data on ATS provided in US HSs from surveys submitted by ATs employed at these schools. The detailed methodology is outlined in Huggins et al.[15] To represent the population more accurately, any state that had a survey response rate $<$20% in at least 1 academic year (AY) between 2018–2019 and 2022–2023 was excluded from all analyses across the entire study period.

Table 1. Absolute and Calculated Variables Representing Per-School Average

Variable	Abbreviation
Absolute variables	
Number of student-athletes	*SAs*
Number of sports	*Sports*
Number of athletic trainers	*ATs*
Number of full-time athletic trainers	*FtATs*
Number of part-time athletic trainers	*PtATs*
Weekly contracted ATS hours	*CHrs*
Weekly actual ATS hours	*AHrs*
Calculated variables	
Ratio of *SAs* to *ATs*	*SAs : ATs*
Ratio of *Sports* to *ATs*	*Sports : ATs*
Ratio of *CHrs* to *SAs*	*CHrs : ATs*
Ratio of *AHrs* to *SAs*	*AHrs : ATs*
Ratio of *CHrs* to *Sports*	*CHrs : Sports*
Ratio of *AHrs* to *Sports*	*AHrs : Sports*

Abbreviation: ATS, athletic training services.

Survey responses on the number of SAs, sports, ATs, and weekly contracted and actual ATS hours at each school were collected and analyzed. AT employment status was categorized based on contracted hours: full-time for 30 or more hours per week, part-time for less. Additionally, SAs and sports per AT and average weekly contracted and actual ATS hours per SA and per sport were calculated to determine the extent of ATS provided per SA and per sport. Consequently, 13 variables (7 absolute and 6 ratios) were constructed in this study, with details and definitions provided in Table 1. Athletic training services trends were analyzed by tracking year-to-year changes in all variables over 5 AYs (2018–2019 to 2022–2023) for PUB and PVT schools, comparing the 2 school types. The ATLAS survey did not include questions on ATs' contracted and actual hours before the 2019–2020 AY. Therefore, analyses of weekly contracted ATS hours (*CHrs*), weekly actual ATS hours (*AHrs*), *CHrs : ATs*, *AHrs : ATs*, *CHrs : Sports*, and *AHrs : Sports* were conducted over a 4-year period from 2019–2020 to 2022–2023, rather than a 5-year period.

Statistical Analysis

A robust linear mixed-effects model was used to analyze the response variables.[16] Missing or unbalanced data, including states excluded due to low response rates, were effectively handled by the robust linear mixed-effects model to provide valid estimates. In this study, the model's random effects accounted for state variability and down-weighted outliers, and fixed effects included school type, year, and their interaction. A threshold of $P < .05$ was applied to evaluate group, year, and interaction effects as well as pairwise year-to-year differences across all 13 variables. All statistical analyses were performed using the robust package in R statistical software (version 4.4.1; R Foundation for Statistical Computing) within RStudio Environment (version 2023.09.0; Posit, PBC).

RESULTS

The numbers of schools providing ATS and response rates for PUB, PVT, and combined HSs for each AY from 2018–2019 to 2022–2023 are shown in Table 2. Schools in

Table 2. Response Rates and Total Schools Providing ATS by Academic Year

Academic Year	Total Schools Providing ATS[a]	Combined Response Rate (PUB + PVT), % (No.)	PUB Response Rate, % (No.)	PVT Response Rate, % (No.)
2018–2019	11 303	57 (7198)	57 (6024)	56 (1174)
2019–2020	13 472	58 (8514)	68 (7113)	67 (1401)
2020–2021	11 303	63 (6605)	63 (5556)	61 (1049)
2021–2022	12 008	67 (7402)	67 (6246)	65 (1156)
2022–2023	11 109	66 (6877)	67 (5814)	64 (1063)

Abbreviations: ATS, athletic training services; PUB, public schools; PVT, private schools.
[a] Total based on the known calculated number of schools from the Athletic Training Locations and Services database.

Alaska were excluded from both PUB and PVT school analyses, and schools in Alabama, Mississippi, and West Virginia were excluded from the PVT school analyses due to low response rates (<20%). Consequently, the study included HSs from 49 states and the District of Columbia for PUB HSs and 46 states and the District of Columbia for PVT HSs. The 4- or 5-year mean values and 95% CIs for all 13 variables by school sector are presented in Table 3, with significant differences between groups and year-to-year changes within each sector indicated.

SAs and *Sports*

Figure 1 illustrates 5-year trends in *SAs* and *Sports* for PUB and PVT schools. Significant group × time interactions were observed for *SAs* from 2019–2020 to 2022–2023 ($P = .041$), 2020–2021 to 2022–2023 ($P = .001$), and 2021–2022 to 2022–2023 ($P = .044$).

Group Comparison of PUB vs PVT Schools. Overall, PUB schools had 44.21% more *SAs* (values presented as mean difference [MD]; 95% CI; *P* value) (MD = 126.19; 95% CI = 101.14, 151.20; $P < .001$) and 7.13% more *Sports* (MD = 1.22; 95% CI = 0.74, 1.70; $P < .001$) than PVT schools. Yearly differences revealed that PUB schools had consistently more *SAs* and *Sports* than PVT schools. Public schools had more *SAs* by 46.10% (MD = 127.46) in 2018–2019, 46.87% (MD = 129.15) in 2019–2020, 47.68% (MD = 135.48) in 2020–2021, 44.98% (MD = 128.96) in 2021–2022, and 36.43% (MD = 109.92) in 2022–2023 than PVT schools (all $P < .001$). Similarly, PUB schools had more *Sports* by 7.38% (MD = 1.23) in 2018–2019, 8.40% (MD = 1.40) in 2019–2020, 7.65% (MD = 1.32) in 2020–2021, 6.16% (MD = 1.07) in 2021–2022, and 6.18% (MD = 1.10) in 2022–2023 (all $P < .001$).

Longitudinal Trends: Comparison Between 2018–2019 and 2022–2023. *SAs* remained stable in PUB schools ($MD_{(2022–2023–2018–2019)} = 7.66$; 95% CI = −5.00, 20.31; $P = .465$), whereas PVT schools increased by 9.11% ($MD_{(2022–2023–2018–2019)} = 25.20$; 95% CI = 12.00, 38.39; $P < .001$). Sports increased in both sectors by 5.18% in PUB ($MD_{(2022–2023–2018–2019)} = 0.93$; 95% CI = 0.51, 1.34; $P < .001$) and 6.36% in PVT ($MD_{(2022–2023–2018–2019)} = 1.06$; 95% CI = 0.63, 1.49; $P < .001$) schools.

ATs

Figure 2 presents an overview of 5-year trends in *ATs*, full-time ATs (*FtATs*), *and* part-time ATs (*PtATs*) by school type.

Group Comparison of PUB vs PVT Schools. Overall, PVT schools had 7.49% more *ATs* than PUB schools (MD = 0.09; 95% CI = 0.01, 0.18; $P = .027$), with yearly differences of 7.63% (MD = 0.09) in 2018–2019, 7.39% (MD = 0.09) in 2019–2020, 6.85% (MD = 0.09) in 2020–2021, 7.89% (MD = 0.10) in 2021–2022, and 7.71% (MD = 0.10) in 2022–2023 (all $P < .050$). No significant changes were observed between school sectors for *FtATs* ($MD_{(PVT–PUB)} = 0.07$; 95% CI = −0.01, 0.16; $P = .085$) or *PtATs* ($MD_{(PVT–PUB)} = 0.02$; 95% CI = −0.03, 0.06; $P = .426$).

Longitudinal Trends: 5-Year Comparison Between 2018–2019 and 2022–2023. *ATs* remained unchanged in PUB schools (MD = 0.03; 95% CI = 0.00, 0.06; $P = .051$), whereas PVT schools experienced a 2.47% increase (MD = 0.03; 95% CI = 0.00, 0.06; $P = .031$). *FtATs* increased in both sectors by 7.88% in PUB schools (MD = 0.06; 95% CI = 0.02, 0.10; $P = .001$) and 7.11% in PVT schools (MD = 0.06; 95% CI = 0.02, 0.11; $P = .002$). Part-time ATs decreased by 11.27% in PUB schools (MD = −0.05; 95% CI = −0.10, −0.00; $P = .022$), whereas they remained stable in PVT schools (MD = −0.02; 95% CI = −0.03, 0.07; $P = .828$).

ATS Hours

Figure 3 illustrates the 4-year trends in CHrs and AHrs (2019–2020 to 2022–2023) by school type.

Group Comparison of PUB Versus PVT Schools Over the Observed Period. Overall, PVT schools had 10.54% greater CHrs (MD = 3.92; 95% CI = 0.51, 7.33; $P = .024$) and 10.00% (MD = 3.98) greater AHrs than PUB schools. Yearly differences revealed that PUB schools had greater CHrs by 10.62% (MD = 3.96) in 2019–2020, 10.33% (MD = 3.83) in 2020–2021, 10.69% (MD = 3.96) in 2021–2022, and 10.46% (MD = 3.92) in 2022–2023, whereas *AHrs* were 10.54% (MD = 4.22) higher in 2019–2020, 9.90% (MD = 3.96) in 2021–2022, and 10.42% (MD = 4.15) in 2022–2023 (all $P < .050$).

Longitudinal Trends: Comparison Between 2019–2020 and 2022–2023. No significant changes were observed in either *CHrs* or *AHrs* for both PUB (*CHrs*: MD = 0.25; 95% CI = −0.58, 1.09; $P = .868$; *AHrs*: MD = −0.20; 95% CI = −1.08, 0.67; $P = .931$) and PVT schools (*CHrs*: MD = 0.22; 95% CI = −0.65, 1.09; $P = .919$; *AHrs*: MD = −0.27; 95% CI = −1.18, 0.64; $P = .869$) schools.

SAs and Sports per AT

Five-year trends in *SAs : ATs* and *Sports : ATs* ratios for PUB and PVT schools are illustrated in Figure 4. Significant group × time interactions for SAs : ATs were observed from 2020–2021 to 2022–2023 ($P = .006$) and 2021–2022 to 2022–2023 ($P = .044$).

Table 3. Five-Year Trends in Athletic Training Services by Variable and School Sector[a]

Variable	School Type	Mean (95% CI) 2018–2019	2019–2020	2020–2021	2021–2022	2022–2023
SAs, No.	PUB	**403.96 (376.82, 431.10)**	**404.68 (377.55, 431.82)**	**419.64 (392.50, 446.77)[b,c]**	**415.68 (388.54, 442.82)**	**411.62 (384.48, 438.76)**
	PVT	276.50 (248.64, 304.36)	275.54 (247.68, 303.40)	284.16 (256.30, 312.02)	286.72 (258.86, 314.58)	301.70 (273.84, 329.56)[b,c,d,e]
Sports, No.	PUB	**17.88 (17.00, 18.75)**	**18.10 (17.23, 18.98)**	**18.56 (17.68, 19.43)[b,c]**	**18.46 (17.59, 19.34)[b]**	**18.80 (17.93, 19.68)[b,c]**
	PVT	16.65 (15.77, 17.53)	16.70 (15.82, 17.58)	17.24 (16.35, 18.12)[b,c]	17.39 (16.51, 18.28)[b,c]	17.71 (16.82, 18.59)[b,c,d]
ATs, No.	PUB	1.23 (1.18, 1.29)	1.24 (1.18, 1.30)	1.26 (1.20, 1.31)	1.25 (1.19, 1.31)	1.26 (1.20, 1.32)
	PVT	**1.33 (1.27, 1.39)**	**1.33 (1.27, 1.39)**	**1.34 (1.28, 1.40)**	**1.35 (1.29, 1.41)**	**1.36 (1.30, 1.42)[b,c]**
FtATs, No.	PUB	0.79 (0.71, 0.86)	0.75 (0.67, 0.82)	0.79 (0.72, 0.87)[c]	0.81 (0.74, 0.89)[c]	0.85 (0.77, 0.92)[b,c,d]
	PVT	0.87 (0.79, 0.95)	0.82 (0.74, 0.90)[b]	0.87 (0.79, 0.94)[c]	0.88 (0.80, 0.96)[c]	0.93 (0.85, 1.01)[b,c,d,e]
PtATs, No.	PUB	0.44 (0.40, 0.49)	0.47 (0.42, 0.52)	0.44 (0.40, 0.49)	0.42 (0.37, 0.47)[c]	0.39 (0.35, 0.44)[b,c,d]
	PVT	0.44 (0.39, 0.49)	0.49 (0.44, 0.54)[b]	0.47 (0.42, 0.52)	0.46 (0.41, 0.51)	0.42 (0.37, 0.47)[c,d]
SAs : ATs, No.	PUB	**317.45 (296.76, 338.13)**	**317.10 (296.42, 337.78)**	**325.06 (304.38, 345.75)**	**322.72 (302.03, 343.40)**	**317.43 (296.74, 338.11)**
	PVT	207.08 (185.75, 228.41)	203.57 (182.24, 224.91)	207.77 (186.44, 229.10)	208.70 (187.36, 230.03)	219.67 (198.34, 241.00)[b,c,d]
Sports : ATs, No.	PUB	**14.28 (13.47, 15.10)**	**14.45 (13.63, 15.26)**	**14.72 (13.91, 15.54)[b]**	**14.62 (13.81, 15.44)**	**14.76 (13.94, 15.57)[b]**
	PVT	12.76 (11.91, 13.61)	12.60 (11.75, 13.45)	12.86 (12.01, 13.71)	12.86 (12.01, 13.71)	13.08 (12.23, 13.93)[c]
CHrs, h	PUB	NA	37.27 (34.41, 40.13)	37.12 (34.26, 39.98)	37.07 (34.21, 39.93)	37.52 (34.66, 40.38)
	PVT	NA	**41.23 (38.26, 44.20)**	**40.96 (37.98, 43.93)**	**41.04 (38.07, 44.01)**	**41.44 (38.47, 44.42)**
AHrs, h	PUB	NA	40.03 (37.03, 43.02)	39.76 (36.76, 42.75)	39.43 (36.43, 42.42)	39.82 (36.83, 42.82)
	PVT	NA	**44.25 (41.13, 47.36)**	43.39 (40.28, 46.51)	**43.33 (40.21, 46.44)[c]**	**43.97 (40.86, 47.09)**
CHrs : SAs, h	PUB	NA	0.10 (0.09, 0.11)	0.09 (0.08, 0.10)	0.09 (0.09, 0.10)	0.10 (0.09, 0.10)
	PVT	NA	**0.15 (0.14, 0.16)**	**0.14 (0.13, 0.15)[c]**	**0.14 (0.13, 0.15)**	**0.14 (0.13, 0.15)[c]**
AHrs : SAs, h	PUB	NA	0.11 (0.10, 0.12)	0.10 (0.09, 0.11)	0.10 (0.09, 0.11)[c]	0.10 (0.09, 0.11)
	PVT	NA	**0.16 (0.15, 0.17)**	**0.15 (0.14, 0.16)[c]**	**0.15 (0.14, 0.16)[c]**	**0.15 (0.14, 0.16)[c]**
CHrs : Sports, h	PUB	NA	2.11 (1.95, 2.27)	2.05 (1.89, 2.21)[c]	2.05 (1.89, 2.21)	2.04 (1.88, 2.20)[c]
	PVT	NA	**2.42 (2.26, 2.59)**	**2.35 (2.18, 2.51)[c]**	**2.34 (2.18, 2.51)[c]**	**2.30 (2.14, 2.47)[c]**
AHrs : Sports, h	PUB	NA	2.27 (2.10, 2.44)	2.19 (2.02, 2.36)[c]	2.19 (2.02, 2.36)[c]	2.16 (1.99, 2.34)[c]
	PVT	NA	**2.59 (2.41, 2.77)**	**2.47 (2.30, 2.65)[c]**	**2.46 (2.28, 2.64)[c]**	**2.43 (2.25, 2.61)[c]**

Abbreviations: *AHrs*, weekly actual athletic training service hours; *ATs*, athletic trainers; *CHrs*, weekly contracted athletic training service hours; *FtATs*, full-time *ATs*; NA, nonapplicable; PtATs, part-time *ATs*; PUB, public schools; PVT, private schools; *SAs*, student-athletes.

[a] Values rounded per school average. Bold indicates significance between sectors ($P < 0.050$); superscripts indicate significant year difference from the current value.

[b] Significantly different from 2018–2019.

[c] Significantly different from 2019–2020.

[d] Significantly different from 2020–2021.

[e] Significantly different from 2021–2022.

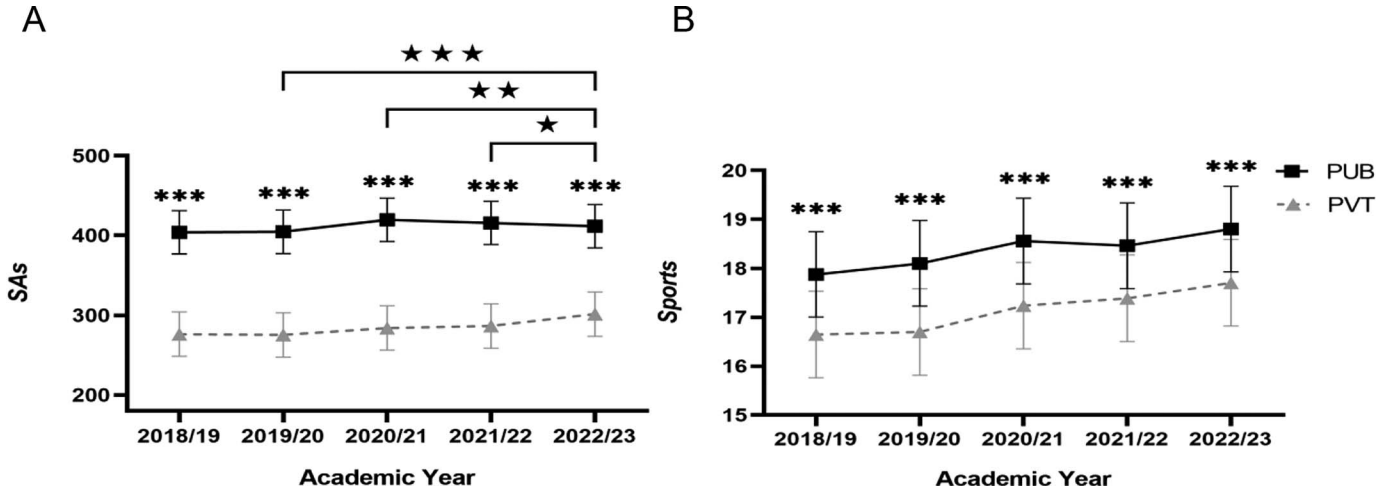

Figure 1. Average number of A, student-athletes, and B, sports per school from the 2018–2019 to 2022–2023 academic years. Data are presented as mean and 95% CI values for the variables shown. *** $P < .001$ for significance of group effects. ★, $P < .050$; ★★, $P < .010$; ★★★, $P < .001$ for group × time interaction significance. Abbreviations: PUB, public schools; PVT, private schools; *SAs*, the average number of student-athletes per school; *Sports*, the average number of sports per school.

Group Comparison of PUB Versus PVT Schools. Overall, PUB schools had a 52.93% higher SAs : ATs ratio (MD = 110.59; 95% CI = 90.50, 130.68; $P < .001$) and 11.92% higher Sports : ATs ratio (MD = 1.74; 95% CI = 0.71, 2.76; $P = .001$) than PVT schools. Yearly differences revealed that PUB schools consistently had higher values for both ratios than PVT schools. Public schools had a higher SAs : ATs ratio by 53.30% (MD = 110.37) in 2018–2019, 55.77% (MD = 113.53) in 2019–2020, 56.45% (MD = 117.29) in 2020–2021, 54.63% (MD = 114.02) in 2021–2022, and 44.50% (MD = 97.76) in 2022–2023 (all $P < .001$). The Sports : ATs ratio was also higher in PUB schools by 11.93% (MD = 1.52) in 2018–2019, 14.67% (MD = 1.85) in 2019–2020, 14.48% (MD = 1.86) in 2020–2021, 13.75% (MD = 1.77) in 2021–2022, and 12.82% (MD = 1.68) in 2022–2023 (all $P < .010$).

Longitudinal Trends: 5-Year Comparison (2018–2019 to 2022–2023). *The SAs : ATs* ratio remained unchanged in PUB schools (MD = −0.02; 95% CI = −10.83, 10.79; $P = 1.000$), whereas PVT schools experienced an increase of 6.08% (MD = 12.59; 95% CI = 1.32, 23.86; $P = .020$). The *Sports : ATs* ratio increased by 3.34% in PUB schools (MD = 0.48; 95% CI = 0.05, 0.90; $P = .019$), whereas there was no change in PVT schools (MD = 0.32; 95% CI = −0.12, 0.76; $P = .278$).

ATS Hours per SA

The 4-year trends in *CHrs : SAs* and *AHrs : SAs* for PUB and PVT schools are illustrated in Figure 5A and 5B.

Group Comparison of PUB vs PVT Schools. Overall, PVT schools had a 49.79% higher CHrs : SAs ratio (MD = 0.05; 95% CI = 0.04, 0.06; $P < .001$) and 47.57% higher AHrs : SAs ratio (MD = 0.05; 95% CI = 0.04, 0.06; $P < .001$) than PUB schools. Yearly analyses revealed that the CHrs : SAs ratio in PVT schools was consistently higher by 50.82% (MD = 0.05) in 2019–2020, 51.92% (MD = 0.05) in 2020–2021, 50.74% (MD = 0.05) in 2021–2022, and 45.99% (MD = 0.04) in 2022–2023 (all $P < .001$). The

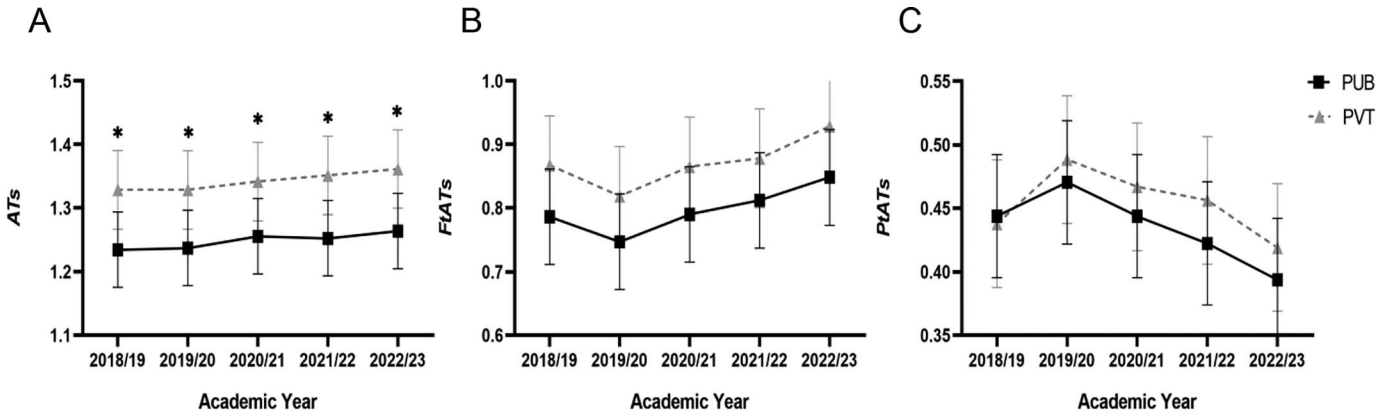

Figure 2. Changes in the average number of A, total; B, full-time; and C, part-time athletic trainers per school from the 2018–2019 to 2022–2023 academic years. Data are presented as mean and 95% CI values for the variables shown. * $P < .050$ for significance of group effects. Abbreviations: *ATs*, the average number of athletic trainers per school; *FtATs*, the average number of full-time athletic trainers per school; *PtATs*, the average number of part-time athletic trainers per school; PUB, public schools; PVT, private schools.

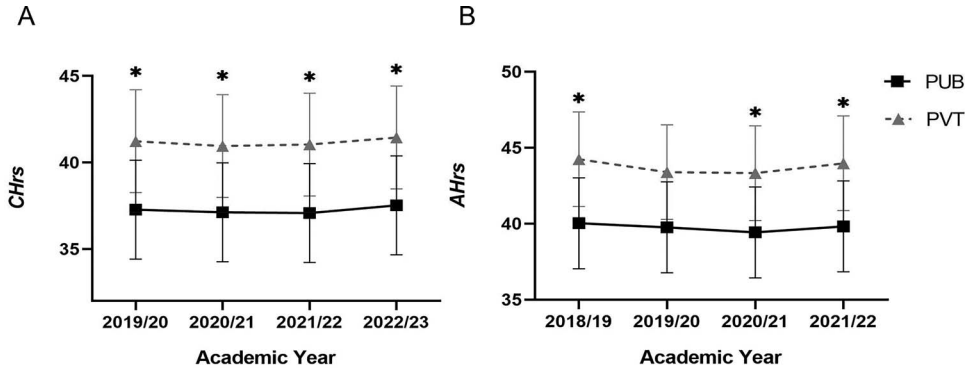

Figure 3. Changes in the average A, weekly contracted athletic training service hours per school (CHrs), and B, weekly actual athletic training service hours per school (AHrs) from the 2018–2019 to 2022–2023 academic years. Data are presented as mean and 95% CI values for the variables shown. * *P* < .050 for significance of group effects. Abbreviations: PUB, public schools; PVT, private schools.

AHrs : SAs ratio in PVT schools was also consistently higher by 48.30% (MD = 0.05) in 2019–2020, 49.12% (MD = 0.05) in 2020–2021, 47.35% (MD = 0.05) in 2021–2022, and 45.39% (MD = 0.05) in 2022–2023 (all $P < .001$).

Longitudinal Trends: Comparison Between 2019–2019 and 2022–2023. Both ratios remained unchanged in PUB schools (*CHrs : SAs*: MD = −0.00; 95% CI = −0.01, 0.00; $P = .675$; *AHrs : SAs*: MD = −0.00; 95% CI = −0.01, 0.00; $P = .050$), whereas PVT schools decreased in *CHrs : SAs* by 4.95% (MD = −0.01; 95% CI = −0.01, −0.00; $P < .001$) and in *AHrs : SAs* by 5.72% (MD = −0.01; 95% CI = −0.01, −0.00; $P < .001$).

ATS Hours per Sport

Four-year trends in *CHrs : Sports* and *AHrs : Sports* ratios for PUB and PVT schools were illustrated in Figure 5C and 5D.

Group Comparison of PUB Versus PVT Schools. Overall, PVT schools had a 14.13% higher CHrs : Sports ratio (MD = 0.29; 95% CI = 0.11, 0.47; $P = .002$) and 12.95% higher AHrs : Sports ratio (MD = 0.29; 95% CI = 0.08, 0.49; $P = .007$) than PUB schools. Yearly differences revealed that PVT schools had a consistently higher CHrs : Sports ratio by 14.98% (MD = 0.32) in 2019–2020, 14.59% (MD = 0.30) in 2020–2021, 14.00% (MD = 0.29) in 2021–2022, and 12.94% (MD = 0.26) in 2022–2023 (all $P < .010$). Similarly, PVT schools had a consistently higher AHrs : Sports ratio by 14.14% (MD = 0.32) in 2019–2020, 12.83% (MD = 0.28) in 2020–2021, 12.42% (MD = 0.27) in 2021–2022, and 12.31% (MD = 0.26) in 2022–2023 (all $P < .050$).

Longitudinal Trends: Comparison Between 2019–2020 and 2022–2023. The ratio of CHrs : Sports decreased by 3.24% in PUB schools (MD = −0.07; 95% CI = −0.13, −0.01; $P = .013$) and by 4.94% in PVT schools (MD = −0.12; 95% CI = −0.18, −0.06; $P < .001$). The AHrs : Sports ratio decreased by 4.62% in PUB schools (MD = −0.10; 95% CI = −0.17, −0.04; $P < 0.001$) and by 6.16% in PVT schools (MD = −0.16; 95% CI = −0.22, −0.10; $P < .001$).

DISCUSSION

This is the first longitudinal study to compare ATS between PUB and PVT HSs. Even among schools providing ATS, the extent and characteristics can vary, and we explored how they differ by school type. We quantified the number of ATs (sum of full-time and part-time ATs), Ft ATs, and Pt ATs, along with weekly ATS hours provided, and used 6 novel ratios for more in-depth analysis: *SAs : ATs*, *Sports : ATs*, *CHrs : SAs*, *AHrs : SAs*, *CHrs : Sports*, and *AHrs : Sports* to assess the extent of ATS coverage between

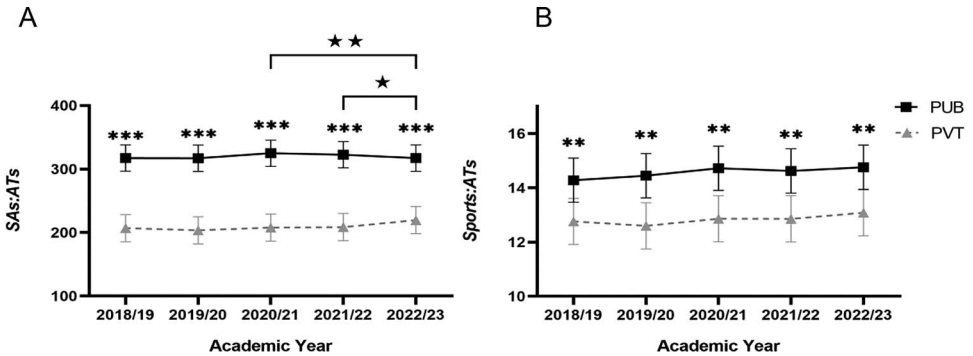

Figure 4. Five-year changes in A, the ratio of the average number of student-athletes to the average number of athletic trainers per school, and B, the ratio of the average number of sports to the average number of athletic trainers per school from the 2018–2019 to 2022–2023 academic years. Data are presented as mean and 95% CI values for the variables shown. ** *P* < .010. * *P* < .001 for significance of group effects. ★, *P* < .050; ★★, *P* < .010 for group × time interaction significance. Abbreviations: *ATs*, the average number of athletic trainers per school; PUB, public schools; PVT, private schools; *SAs*, the average number of student-athletes per school; *Sports*, the average number of sports per school.**

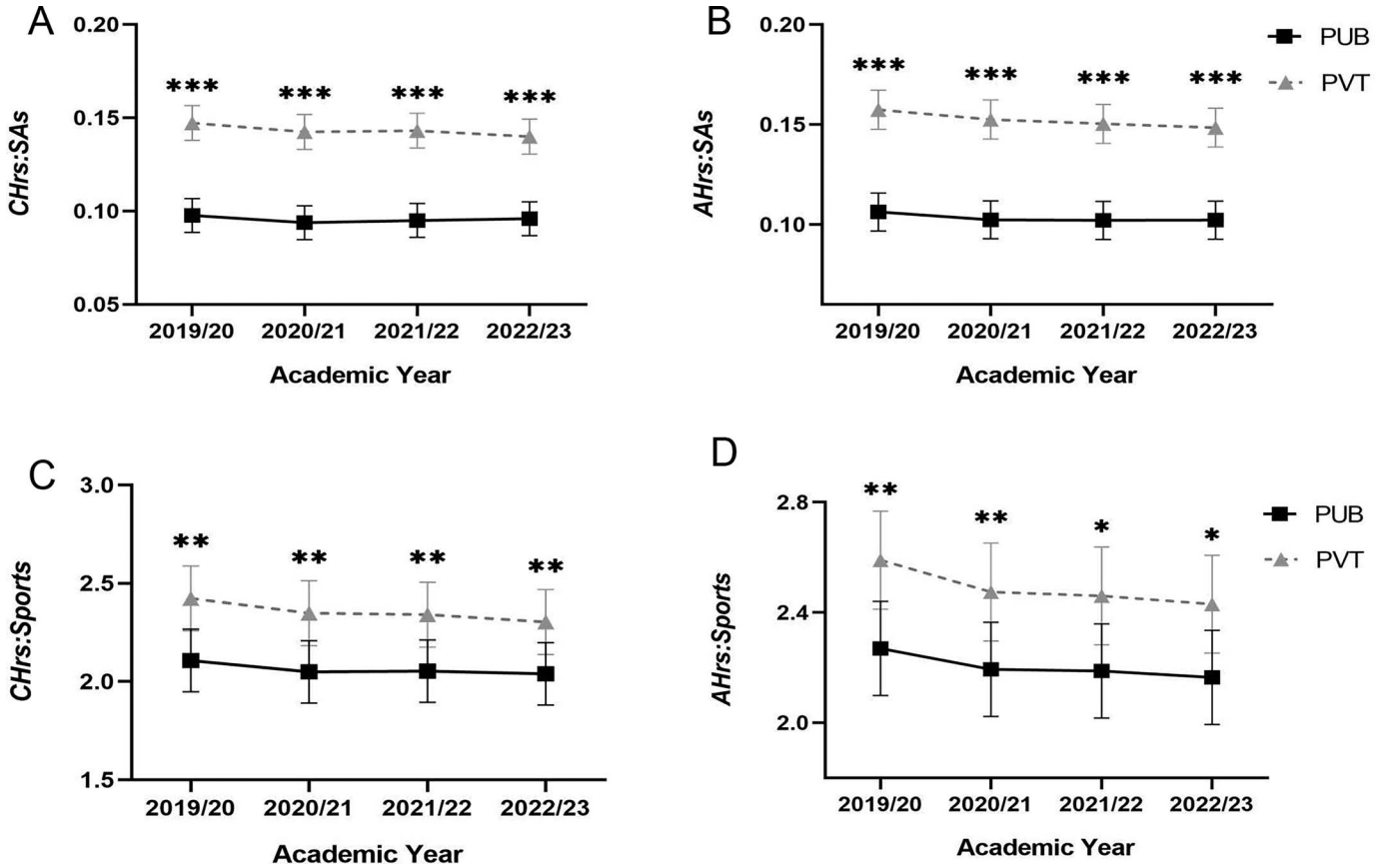

Figure 5. Four-year changes in A, the ratio of the average weekly contracted athletic training service hours per school (CHrs) to the average number of student-athletes per school; B, the average weekly actual athletic training service hours per school (AHrs) to the average number of student-athletes per school; C, the CHrs to the average number of sports per school; and D, the AHrs to the average number of sports per school from the 2019–2020 to 2022–2023 academic years. Data are presented as mean and 95% CI values for the variables shown. * *P* < .050; ** *P* < .010; * *P* < .001 for significance of group effects. Abbreviations: PUB, public schools; PVT, private schools; *SAs*, the average number of student-athletes per school; *Sports*, the average number of sports per school.**

PUB and PVT schools. This approach allowed us to investigate how many SAs and sports were allocated per AT on average and how many AT hours were allocated per SA and per sport in PUB versus PVT schools over the observed years. These data are crucial because they benchmark the current extent of ATS in the United States. Furthermore, these data will contribute to establishing and improving health care in the form of ATS in PUB and PVT schools nationwide.

ATs and Hours of ATS

Comparison Between PUB and PVT Schools. Notably, PVT schools employed a greater number of ATs per school and provided more weekly contracted and actual ATS hours compared with PUB schools. In HS settings, an AT is typically responsible for multiple sports, many within the same athletic season. This challenges the ability of the AT to provide care to several practices or games simultaneously. This also has the potential to leave some sports unattended, which is concerning, especially for sports with elevated injury risk. Our finding suggests that PVT schools may benefit from having multiple ATs present during congested practice or game periods to provide care to different sports simultaneously compared with PUB schools. An AT's presence on-site or proximal to the athletic venue is imperative for minimizing response and treatment time, especially during emergencies.[11] Furthermore, schools with multiple ATs may be able to treat SAs more effectively and efficiently, especially when managing many SAs in a limited time frame. Although having a greater number of ATs does not necessarily mean they all work simultaneously, this finding suggests that PVT schools have the potential to implement more diverse strategies, especially when providing ATS during overlapping sports events and when there is a need to treat numerous SAs within a limited time frame. Additionally, PVT schools had greater *CHrs* (the average weekly contracted ATS hours per school) and *AHrs* (the average weekly actual ATS hours per school) than PUB schools.

Both findings suggest that PVT schools provide a greater extent of ATS than PUB schools in schools with AT services. Despite previous reports that both school sectors, PUB and PVT, share similar barriers to hiring and employment status of ATs, such as budgetary constraints, small school size, lack of awareness, and geographic region, how these factors affect PUB and PVT schools differently has not been investigated.[14,15,17] This research gap in understanding limits the direct evidence available to explain our findings. One potential rationale is the difference in the available budget between the sectors. Public schools are funded through local, state, and federal sources,[18] whereas PVT schools primarily rely on tuition.[19] The average annual

tuition of PVT schools ranges from $16 144 to $22 600,[19] whereas PUB schools receive an average of $15 633 to $17 700 per pupil annually.[18] Flores reported that PVT schools with athletic programs have higher budgets and greater community support than PUB schools.[20] However, Flores used a limited sample (67 ATs and 110 athletic directors) within Nevada, which may not represent all US PUB and PVT school populations.[20] If we extrapolate these findings to the national level, then greater budget allocation could be a driving factor for the increased *ATs* and ATS hours in PVT schools compared with PUB schools. Another notable point is the high participation rate of PVT boarding schools in this study, reflected by their high response rate to the ATLAS survey. Within PVT HSs, various school types exist (e.g., day, religious, and boarding), each with different budgetary constraints and financial resources.[19] It is often assumed that schools with higher tuition, such as 7-day boarding schools (annual tuition >$67 270), allocate more resources to athletics.[19] Currently, 156 HSs (4.3%) of all US PVT schools are registered as members of the Association of Boarding Schools, whereas, on average, 12.07% (n = 141) of PVT schools participating in this study per AY were boarding schools.[21] If we assume that the Association of Boarding Schools includes all comprehensive PVT boarding schools, our finding suggests that about 90% of all boarding HSs responded to the ATLAS survey. This 90% response rate is notably high compared with the average PVT schools' response of 63% (n = 1168) in this study. Given the limited data on how budgets are allocated differently by school sectors and among associations within each sector, the following assumptions are needed to interpret the link between the observed higher ATLAS survey participation among boarding schools and greater ATs and ATS hours in PVT schools. First, PVT boarding HSs likely had higher budgets than PUB HSs. Second, schools with higher budgets may have invested more in ATS. Third, the higher participation rate of PVT boarding HSs in the ATLAS survey may be due to their greater likelihood of providing ATS compared with other associations. Only when these assumptions hold true could the higher budget in PVT HSs explain their greater number of ATs and more ATS hours.

Longitudinal Trends. The most notable longitudinal trend observed was that both sectors increased *FtATs* while reducing *PtATs*. Full-time ATs, with higher contracted hours, can theoretically provide more comprehensive coverage by attending more athletic events, including practices, games, and conditioning sessions. Of note, 62% of sudden deaths have been found to occur during practices, highlighting the importance of comprehensive coverage beyond just competitions.[22] Schools that employ only part-time ATs to cover just games or matches could be placing the SAs at greater risk of not having medical care on-site in the event of an emergency. Furthermore, full-time employees tend to be more involved in their work by taking on higher responsibilities in their roles.[23] Taking all these aspects into account, this transition likely had a positive impact on SAs' safety.

We propose 2 factors that may have driven the transition from part-time ATs to full-time ATs in HSs. First, in 2015, the AT Strategic Alliance issued an official statement mandating that all AT programs transition to master's degree programs by 2022, placing our study period within this transition.[24] Some authors have reported differences in career goals and understanding of the AT profession between bachelor's and master's degree students, highlighting how educational background may influence professional aspirations in the athletic training field. For instance, 93% of professional master's degree students intended to use their AT credentials for employment,[25] whereas many bachelor's degree students used their degree as a bridge to other careers.[26] Master's degree students also showed a deeper, more realistic understanding of the athletic training profession[27,28] and better career placement.[29] More graduates likely pursued full-time positions, viewing their career as a long-term career rather than a stepping stone, which encouraged schools to open more full-time positions. However, we note that it is pure speculation because no authors have yet directly examined the impact of the transition to a master's degree program on AT employment status, suggesting a need for further investigation.

Second, in 2018, the Korey Stringer Institute launched the Team Up for Sports Safety (TUFSS) initiative, which is funded in part by the National Football League and NATA, to improve state policies for safety among HS SAs. During TUFSS meetings, stakeholders, including athletic associations, superintendents, legislators, and medical personnel, discuss best practices for preventing sudden death and catastrophic injuries among HS SAs. Authors comparing 2016–2017 and 2019–2020 reported improvements in safety policies for HS SAs related to preventing sudden death and catastrophic injuries, suggesting a potential contribution from TUFSS.[30] These authors observed policy improvements in areas such as exertional heatstroke, emergency preparedness, and sudden cardiac arrest, which were directed toward emphasizing the essential roles of on-site health care professionals and the provision of comprehensive medical care to enhance SAs' safety.[30] Notably, the first TUFSS meeting took place after the beginning of this study, and until the last observed AY of 2022–2023, the meetings were held in 40 states and the District of Columbia, with several states hosting multiple meetings. If we consider TUFSS as a potential driver of policy adoption for improving the safety across HS SAs, and assuming these policies continued to be adopted throughout the observed period, it is plausible to speculate that the increase in *FtATs* observed in our study reflects the impact of TUFSS efforts and the subsequent enhancements in policy adoption. However, this remains pure speculation until future researchers clarify the causal effects of TUFSS on policy adoption and ATS trends.

ATs and Hours of ATS per SA and per Sport

Comparison Between PUB and PVT Schools. Even among schools that have the same number of ATs and provide the same CHrs and weekly contracted and actual ATS hours, ATS allocation per SA and per sport may differ depending on the number of SAs and sports. Throughout the observed years, whereas PUB schools consistently had a greater average number of SAs and sports per school, PVT schools had a greater average number of ATs and hours of services, both contracted and actual hours. We observed that PVT schools had consistently lower *SAs : ATs* and *Sports : ATs* ratios while having higher *CHrs : SAs*, *AHrs : SAs*, *CHrs : Sports*, and *AHrs : Sports* ratios throughout the observed years. These findings suggest

that PVT schools provided a greater extent of coverage per SA and per sport. Unlike collegiate or professional settings, in which ATs generally cover 1 to 3 sports, HS ATs often cover multiple sports during a season. Given this, establishing strategies for allocating ATs and ATS hours to each sport and its SAs is crucial for HSs with athletics. Although ATS may not have been evenly distributed across all sports and their SAs in real-world settings, these findings suggest that PVT schools may have had an advantage in providing effective ATS allocation. These findings may also imply that ATs in PVT schools have a reduced SA patient load, which may improve work-life balance compared with those in PUB schools.

Longitudinal Trends. From the first to the last observed years (2018–2019 or 2019–2020 to 2022–2023), *SAs*, *ATs*, *CHrs*, and *AHrs* remained stable in PUB schools. Consequently, *SAs : ATs*, *CHrs : SAs*, and *AHrs : SAs* ratios remained stable, indicating no change in ATS provision per SA. Conversely, PVT schools showed an increased *SAs : ATs* ratio and decreased *CHrs : SAs* and *AHrs : SAs* ratios. According to the National Center for Education Statistics, PVT HS enrollment increased by 6.72% during the observed period, likely contributing to the rise in SAs.[31] Although *SAs* increased in PVT schools, *CHrs* and *AHrs* remained unchanged, resulting in fewer ATS hours per SA, which led to increased *CHrs : SAs* and *AHrs : SAs* ratios. Although PVT schools increased *ATs* over the 5 years, this increase was inadequate to offset the growth in *SAs*, leading to an increased *SAs : ATs* ratio. Although it remains unclear if these findings indicate compromised SA safety, PVT schools may need to consider increasing AT staffing or ATS hours to maintain previous standards of care.

Sports in both PUB and PVT schools significantly increased between 2019–2020 and 2022–2023, whereas *CHrs* and *AHrs* remained stable. Consequently, *CHrs : Sports* and *AHrs : Sports* ratios decreased significantly in both sectors between 2019–2020 and 2022–2023, indicating fewer hours of ATS per sport. Furthermore, the *Sports : ATs* ratio increased significantly in PUB schools between 2018–2019 and 2022–2023. Although no significant change was found between 2018–2019 and 2022–2023 in PVT schools, a significant increase was observed from 2019–2020 to 2022–2023. The impact of these changes on sports safety remains unclear. If these trends suggest a reduced extent of ATS allocation per sport or increased AT workloads, schools may need to increase ATS hours or staff to maintain adequate coverage.

Limitations and Future Directions

Our study is not without limitations. We used the ATLAS database and included only responding schools. Although the ATLAS database is the most comprehensive, reflecting current ATS status among HSs, it may not fully represent the entire population of schools with ATS. Additionally, because the ATLAS database relies on self-reported information from ATs, there is an inherent risk of reporting bias. We used over 6000 surveys from schools for each AY analysis, some of which may have contained inaccurate information. Although the ATLAS team has thoroughly cleaned data for each AY multiple times, some inaccurate information from certain schools may remain. Furthermore, due to the lack of evidence regarding ATS other than the previously published ATLAS data and this study, we acknowledge that there may be a large degree of indirect evidence when interpreting the observations related to ATS trends in this study. This is the first study to examine longitudinal ATS trends between PUB and PVT schools, presenting challenges in identifying causal relationships for each observed finding due to limited available evidence. Nevertheless, our findings serve as the foundation, guiding future researchers seeking deeper insights into ATS trends.

Future authors should focus on several key areas. First, beyond comparing ATS between school types, researchers should explore national changes in ATS trends in HSs and conduct state-by-state analyses to understand how ATS trends have evolved and differ across the United States. Second, authors of further research should explore which factors contribute to the variations in ATS between PUB and PVT schools and observed longitudinal changes in ATS trends. Last, researchers should investigate how different ATS trends affect the safety of SAs in HSs. Although we observed some different ATS trends between school sectors, further studies are needed to determine how these differences have affected SAs' injuries and safety.

CONCLUSIONS

This study is the first longitudinal analysis to examine the extent and characteristics of ATS, tracking trends from 2018–2019 to 2022–2023 AYs. Some differing trends were observed between the sectors, with PVT schools providing ATS to a greater extent than PUB schools. Both sectors increased full-time athletic trainer positions while decreasing part-time positions during the study period, which is encouraging. However, as the number of SAs and sports increased in schools, the extent of ATS provided per SA and per sport has decreased in both sectors. This study may serve as valuable evidence supporting future research on ATS and the safety of HS SAs.

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REFERENCES

1. High school athletics participation survey. National Federation of State High School Associations. September 8, 2023. Accessed August 8, 2024. https://www.nfhs.org/media/7212351/2022-23_participation_survey.pdf
2. Belcher BR, Zink J, Azad A, Campbell CE, Chakravartti SP, Herting MM. The roles of physical activity, exercise, and fitness in promoting resilience during adolescence: effects on mental well-being and brain development. *Biol Psychiatry Cogn Neurosci Neuroimaging*. 2021;6(2):225–237. doi:10.1016/j.bpsc.2020.08.005

3. Christakou A, Lavallee D. Rehabilitation from sports injuries: from theory to practice. *Perspect Public Health*. 2009;129(3):120–126. doi:10.1177/1466424008094802
4. Prieto-González P, Martínez-Castillo JL, Fernández-Galván LM, Casado A, Soporki S, Sánchez-Infante J. Epidemiology of sports-related injuries and associated risk factors in adolescent athletes: an injury surveillance. *Int J Environ Res Public Health*. 2021;18(9):4857. doi:10.3390/ijerph18094857
5. Kucera KL, Cantu RC. Catastrophic sports injury research, fourteenth annual report. National Center for Catastrophic Sport Injury Research at the University of North Carolina at Chapel Hill. September 28, 2023. Accessed June 17, 2025. https://nccsir.unc.edu/wp-content/uploads/sites/5614/2023/11/2022-Catastrophic-Report-AS-40th-AY2021-2022-FINAL-WEB.pdf
6. Endres BD, Kerr ZY, Stearns RL, et al. Epidemiology of sudden death in organized youth sports in the United States, 2007–2015. *J Athl Train*. 2019;54(4):349–355. doi:10.4085/1062-6050-358-18
7. Lyznicki JM, Riggs JA, Champion HC. Certified athletic trainers in secondary schools: report of the Council on Scientific Affairs, American Medical Association. *J Athl Train*. 1999;34(3):272–276.
8. Athletic training. National Athletic Trainers' Association. March 19, 2015. Accessed August 2, 2024. https://www.nata.org/about/athletic-training
9. Casa DJ, Guskiewicz KM, Anderson SA, et al. National Athletic Trainers' Association position statement: preventing sudden death in sports. *J Athl Train*. 2012;47(1):96–118. doi:10.4085/1062-6050-47.1.96
10. Casa DJ, Almquist J, Anderson SA, et al. The Inter-Association Task Force for Preventing Sudden Death in Secondary School Athletics Programs: best-practices recommendations. *J Athl Train*. 2013;48(4):546–553. doi:10.4085/1062-6050-48.4.12
11. Schattenkerk J, Kucera K, Peterson DF, Huggins RA, Drezner JA. Socioeconomic factors and outcomes from exercise-related sudden cardiac arrest in high school student-athletes in the USA. *Br J Sports Med*. 2022;56(3):138–143. doi:10.1136/bjsports-2021-104486
12. Pryor RR, Casa DJ, Vandermark LW, et al. Athletic training services in public secondary schools: a benchmark study. *J Athl Train*. 2015;50(2):156–162. doi:10.4085/1062-6050-50.2.03
13. Pike A, Pryor RR, Mazerolle SM, Stearns RL, Casa DJ. Athletic trainer services in US private secondary schools. *J Athl Train*. 2016;51(9):717–726. doi:10.4085/1062-6050-51.11.04
14. Pike AM, Pryor RR, Vandermark LW, Mazerolle SM, Casa DJ. Athletic trainer services in public and private secondary schools. *J Athl Train*. 2017;52(1):5–11. doi:10.4085/1062-6050-51.11.15
15. Huggins RA, Coleman KA, Attanasio SM, et al. Athletic trainer services in the secondary school setting: the Athletic Training Locations and Services Project. *J Athl Train*. 2019;54(11):1129–1139. doi:10.4085/1062-6050-12-19
16. Gałecki A, Burzykowski T. Linear mixed-effects model. In: Gałecki A, Burzykowski T. *Linear Mixed-Effects Models Using R: A Step-by-Step Approach*. Springer; 2013:245–273. doi:10.1007/978-1-4614-3900-4_13
17. Yoshihara A, Olson MB, Filep EM, et al. Geographic disparity in distance to trauma care in secondary schools across the United States. *J Athl Train*. 2024;59(5):458–464. doi:10.4085/1062-6050-0149.23
18. Hanson M. U.S. public education spending statistics. Education Data Initiative. Accessed August 6, 2024. https://educationdata.org/public-education-spending-statistics
19. Hanson M. Average cost of private school. Education Data Initiative. Accessed August 6, 2024. https://educationdata.org/average-cost-of-private-school
20. Flores NMA. *Money Matters: Exploring the Financial Resources for Sports Medicine Programs in Public and Private Secondary Schools—A Qualitative Study*. Thesis. University of Nevada; 2018. Accessed October 9, 2024. https://digitalscholarship.unlv.edu/thesesdissertations/3253
21. List of schools. Association of Boarding Schools. Accessed August 8, 2024. https://boardingschools.com/find-a-school/list-of-schools/
22. Boden BP, Breit I, Beachler JA, Williams A, Mueller FO. Fatalities in high school and college football players. *Am J Sports Med*. 2013;41(5):1108–1116. doi:10.1177/0363546513478572
23. Thorsteinson TJ. Job attitudes of part-time vs. full-time workers: a meta-analytic review. *J Occup Organ Psychol*. 2003;76(2):151–177. doi:10.1348/096317903765913687
24. Strategic alliance degree statement. AT Strategic Alliance. May 20, 2015. Accessed July 4, 2024. https://www.atstrategicalliance.org/strategic-alliance-degree-statement
25. Ostrowski JL, Iadevaia CM. Characteristics and program decisions of master's-level professional athletic training students. *Athl Train Educ J*. 2014;9(1):36–42. doi:10.4085/090136
26. Mazerolle SM, Gavin KE, Pitney WA, Casa DJ, Burton L. Undergraduate athletic training students' influences on career decisions after graduation. *J Athl Train*. 2012;47(6):679–693. doi:10.4085/1062-6050-47.5.16
27. Mensch J, Mitchell M. Choosing a career in athletic training: exploring the perceptions of potential recruits. *J Athl Train*. 2008;43(1):70–79. doi:10.4085/1062-6050-43.1.70
28. Bowman TG, Pitney WA, Mazerolle SM, Dodge TM. Program directors' perceptions of reasons professional master's athletic training students persist and depart. *Athl Train Educ J*. 2015;10(1):57–64. doi:10.4085/100157
29. Bowman TG, Mazerolle SM, Pitney WA, Dodge TM, Hertel J. Student-retention and career-placement rates between bachelor's and master's degree professional athletic training programs. *J Athl Train*. 2015;50(9):952–957. doi:10.4085/1062-6050-50.7.06
30. Scarneo-Miller SE, Eason CM, Adams WM, Stearns RL, Casa DJ. State-level implementation of health and safety policies to prevent sudden death and catastrophic injuries within high schools: an update. *Am J Sports Med*. 2021;49(12):3372–3378. doi:10.1177/03635465211031849
31. Table 105.30. Enrollment in elementary, secondary, and degree-granting postsecondary institutions, by level and control of institution: selected years, 1869–70 through fall 2031. Digest of Education Statistics. National Center for Education Statistics. Accessed August 2, 2024. https://nces.ed.gov/programs/digest/d22/tables/dt22_105.30.asp.2022

Address correspondence to Robert A. Huggins, PhD, ATC, Department of Kinesiology, Korey Stringer Institute, University of Connecticut, 2095 Hillside Road, Box U-1110, Storrs, CT 06269. Address email to robert.huggins@uconn.edu.