**University Athletics Committee**
**October 14, 2021**
3:30-5:00 p.m. (Virtual Only)

**Present:** Tom Burbey, Travis Burns, Patrick Finley, Heather Gumbert, Rachel Holloway, Jennifer Irish, Joe Marcy, Ken Miller, Terry Rakes, Bridget Ryan-Berman, Susan Short, Eric Stanley, Ken Stiles, Chris Wise (for Frank Shushok), Becki Smith, Kevin Carlson (for Robert Sumichrast), Joseph Tront

**Absent:** Allison Bowersock**,** Bob Denton, Maria Kenner, Jay Poole, Robin Queen

**Guests:** Sarah Armstrong, Brandon Senior, Kristen Skiera, Danny White

Susan Short called the meeting to order at 3:30 p.m. A quorum was present.

1. **Adoption of Agenda**
   A motion was made and seconded to adopt the agenda. The motion carried.

2. **Announcement of approval and posting of minutes of September 9, 2021.**
   Susan Short noted that these minutes have been voted on electronically and can be publicly accessed on the Governance Information System on the Web (http://www.governance.vt.edu).

3. Susan Short introduced and welcomed **Brandon Senior** to the meeting. Brandon is a first-year doctoral student and was observing the meeting as part of his EDHE 6054 course requirements (with a focus on university governance).

4. **Coaches Corner** – UAC members welcomed Kristen Skiera, Head Coach, Women's Lacrosse. Coach Skiera arrived at Virginia Tech at the end of July. She previously served as the head women's lacrosse coach at Army West Point. She was a two-time All-American performer as an attacker at Duke. Her coaching philosophy includes the following themes: professionalism, communication, accountability, preparing for success in life. Skiera and her coaching staff are focused on student-athlete mental health, academic success, watching film, and managing a roster of 43 players.

5. **Athletic Director Update –** Danny White, Senior Associate Athletic Director, Student-Athlete Services/University Affairs. Danny provided an update on Whit Babcock's behalf. Topics included: Fall Sports Update (UAC will receive an update in "standings" during our November meeting – Learfield and Commonwealth Cups);

announced that Whit has completed his annual visit with university Deans; COVID testing for Fall Championships (following state protocols); The Compliance Group (TCG) is conducting a compliance audit (occurs every four years at ACC institutions) – they are looking at Virginia Tech protocols and policies. He encouraged us to consider inviting Reyna Gilbert-Lowry, senior associate athletic director, student-athlete development/SWA and Derek Gwinn, senior associate athletics director, compliance to a future meeting to provide additional updates. White responded to members' questions related to stadium safety and athlete housing in the new residence hall at the Creativity and Innovation District Living – live-learning community. The athletic department filled between 166-168 beds in the new residence hall. He welcomed additional insights regarding the student entrance to Lane Stadium (Section 7).

6. **Academic Update** – Sarah Armstrong, Director, Student Athlete Academic Support Services (PowerPoint provided) Highlights provided by Sarah included the following:
    - Announced that the number of "open tutoring" appointments has been reduced. Sarah thanked members of the committee for their assistance.
    - Shared an overview of SAASS support that included Learning Assistance Program, Faculty Progress Reports, and Academic Watch List.
    - Provided an overview of credit hour requirements and degree progress.
    - Shared that the Learning Assistance Programs were fully staffed with three (3) learning specialists.
    - Provided an update on GPA distributions from Spring 2021.

7. **Faculty Athletics Representative (FAR) Reflections** – Jen Irish

    Jen provided the following updates:
    - She has met with student-athletes, Rachel Holloway and Sarah Armstrong.
    - In addition, Jen has met with Juan Espinoza, associate vice provost for enrollment management and director of undergraduate admissions. She shared that 80-90% of our athletes go through the standard VT admissions progress.
    - She is eager to help remove barriers for our student athletes. She is thinking about ways to better communication with faculty members. She is considering providing faculty with a semester update.
    - Jen and Joe Tront mentioned the completion of the NCAA Constitutional survey. Summary results will be shared during our next UAC meeting.

8. **Committee Member Comments/Updates**

   Susan encouraged members to provide recommendations for future meeting topics and locations for meetings. In addition, she shared that the December 9th meeting will include a tour of the ACC Network Studio. Susan will include 2-3 articles that have been shared with her during the past several weeks as a part of the meeting minutes. These include the following: NLRB decision paves way for college athlete rights (Inside Higher Ed – 9/30/2021); While some NCAA athletes cash in on NIL, others lose out (Inside Higher Ed – 10/12/2021); The Impacts of COVID-19 on Collegiate Student-Athlete Training, Health, and Well-Being (American College of Sports Medicine, 2021).

9. **Adjournment**

   There being no further business, a motion was made to adjourn the meeting at 5:05 p.m.

**MEETING DATES FOR 2021** (All meetings will be held from 3:30 – 5:00 p.m.)

Thursday, November 11, 2021 (Virtual Only)
Thursday, December 9, 2021 (ACC Network Studio Tour)

**ATTACHMENTS**:

1. Academic Update Slide Deck (Armstrong)
2. NLRB decision paves way for college athlete rights (Inside Higher Ed – 9/30/21)
3. While some NCAA athletes cash in on NIL, others lose out (Inside Higher Ed – 10/12/21)
4. The Impacts of COVID-19 on Collegiate Student-Athlete Training, Health, and Well-Being (2021)

# NLRB decision paves way for college athlete rights

Submitted by Maria Carrasco on September 30, 2021 - 3:00am

The National Labor Relations Board's top attorney issued a memo Wednesday [1] asserting that athletes at private colleges qualify as employees under federal labor law, entitling them to the same protections as other private sector employees, including the right to unionize.

In the memo [2], NLRB general counsel Jennifer Abruzzo wrote that federal laws and NLRB policies "fully support the conclusion that certain Players at Academic Institutions are statutory employees, who have the right to act collectively to improve their terms and conditions of employment."

Essentially, it declares that athletes at private colleges are covered by the National Labor Relations Act, a foundational statute that guarantees the right of private sector employees to organize into trade unions, engage in collective bargaining and take collective action such as strikes.

While it may ultimately benefit athletes, the memo doesn't fundamentally change the relationship between players and their institutions just yet. Rather, it outlines a plausible legal strategy for the NLRB should any labor conflicts arise.

"It could be a very long time before we ever see any school have to bargain with a union for its players," said Jeffrey Hirsch, a labor and employment law professor at University of North Carolina at Chapel Hill. "But if we ever hit that point, that's obviously a huge deal."

The guidance outlined in the memo does not apply to athletes at public institutions, because the NLRA does not cover public sector workers.

"Unless Congress amends the statute -- which they could do and I'd be happy for them to do it -- I can't assert jurisdiction over a public institution," Abruzzo said in an interview.

Still, Abruzzo wrote it could "be appropriate" for the board to assert jurisdiction over -- and even pursue charges against -- an entire league or athletic conference, "even if some of the member schools are state institutions."

Harry Johnson, a former member of the NLRB and now a partner at Morgan Lewis, said that the memo allows the NLRB to take aim at public institutions through the NCAA.

"The NLRB only has jurisdiction over private schools, but coming after the NCAA or the conferences and forcing them to change their rules will effectively end up opening that up for public universities and colleges as well," Johnson said. "So they should be somewhat concerned."

The National Collegiate Athletic Association pushed back against the memo in a statement released Wednesday evening [3], saying, “college athletes are students who compete against other students, not employees who compete against other employees.”

“Like other students on a college or university campus who receive scholarships, those who participate in college sports are students,” the NCAA statement said. “Both academics and athletics are part of a total educational experience that is unique to the United States and vital to the holistic development of all who participate."

Hirsch said the memo might scare the NCAA into taking action on its own regarding athletes’ employment status. He added that the best and possibly only way to create a bargaining framework for collegiate athletics is through the NCAA, which he sees as parallel to professional leagues.

“All the other professional sports leagues, or the major ones, at least, are all unionized, and they are not dealing with individual teams, for the most part,” Hirsch said. “The union contracts are with the leagues, and so it’s kind of the equivalent of that.”

The NLRB memo comes on the heels of the NCAA’s recent decision [4] to allow college athletes to profit from their name, image and likeness (NIL), a move that, Abruzzo said, “just bolsters the notion that [college athletes] are, like pro athletes, employees of their particular college.”

Adrienne Larmett, a senior manager in Baker Tilly’s risk advisory practice specializing in higher education, said the NLRB’s decision “adds further complexity for institutions as they try to comply with and operationalize NIL rules.”

In the past, the absence of overarching federal regulations on whether to treat college athletes as employees prompted states to enact their own NIL laws [5]. Some state laws expressly prohibit classifying student athletes as employees, but now those states could be forced to revise those laws, she said.

“This new guidance will also likely add pressure to college and university leadership to focus on NIL in a way they may not have been before; where providing legal, financial, human resources support before may have been a ‘nice to have,’ will now become a ‘must have,’” Larmett said. “For many institutions who are already overwhelmed with NIL, and myriad other compliance requirements, this new federal guidance presents new challenges.”

In the memo, Abruzzo also said institutions that misclassify players as “student-athletes” or lead them to believe they are not protected under the NLRA can be charged with labor violations.

“While Players at Academic Institutions are commonly referred to as ‘student-athletes,’ I have chosen not to use that term in this memorandum because the term was created to deprive those individuals of workplace protections,” she wrote.

The memo’s findings are actually not new. In February 2017, former NLRB general counsel Richard

Griffin wrote in a memo [6] that "scholarship football players in Division I Football Bowl Subdivision private-sector colleges and universities are employees" under the National Labor Relations Act. But later that year, Trump-appointed general counsel Peter Robb rescinded that memo.

Because the new memo doesn't just include Division I football, but rather all college athletics, Johnson said it will be interesting to see what sports teams use the term "employee," since teams have regulations based on revenue, scholarship and "team rules."

"If you're in a large revenue-generating sport, like football or basketball, those models are going to be subject to scrutiny and highly likely litigation under this memo," Johnson said.

Abruzzo said her position is backed by the Supreme Court's June ruling on NCAA vs. Alston, which found that the NCAA cannot bar compensation [7] for education-related benefits. It's a big change from the position the NLRB took back in 2014, when it declined to assert jurisdiction over a case at Northwestern University, where the football team tried to unionize [8] -- though even then it acknowledged them as employees.

"The freedom to engage in far-reaching and lucrative business enterprises makes Players at Academic Institutions much more similar to professional athletes who are employed by a team to play a sport, while simultaneously pursuing business ventures to capitalize on their fame and increase their income," Abruzzo wrote.

Abruzzo said that because college athletics is so popular, she hopes the memo will attract a larger audience committed to preserving workers' rights for all.

"I am hoping that the broader message will be that this isn't only about players at academic institutions, this is about workers at large, and what rights they have and what rights we will protect and enforce to the extent that those rights are trampled on by their employers," Abruzzo said



**Links**

[1] https://www.insidehighered.com/quicktakes/2021/09/29/nlrb-asserts-%E2%80%98certain%E2%80%99-college-athletes-are-employees?utm_source=ihe&utm_medium=editorial-site&utm_content=breakingnews
[2] https://big.assets.huffingtonpost.com/athena/files/2021/09/29/615471d2e4b099230d1ddf1d.pdf
[3] https://www.ncaa.org/about/resources/media-center/news/ncaa-statement-on-nlrb-general-counsel-memo
[4] https://www.ncaa.org/about/resources/media-center/news/ncaa-adopts-interim-name-image-and-likeness-policy
[5] https://www.bakertilly.com/insights/navigating-the-ncaas-interim-nil-policy-and-state-regulations
[6] https://www.insidehighered.com/news/2017/02/02/nlrb-general-counsel-says-private-college-football-players-are-employees
[7] https://www.insidehighered.com/news/2021/06/22/supreme-court-upholds-payments-athletes
[8] https://www.insidehighered.com/news/2015/08/18/national-labor-relations-board-declines-assert-role-northwestern-football-union

# The Impacts of COVID-19 on Collegiate Student-Athlete Training, Health, and Well-Being

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## ABSTRACT

**Introduction:** The purpose of this study was to determine the impact of COVID-19 and stay-at-home (SAH) orders on collegiate student-athletes' training, nutrition, sleep habits, and mental health and to identify disparities between sexes and competitive divisions. **Methods:** Collegiate student-athletes ($n$ = 401; age, 20 ± 2 yr) completed an 84-question anonymous survey regarding demographics, sport/exercise training, nutrition, sleep habits, and mental health. Response frequencies were calculated for each question, and $\chi^2$ analyses were used to determine statistical significance ($\alpha$ = 0.05). **Results:** Although 80.7% of respondents indicated training for their sport, only 38.7% could fully perform their training programs. More D1 versus D3 athletes reported they could perform their training plan as written (D1: 44.4% [$n$ = 83] vs D3: 27.3% [$n$ = 50]; $P < 0.01$), but there were no differences between sexes. Cardiovascular exercise was the most common mode (87.5%) followed by resistance exercise (78.4%). Although there were no differences for cardiovascular exercise, more males (87.5%) than females (74.8%) indicated resistance training ($P < 0.01$). Average number of meals consumed per day remained similar before and during SAH, but females reported consuming less food and perceived increased healthfulness of their diets. Although most athletes did not use nutritional supplements, rates were higher among D3 and females. Respondents reported longer sleep durations but increased sleep disturbances, negative psychological states, and overall concerns during SAH. Maintaining fitness and sport-specific skills (~70.0%) were the most common concerns. In addition, ~60.6% of females and 41.9% of males indicated increased mental health concerns. **Conclusions:** Our findings suggest that while attempting to be diligent with training during SAH, many student-athletes reported difficulties regarding limited equipment, motivation, and mental health concerns such as heightened anxiety. Many of these difficulties were division- and sex-specific. Discussions between coaches and student-athletes regarding SAH training and mental stressors may aid in determining student-athletes' readiness to return to sport.

The coronavirus 2019 (COVID-19) pandemic caused by the severe acute respiratory syndrome coronavirus 2 virus (SARS-CoV-2) incited a national emergency (1) that forced colleges and universities in the United States to close their doors in March 2020 (2). These sudden university closures left minimal time for sport coaches, strength and conditioning (S&C) coaches, and other support staff to create and disseminate feasible at-home training programs for student-athletes. Nationwide shutdowns further complicated athletes' training at home by limiting access to adequate exercise equipment and space required for training. As this is the first time all sports have come to a halt since the 1940s, no data exist regarding student-athlete sport training regimens, nutritional habits, and mental health status during times of limited or no access to adequate training equipment and/or resources (3). Therefore, research is warranted to investigate the effect extended time away from typical training routines has on collegiate student-athlete sport training habits and overall well-being.

Collegiate student-athletes' sport training and competition seasons typically follow a set schedule with routine access to school-based support including sport coaches responsible for on-field sport-specific training, S&C coaches responsible for general performance development, athletic trainers in charge of injury and rehabilitation management, nutritional support for dietary needs, and access to adequate exercise training equipment. Brief periods away from these resources generally occur in 2- to 6-wk blocks over semester breaks. Lack of training during these times can result in detraining evidenced by decreased aerobic capacity, speed, and muscular power (4). Large increases in acute workloads in general or after periods of detraining increase the risk of both overuse and traumatic injuries (5,6). For example, higher injury rates are often seen among collegiate athletes during preseason when training volume markedly increases (7). Return to sport after COVID-19 lockdowns may exaggerate this effect, similar to the increased tendon injury occurrence seen in 2011 after the National Football League's 19-week lockout (8). More recently, a case study following a professional soccer team through the fall

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2020 season found athletes were 3.12× more likely to sustain an injury after lockdown (9). Furthermore, 17.3% of these injuries occurred before or during their initial match of the season (9). Although collegiate coaches likely attempted to provide home-based exercise programs aimed at maintaining fitness and physical skills during the school closures, adherence to these programs may be varied because of limited equipment and decreased motivation (4,10).

In addition to exercise and sport performance, forced lockdown and university closures present challenges regarding nutrition, sleep, and mental health. For instance, without on-campus dining services, many student-athletes no longer have a reliable source of food (2) as roughly 30% of student-athletes report facing food insecurity (11). Suspended team activities and associated social gatherings led to forced isolation from support systems (i.e., teammates, coaches) creating growing concern surrounding mental health, specifically anxiety and depressive symptoms (12). In general, student-athletes are less likely to suffer from depressive and anxiety symptoms than nonathletes (13) because, in part, of positive social relationships and increased self-esteem fostered through sport participation (13,14). Despite this, 14%–33% of student-athletes report depressive symptoms while in college (15,16). These rates may be increased after forced isolation from teammates and sport cessation due to stay-at-home (SAH) orders. A recent survey among college students, including nonathletes, found 60% reported increased stress levels, and 84% reported dramatic changes to sleep patterns during SAH (17). Assessing the student-athletes' psychological distress levels before and upon return to campus may further aid coaches and S&C staff in successfully reintegrating student-athletes back to team training and competition.

Knowledge surrounding student-athletes' training/nutrition habits and mental health during SAH may be useful for coaches when developing at-home training programs and return-to-play guidelines for future extended training breaks. Therefore, the purpose of this study was to determine the impact of COVID-19 and SAH orders on collegiate student-athletes' training, nutrition, sleep habits, and mental health and to identify disparities between sexes and competitive divisions. It was hypothesized that student-athletes would report training discontinuation due to factors including equipment access, training support, and motivation during SAH. This research may help to determine student-athlete health and wellness practices during the current COVID-19 pandemic and offer recommendations for safely transitioning student-athletes back to school-based sport training and competitions following extended breaks from supervised training.

## METHODS

### Subjects

Student-athletes enrolled in a college/university competing in the National Collegiate Athletic Association (NCAA) in the United States at the Division I (D1), II (D2), or III (D3) levels were invited to take part in an anonymous electronic survey. Student-athletes were eligible to participate in the survey if they were at least 18 years old and planning to participate in an NCAA collegiate sport in the 2020–2021 academic year. A total of 494 student-athletes initially responded to the survey, of which 447 gave informed consent to participate. From this sample, 11 of the respondents were excluded because of ineligibility based on lack of participation in an NCAA sport. An additional 35 respondents did not complete any questions after giving informed consent and were subsequently excluded. The final sample size was 401 student-athletes (males: $n = 136$; females: $n = 260$; did not specify: $n = 5$) with a mean ± SD age of 20 ± 2 yr. Of these 401 respondents, 275 completed the questionnaire in its entirety, whereas 126 did not.

### Survey Development

The Sport Science Lab at the University of South Carolina developed the survey in conjunction with certified athletic trainers and registered dietitians from the university. The survey (Qualtrics, Inc., Provo, UT) began with items assessing participation eligibility followed by an informed consent statement. There were 84 questions targeted at demographic information ($n = 4$), living conditions ($n = 2$), COVID-19 diagnosis or COVID-19–like symptoms ($n = 2$), sport training ($n = 34$), nutrition and supplement habits ($n = 12$), sleep habits ($n = 6$), and mental health ($n = 24$).

Question structure included Likert scales, open-ended, multiple choice, and fill-in-the-blank. Training-focused questions asked about frequency, intensity, and duration of cardiovascular exercise, resistance exercise, sport-specific drills, and flexibility training during the SAH period. Questions regarding nutrition, sleep, and mental health were adapted from previously validated questionnaires including the State Anxiety Inventory (18), Multicomponent Training Distress Scale (19), and the Pittsburg Sleep Quality Index (20) to determine how these relevant factors changed during the SAH period relative to the pre-SAH period. Questions that best targeted the aims of this project were selected at the researcher's discretion, as opposed to entire questionnaires, in an attempt to minimize time required by participants to complete the survey. The survey was approved by the University of South Carolina Institutional Review Board and was pilot tested by former collegiate student-athletes for relevance, readability, and time commitment to establish content validity before dissemination.

### Procedures

Survey promotion and distribution to eligible student-athletes occurred via snowball sampling through word-of-mouth, e-mail, and social media. Colleagues and athletic staff at universities were asked to share the anonymous electronic survey link with their student-athletes at their institution. All athletic departments and coaches who were contacted to aid in survey dissemination were informed student-athlete responses would remain anonymous. The survey took approximately 15 min to complete and was open from May 27, 2020, to July 25, 2020.

### Data Analysis

Individual respondents were screened and excluded based on inclusion criteria. Response frequencies were assessed for each question, and sample sizes used to determine frequencies were calculated from completed answers on a question-by-question basis. $\chi^2$ analyses with Yates' continuity correction were performed to determine differences in frequencies between sexes and between competitive divisions with $\alpha$ level = 0.05 to determine statistical significance. Analyses by sex included response frequencies of males ($n = 136$) and females ($n = 260$); those who responded, "prefer not to say" ($n = 5$) were excluded from analyses as a function of sex.

**TABLE 1.**
**Respondent Demographics.**

| | All[a] | Male | Female |
|---|---|---|---|
| Race[b] | (*n* = 401) | (*n* = 136) | (*n* = 260) |
| White | 87.0% | 83.1% | 90.0% |
| Black/African American | 8.0% | 11.0% | 6.2% |
| Native American/ Alaska Native | 0.7% | 0.7% | 0.8% |
| Asian | 3.7% | 4.4% | 3.1% |
| Native Hawaiian/ Pacific Islander | 1.0% | 1.5% | 0.8% |
| Other | 5.5% | 6.6% | 5.0% |
| School year 2020–2021 | (*n* = 397) | (*n* = 133) | (*n* = 260) |
| Freshman | 7.6% | 7.5% | 7.7% |
| Sophomore | 25.9% | 24.1% | 27.3% |
| Junior | 32.5% | 35.3% | 30.8% |
| Senior | 32.2% | 29.3% | 33.5% |
| Graduate | 1.8% | 3.8% | 0.8% |
| Competitive division | (*n* = 378) | (*n* = 125) | (*n* = 247) |
| Division I | 49.0% | 55.6% | 46.0% |
| Division II | 3.1% | 3.2% | 3.2% |
| Division III | 47.9% | 41.3% | 50.8% |
| Sport[b] | (*n* = 391) | (*n* = 130) | (*n* = 257) |
| Soccer | 22.3% | 18.5% | 24.5% |
| XCountry/track and field | 13.3% | 10.0% | 14.8% |
| Swimming and diving | 12.5% | 10.0% | 13.6% |
| Football | 7.2% | 20.8% | 0.0% |
| Baseball | 6.6% | 20.0% | 0.0% |
| Basketball | 5.6% | 4.6% | 6.2% |
| Softball | 5.4% | 0.0% | 8.2% |
| Volleyball/beach volleyball | 6.9% | 1.5% | 9.7% |
| Field hockey | 4.6% | 0.0% | 7.0% |
| Lacrosse | 4.6% | 3.1% | 5.1% |
| Rowing | 3.6% | 0.8% | 5.1% |
| Equestrian | 2.6% | 0.0% | 3.9% |
| Wrestling | 2.6% | 6.9% | 0.4% |
| Other[c] | 4.9% | 3.8% | 5.4% |

Numbers of total, males, and females are listed for each question.

[a] Five respondents did not specify sex and are only included in "All."

[b] Question for which respondents could select more than one response.

[c] Other sports (<2% reported participation) include golf, tennis, gymnastics, and cycling.

Analyses by division included response frequencies from D1 (*n* = 187) or D3 (*n* = 183) respondents only; D2 respondents were excluded from by-division analyses because of a small sample size (*n* = 12) but were included in all other analyses. All statistical analyses were performed using the package "funModeling" (version 1.9.4) in R (version 4.0.2). For individual questions, data are presented as frequency percentages and as mean frequency percentage when questions regarding the same topics were assessed together.

## RESULTS

### Demographics

Respondents represented male (*n* = 136) and female (*n* = 260) NCAA student-athletes from 18 different sports at the D1, D2, and D3 levels. Half of respondents (50%; *n* = 187) indicated their sport was in-season at the time of the lockdown, whereas the other half indicated they were in the off-season. Most respondents indicated they were living at home with their parents (61.9%; *n* = 237) or in an apartment/house with roommates (20.6%; *n* = 79) for the duration of SAH. Less than 10% of respondents reported being diagnosed with or experiencing symptoms of COVID-19 (9.0%; *n* = 28). Respondent demographics are displayed in Table 1.

### Exercise and Sport Training

#### Training Programs

Most respondents indicated they were currently training for their sport (80.7%; *n* = 301), and of these, 64.6% (*n* = 239) responded they were following a specific training program. When asked where they obtained the training program, the most common response was "my S&C coach at school" followed by "I made it on my own" and "sport coach" (Table 2). When asked if they had the appropriate training equipment to perform their program, 38.7% (*n* = 137) of all respondents stated they could perform their plan as written without any modifications and 15.0% (*n* = 53) stated they could not perform the training plan they were given, even with modifications.

Females were more likely than males to receive their training plan from their sport coach as opposed to S&C coach. However, there were no differences between males and females in regard to ability to perform the given training program, as 44.6% of males (*n* = 50) and 36.1% of females (*n* = 86) reported they could fully perform their training programs ($\chi^2$ = 1.98, *P* = 0.16), and 13.4% of males (*n* = 15) and 16.0% of females (*n* = 38) reported being unable to perform their program at all ($\chi^2$ = 0.22, *P* = 0.64). Along with females, D3 athletes were more likely to receive training programs from sport coaches or make a plan for themselves, whereas D1

**TABLE 2.**
**Training Plan Source.**

| | All ($n$ = 354) | Male ($n$ = 112) | Female ($n$ = 238) | $\chi^2$ ($P$-Value) | D1 ($n$ = 172) | D3 ($n$ = 170) | $\chi^2$ ($P$-Value) |
|---|---|---|---|---|---|---|---|
| S&C coach at school | 52.0% | 46.4% | 53.8% | 2.14 (0.14) | 61.0%** | 44.7% | 8.52 (0.004) |
| I made it on my own | 41.0% | 46.4% | 37.8% | 2.00 (0.16) | 32.6%** | 48.8% | 9.36 (0.002) |
| Sport coach | 30.2% | 18.8% | 35.7%** | 9.59 (0.002) | 19.8%*** | 38.8% | 14.10 (<0.001) |
| Coach at home | 12.7% | 12.5% | 13.0% | <1.00 (1.00) | 18.0%* | 8.2% | 6.34 (0.01) |

Percentage of student-athletes who recieved their training plan from each source during SAH. Respondents selected all responses that applied. Significant differences between sexes/divisions are denoted by asterisks.

*$P < 0.05$.

**$P < 0.01$.

***$P < 0.001$.

athletes were more likely to receive training programs from S&C coaches (Table 2). However, almost twice as many D1 versus D3 athletes could perform their training plan as written (D1: 44.4% [$n$ = 83] vs D3: 27.3% [$n$ = 50]; $\chi^2$ = 12.88; $P$ = 0.0003), but the amount of athletes who could not perform their program was similar between divisions (D1: 11.8% [$n$ = 22] vs D3: 16.9% [$n$ = 31]; $\chi^2$ = 1.37, $P$ = 0.24).

### Training Habits

Respondents were asked to provide the type, average frequency, duration, and rating of perceived exertion of their exercise sessions. Cardiovascular exercise was the most reported exercise type, with 87.4% ($n$ = 299) of respondents selecting this option. Of those performing cardiovascular exercise, 61.8% ($n$ = 194) reported performing 3–5 sessions per week, with most (69.7%; $n$ = 223) reporting <45-min session duration. Only 10.7% ($n$ = 35) of respondents reported sessions >60 min. Running was the most common modality (83.1%; $n$ = 289) followed by biking (38.2%; $n$ = 133) and high-intensity interval training (37.9%; $n$ = 132). Other modalities reported included jump rope, hiking, circuit training, and sprint workouts. Resistance exercise was the second most common exercise type (78.4%; $n$ = 210), with most respondents (72.7%; $n$ = 210) performing between 2 and 4 d·wk$^{-1}$ for 30–45 min (28.0%; $n$ = 167) or >45 min (39.1%; $n$ = 127). Resistance bands and dumbbells were the most common resistance exercise equipment used, with 60.5% (resistance bands: $n$ = 210; dumbbells: $n$ = 210) of respondents using these modalities. Other exercise types being performed included sport-specific drills (57.0%; $n$ = 195) and yoga/stretching routines (48.8%; $n$ = 167). Only 1.2% ($n$ = 4) of respondents indicated they were currently performing physical therapy exercises. Yoga/stretching and sport-specific drill sessions were mostly ≤30 min (78.4% [$n$ = 189] and 37.0% [$n$ = 87], respectively). However, 22.6% ($n$ = 53) of respondents reported engaging in sport-specific drill practice sessions >60 min. Cardiovascular and resistance exercise session intensities were "somewhat hard" or "hard" (69.3% [$n$ = 210] and 74.4% [$n$ = 206], respectively), whereas yoga/stretching session was "easy" or "very easy" (60.2%; $n$ = 137). There was more variation in the sport-specific drill activity intensity, with 22.4% ($n$ = 48) of respondents rating their intensity as "easy," 36.4% ($n$ = 78) as "somewhat hard," and 22.9% ($n$ = 49) as "hard." Despite this, most respondents (64.7%; $n$ = 209) indicated feeling their training was "less effective" as opposed to "more effective" or "the same" during SAH compared with at school.

Cardiovascular exercise participation was similar between sexes (males: 81.7% [$n$ = 85]; females: 89.7% [$n$ = 210]; $\chi^2$ = 3.47; $P$ = 0.062), but more males (87.5%; $n$ = 91) than females (74.8%; $n$ = 175) were performing resistance exercise ($\chi^2$ = 17.10; $P$ = 0.0001). The majority of females (64.1%; $n$ = 127) reported resistance exercise sessions <45 min, whereas the majority of males (58.5%; $n$ = 55) reported sessions >45 min. A larger percentage of males than females reported using dumbbells (males: 79.4% [$n$ = 85]; females: 58.5% [$n$ = 138]; $\chi^2$ = 13.32, $P$ = 0.0003) and barbells (males: 54.2% [$n$ = 58]; females: 26.3% [$n$ = 62]; $\chi^2$ = 24.04, $P$ < 0.00001), but there were no differences in kettlebell (males: 31.8% [$n$ = 34]; females: 24.6% [$n$ = 58]) or resistance band usage (males: 57.9% [$n$ = 62]; female: 61.9% [$n$ = 146]) between sexes. The only divisional differences in training habits were in resistance exercise equipment, as more D1 athletes used dumbbells (D1: 66.8% [$n$ = 125] vs D3: 53.0% [$n$ = 97]; $\chi^2$ = 13.20, $P$ = 0.0003), kettlebells (D1: 32.1% [$n$ = 60] vs D3: 16.4% [$n$ = 30]; $\chi^2$ = 14.45, $P$ = 0.0001), and barbells (D1: 42.3% [$n$ = 79] vs D3: 20.2% [$n$ = 37]; $\chi^2$ = 24.78, $P$ < 0.0001).

## Nutrition/Supplements

Respondents reported subjective feelings about the healthfulness of their diet compared with before SAH, as well as changes in dietary patterns. Reported meal patterns were similar from before to during SAH, with most athletes reporting consuming 2–3 meals per day (pre: 75.2% [$n$ = 236]; during: 79.6% [$n$ = 249]). When analyzing meal frequency by sex, ~5% of females and ~3% of males reported consuming fewer meals during SAH compared with at school. However, when asked about food quantity consumed during SAH compared with at school, more females reported decreased food intake (female: 43.8% vs male: $\chi^2$ = 10.24, $P$ = 0.001) but also perceived their dietary habits as healthier during SAH (females: 38.7% vs males: $\chi^2$ = 7.01; $P$ = 0.008).

Overall supplement usage and changes in supplement usage are shown in Table 3. Most athletes reported "do not use" for each supplement, and of those who did use supplements, most reported using the supplement before and continuing during SAH. More females than males reported never using supplements (~61.6% vs 42.4%, respectively), apart from multivitamins (females: 47.7% vs males: 39.7%; $P = 0.16$). However, there were no significant differences between respondents who started versus stopped supplement usage during SAH by sex. Similar patterns were seen for divisional analyses, as more D3 (~62.2%) than D1 (~42.5%) athletes reported never using supplements, except for creatine, but a similar percentage of athletes in both divisions reported either stopping or starting most supplements during SAH.

### Sleep Habits and Mental Health

Respondents increased sleep duration during SAH, as 9.1% ($n = 28$) of respondents reported sleeping <7 h during SAH compared with 29.6% ($n = 91$) who reported <7 h before SAH ($\chi^2 = 33.35$, $P < 0.001$). In addition, the number of respondents who reported >9 h of sleep per night during SAH was higher than those who reported this duration before SAH (pre: 2.9% [$n = 9$]; during: 11.7% [$n = 36$]; $\chi^2 = 16.2$, $P < 0.001$). There were no changes in respondents reporting

**TABLE 3.**
**Supplement Usage Patterns.**

| | Male | Female | $\chi^2$ (*P*-Value) | D1 | D3 | $\chi^2$ (*P*-Value) |
|---|---|---|---|---|---|---|
| Protein powder | | | | | | |
| Never | 23.50% | 45.8%*** | 22.32 (<0.001) | 28.30% | 53.0%*** | 17.79 (<0.001) |
| Stopped | 16.20% | 6.5%** | 0.89 (0.34) | 12.30% | 8.70% | 8.29 (0.004) |
| Started | 5.90% | 11.20% | 1.35 (0.25) | 11.80% | 7.70% | 2.34 (0.13) |
| Omega-3/fish oil | | | | | | |
| Never | 56.60% | 70.4%** | 13.4 (<0.001) | 59.40% | 77.6%*** | 6.91 (0.009) |
| Stopped | 4.40% | 1.20% | 3.97 (0.046) | 4.30% | 0.55%* | 2.93 (0.09) |
| Started | 3.70% | 3.80% | 1.02 (0.31) | 5.30% | 2.70% | <0.001 (1.00) |
| Multivitamin | | | | | | |
| Never | 39.70% | 47.70% | 14.76 (<0.001) | 36.90% | 57.4%*** | 1.99 (0.16) |
| Stopped | 10.30% | 4.60% | 2.56 (0.11) | 9.10% | 4.40% | 3.81 (0.051) |
| Started | 5.10% | 6.90% | 4.06 (0.044) | 9.60% | 3.8%* | 1.49 (0.64) |
| Vitamin C | | | | | | |
| Never | 41.90% | 53.1%* | 9.13 (0.003) | 43.3%** | 59.60% | 4.02 (0.045) |
| Stopped | 7.40% | 4.60% | 0.37 (0.54) | 7.00% | 4.90% | 0.81 (0.37) |
| Started | 2.20% | 5.20% | 1.35 (0.25) | 6.40% | 3.30% | 1.49 (0.22) |
| Vitamin D | | | | | | |
| Never | 39.70% | 58.5%*** | 12.68 (<0.001) | 44.40% | 63.4%*** | 11.85 (<0.001) |
| Stopped | 6.60% | 4.20% | 0.72 (0.40) | 7.00% | 4.40% | 0.62 (0.43) |
| Started | 3.70% | 4.60% | 0.20 (0.65) | 5.30% | 3.80% | 0.03 (0.88) |
| Creatine | | | | | | |
| Never | 50.00% | 80.4%*** | 2.31 (0.13) | 69.50% | 77.10% | 37.79 (<0.001) |
| Stopped | 6.60% | 0.78%** | 0.082 (0.77) | 3.20% | 2.20% | 9.24 (0.002) |
| Started | 3.68% | 0.78% | 2.24 (0.13) | 3.20% | 1.20% | 2.83 (0.092) |

Significant differences between sexes/divisions are denoted by asterisks.
*$P < 0.05$.
**$P < 0.01$.
***$P < 0.001$.

sleeping 7–9 h per night (pre: 67.4% [$n$ = 207]; during: 79.2% [$n$ = 244]; $\chi^2$ = 3.04, $P$ = 0.081). Despite increased sleep duration, ~24.6% of respondents experienced sleep disturbances during, compared with ~5.7% before, SAH (Fig. 1). Although a similar percentage of respondents from each sex indicated experiencing these disruptions before SAH (females: ~7.4% vs males: ~9.0%), a greater percentage of females experienced lack of sleep onset within 30 min of going to bed (females: 36.7% [$n$ = 77] vs males: 24.2%, [$n$ = 23]; $\chi^2$ = 4.06, $P$ = 0.045), and difficulty sleeping due to racing thoughts/anxiety (females: 30.5% [$n$ = 64]; males: 15.8% [$n$ = 15]; $\chi^2$ = 6.61; $P$ = 0.01) during SAH. There were no differences in sleep aid/medication usage (females: 11.0% [$n$ = 23]; males: 12.6% [$n$ = 12]; $\chi^2$ = 0.053; $P$ = 0.82) or those who indicated "waking up in the middle of the night/really early in the morning" (females: 27.0% [$n$ = 61]; males: 21.6% [$n$ = 24]; $\chi^2$ = 0.30; $P$ = 0.59) between sexes during SAH. Overall, ~20.8% of D3 and ~17.5 of D1 student-athletes reported onset of sleep disruptions during SAH, but there were no significant differences between divisions for any sleep disturbances ($P$ > 0.10).

The percentage of respondents who reported receiving support from a mental health provider before SAH was not significantly higher than those who reported receiving support during SAH (pre: 15.6% [$n$ = 49] vs during: 11.4% [$n$ = 36]; $\chi^2$ = 2.37; $P$ = 0.12). However, more than half of respondents reported feeling "a lot less" or "less" motivated to train (53.2%; $n$ = 166) and reported increased feelings of stress (71.3%; $n$ = 223), general concern (69.2%; $n$ = 216), lack of focus (62.5%; $n$ = 195), and tension (50.6%; $n$ = 158) during SAH. More females indicated increased feelings of general concern, indecisiveness, stress, tension, lack of focus, and unhappiness than did males (Fig. 2A). In addition, significantly more females reported decreased motivation to train during SAH (females: 58.7% [$n$ = 125] vs males: 40.2% [$n$ = 39]; $\chi^2$ = 8.16; $P$ = 0.004). When asked about the psychological impact of continuing to train during SAH, 43.9% ($n$ = 109) of females indicated their training increased their stress levels in contrast to 26.2% ($n$ = 26) of males. Despite the reported increased stress levels, 69.1% ($n$ = 150) of females and 67.7% ($n$ = 67) of males reported that continuing to train increased their feelings of well-being. Although the majority of males indicated they enjoyed their training during the SAH period (62.3%; $n$ = 61), only 49.1% ($n$ = 107) of females indicated the same. In fact, 41.8% ($n$ = 91) of females stated they did "not really" or did "not at all" enjoy training during SAH compared with 27.6% ($n$ = 27) of males. In terms of division, significantly more D3 respondents reported decreased motivation to train (D1: 46.4% [$n$ = 71] vs D3: 59.6% [$n$ = 90]; $\chi^2$ = 4.80; $P$ = 0.03) along with increased feelings of general concern, indecisiveness, stress, tension, lack of focus, and unhappiness (Fig. 2B). In addition, significantly more D1 respondents reported increased feelings of calmness, relaxation, and happiness compared with D3 during SAH.

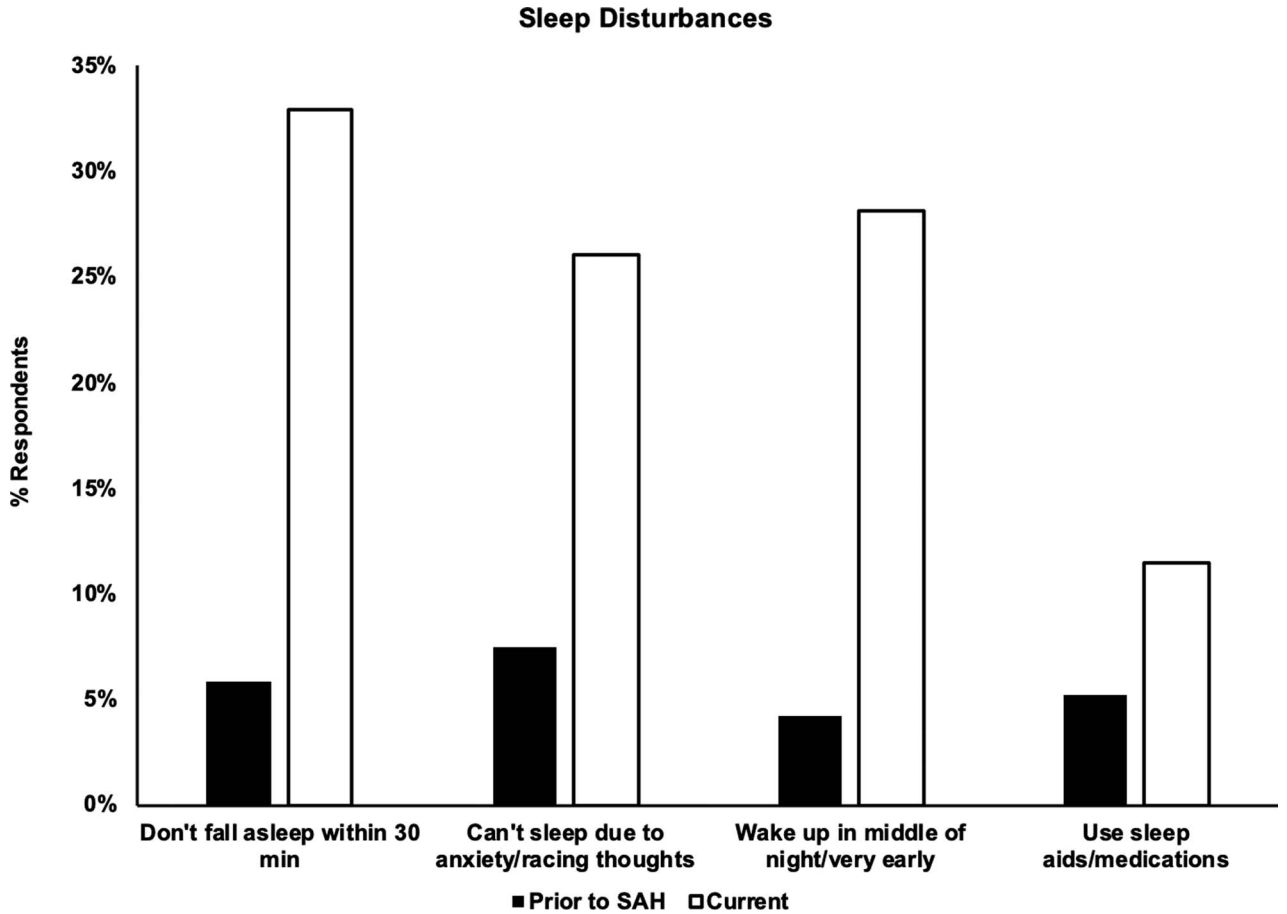


**Figure 1:** Visual depiction of reported sleep disturbances for all respondents ($n$ = 307). Graph displays percent respondents who indicated "only before SAH" and "only during SAH." Respondents who answered "never" and "both before and during SAH" are not displayed.

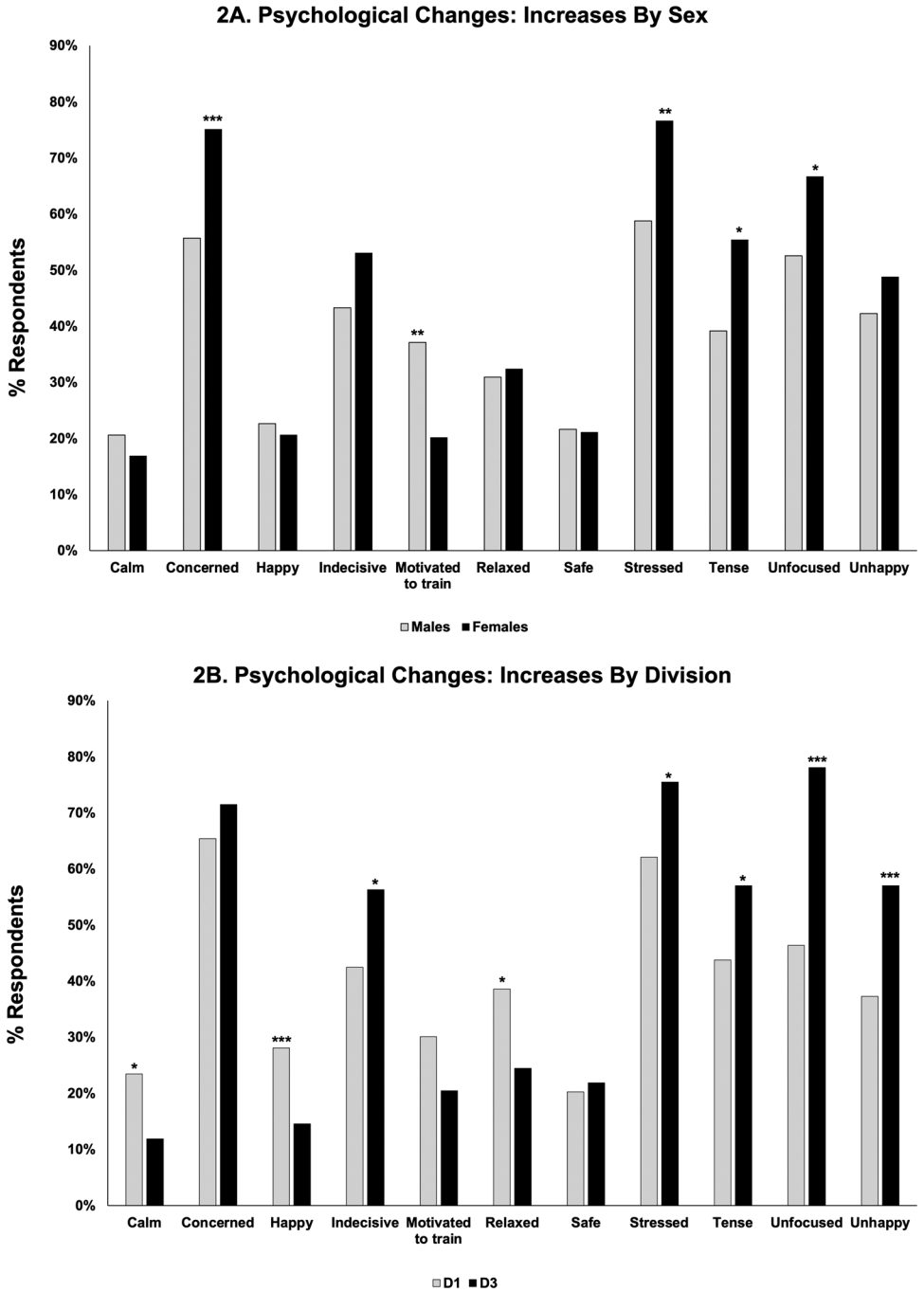


**Figure 2:** A–B, Increases in psychological states during SAH compared with before SAH for (A) males ($n$ = 97) vs females ($n$ = 214), and (B) D1 ($n$ = 153) vs D3 ($n$ = 151). Significant differences between divisions and sexes are denoted by *$P$ < 0.05, **$P$ < 0.01, and ***$P$ < 0.001.

Lastly, when asked about their overall concerns regarding this interruption to training, student-athletes indicated being most concerned about overall fitness levels (71.0%; $n$ = 215), sport-specific skills (69.0%; $n$ = 209), and staying healthy while training at home (68.6%; $n$ = 208). Overall, 56.4% ($n$ = 171) of respondents stated they were concerned about social isolation and 53.8% ($n$ = 163) were concerned about mental health. Significantly more females reported concerns regarding fitness (male: 57.0% [$n$ = 53] vs female: 77.4% [$n$ = 161]; $\chi^2$ = 8.88; $P$ = 0.003), sport-specific training (male: 54.8% [$n$ = 51] vs female: 75.0% [$n$ = 156]; $\chi^2$ = 14.43; $P$ = 0.0001), staying healthy overall (male: 67.5% [$n$ = 54] vs female: 84.4% [$n$ = 152]; $\chi^2$ = 8.66; $P$ = 0.003), and mental health (male: 35.5% [$n$ = 33] vs female: 61.5% [$n$ = 128]; $\chi^2$ = 13.70, $P$ = 0.0002) compared with males. There were no differences in concerns between divisions ($P$ > 0.05) except in regard to scholarships, for which significantly more D1 (35.3%; $n$ = 53) than D3 (20.8%; $n$ = 30) respondents indicated feeling concerned ($\chi^2$ = 10.3; $P$ = 0.001.

## DISCUSSION

This study sought to investigate the impact SAH orders, resulting from the COVID-19 pandemic, had on training, nutrition, sleep habits, and mental health of NCAA collegiate student-athletes. Although restrictions varied across the United States, most student-athletes performed unsupervised at-home training for at least 11–16 weeks before facilities, including universities and public gyms, reopened. Surprisingly, the majority of survey respondents reported training for their sport during SAH, and over half were following specific training programs. When analyzed by competitive division, ~15% more D1 student-athletes received a training plan from an S&C coach at school compared with D3 student-athletes, who were twice as likely to receive a program from their sport coach. In addition, D3 student-athletes had the highest likelihood of designing their own training program. These differences likely reflect the available resources and priorities at D1 compared with D3 schools. Data from the NCAA show that, although the numbers of student-athletes competing in D1 and D3 are similar (182,658 vs. 194,487), there are far more D1 S&C coaches compared with those at the D3 level (D1: 1755; D3: 457) resulting in D3 S&C coaches being responsible for four times more student-athletes than D1 S&C coaches (D1: 104 student-athletes per S&C coach; D3: 426 student-athletes per S&C coach) (21). In addition, D1 student-athletes were most likely to report working with an S&C coach/trainer while at home, which may be a result of the emphasis placed on athletics between divisions in terms of scholarships (22).

Ensuring student-athletes can physically perform their prescribed at-home training program is essential for fitness maintenance and injury risk mitigation upon return to sport (23). Although most participants in the current survey indicated they could perform their prescribed program with little or no modifications, there were large discrepancies between divisions with almost twice as many D1 student-athletes reporting being able to complete their training program without modifications. Although the differences were smaller when comparing sexes (males: 44.6%; females: 36.1%), this finding supports those from an NCAA survey in which 72% of student-athletes cited "access to appropriate equipment" as a barrier to training at home (10). One idea that may serve as "best-practice" going forward would be for the strength coach to survey each athlete to obtain a better understanding of the equipment each person has access to and then modify individual training programs based on these results.

At-home exercise training recommendations during SAH include both cardiovascular and resistance exercise, as well as flexibility and plyometrics (24), to help minimize the detraining that may occur during this extended break. Although the majority of respondents indicated performing resistance training along with cardiovascular exercise, the greater amount of D1 compared with D3 student-athletes who reported using resistance exercise equipment (barbells, dumbbells, kettlebells) may be related to greater access to S&C coaches. With twice as many females not performing any resistance exercise during SAH compared with males, our findings are consistent with research indicating males may place more value on strength training than females (25). However, it is also possible females and D3 student-athletes reported a lower participation rate in resistance exercise solely because of lack of resistance exercise equipment while at home. Despite lack of formal equipment, some athletes were resourceful and reported using implements such as a heavy speaker, soup cans, bags filled with textbooks/bricks/cement blocks, cat litter containers, and laundry detergent bottles filled with sand as weights, whereas others reported doing car pushing and pulling in lieu of formal weight training.

The inability to complete training sessions because of lack of proper equipment and guidance from S&C staff during training sessions may have contributed to the increased perceived stress and decreased perceived effectiveness of at-home training reported by females in this survey. These stressors may be further augmented by the lack of social support during SAH training, as females tend to be more extrinsically motivated than males to exercise (26). A recent study among team-sport athletes during SAH found higher physical activity levels in males compared with females (27), further suggesting female athletes may rely on social support and motivation during training.

Despite increased feelings of stress surrounding training among females, most respondents reported that training during SAH increased their feelings of overall well-being. This is consistent with findings of negative correlations between physical activity levels and stress, depression, and anxiety among athletes during SAH (27). Furthermore, this emphasizes the necessity of training continuity during breaks from team-based activities for both physical readiness and improved psychological states. In fact, research suggests reframing the student-athletes' mindset to use SAH to recover from physical injuries and psychological burnout and focus SAH training programs on maintaining fitness and preventing detraining rather than improving fitness (28). It is imperative for coaches to emphasize that, although SAH training may feel less effective, it is necessary to prevent detraining and reduce injury risk upon return to play.

### Nutrition/Supplements

In addition to training regimens, nutrition patterns and habits during SAH impact performance upon return to school-based training. This is an important consideration as ~39% of college students come from homes facing food insecurity (29) and 24% of male and 18% of female student-athletes reported minimal access to healthy food choices during SAH (10). Although average number of meals consumed per day remained similar, more females indicated eating less, yet perceived their diets to be healthier, during SAH. This pattern may represent beliefs that reduced energy intake constitutes a healthy diet. Because female athletes are at an increased risk for reduced energy availability (30), this reported energy intake restriction should be further investigated, especially as athletes return to heavy training and energy requirements increase.

Although not significant, a greater proportion of females indicated starting new supplements during SAH, whereas more males stopped taking supplements they used before SAH. The slight increases in vitamin C and vitamin D usage among females may be directly related to the COVID-19 pandemic, as vitamin C is known for immune system benefits and a possible connection has been made between vitamin D deficiency and severity of COVID-19 symptoms (31,32). Changes in supplement usage between males versus females and D1 versus D3 were minimal, but the overall discrepancies between usage among males compared with females and D1 compared with

D3 should be noted. The largest difference was seen with protein powder as almost twice as many D1 compared with D3 respondents indicated using protein powder both before and during SAH. However, if total energy intake decreases while away from school, protein intake after exercise may be beneficial for recovery and training adaptations (33). Although student-athletes may seek supplement and nutrition-related information from coaches (34), an estimated 35% of coaches demonstrated adequate sports nutrition knowledge compared with 83% of S&C coaches (35), leaving athletes without access to S&C, such as D3, at a disadvantage. Education regarding health, performance, and recovery optimization through nutrition and supplementation protocols are especially important upon return to campus, as student-athletes reported negative dietary changes during SAH.

### Sleep Habits and Mental Health

In addition to the role of nutrition on recovery, adequate sleep quantity and quality are important for improving performance as well as maintaining a healthy immune system. Sleep issues are not unique to student-athletes, as the current pandemic has been associated with decreased sleep quality among college students (10,17,36–38), with females at higher risk. In general, females are more likely to experience sleep dysfunction (39,40). The increased sleep disturbances, yet increased sleep duration, found in this study are consistent with prior research conducted during SAH (37,38). Poor sleep quality is a concern because of the link between sleep patterns and self-esteem, anxiety, and depression (36). In the current study, both males and females experienced decreases in positive emotions (i.e., motivation to train, happiness) with increases in negative feelings (i.e., tension, concern, stress), which is consistent with findings from other studies among athletes (27,38,41,42). Coupled with the large proportion of student-athletes who cited sleep disruptions, these changes may indicate the need for stress and anxiety management upon return to school-based training.

Student-athletes may need additional mental health support upon return to campus and sport, yet Cox et al. (15) reported 25.7% of college student-athletes said they did not know how or where to access mental health support at their university. Furthermore, 44% of student-athletes reported they did not receive any mental health education from their athletic departments. Although regularly screening athletes for depressive symptoms has been suggested for many years (43), this may be an even more important practice upon return to campus after SAH, as the current pandemic and associated uncertainty are additional stressors for student-athletes. Prior research suggests student-athletes are more likely to discuss these mental health concerns with a coach or athletic trainer as opposed to seeking out a mental health professional, further emphasizing the importance of awareness and monitoring by athletic staff to identify student-athletes in need (43,44).

Perhaps an equally concerning issue is the relationship between depressive symptoms and injury among collegiate student-athletes (45,46). Earlier research suggested various psychosocial factors, such as high trait anxiety or increased life stressors, are related to injury incidence among athletes because of decreased concentration levels and possible physiological disruptions (45–47). This may be particularly important as student-athletes return to team activities, as those who report anxiety and depressive symptoms during preseason are at greater risk for injury (45). Increased injury risk may be further compounded by the poor sleep habits (37), and additional stressors student-athletes are facing upon return to sports after SAH (38,41,48,49). The majority of survey respondents indicated being most concerned with maintaining fitness and sport-specific technical skills while away from their normal training, with more females reporting concerns compared with males. Females were more concerned with mental health and social isolation, as well as injury recovery, despite only 1.3% of females currently participating in physical therapy or rehab exercises.

When looking at competitive divisions, D3 reported higher concern levels relative to D1, with the exception of "scholarship concerns." Specifically, D3 student-athletes reported greater concerns regarding mental health and social isolation, which may be related to the fact that some D3 programs had already suspended fall sports and even the in-person fall semester at the time this survey was conducted. Future research is needed to assess the mental health status of student-athletes, especially for those competing in fall sport whose seasons were canceled or postponed. Athletics staff should be adequately prepared to assist student-athletes with mental health concerns, as the NCAA found only slightly more than half of student-athletes (51%–62%) knew how to access mental health support while at home. Awareness regarding student-athlete's accumulated mental and physical stress upon return to play is critical for coaches/training staff when reconditioning student-athletes after prolonged time away from organized training.

### Limitations

While bringing to light obstacles and opportunities surrounding program design and implementation for both athletes and coaches during unprecedented times, this investigation does have limitations. Although all attempts were made to emphasize the anonymity and confidentiality of respondents, social desirability bias may have impacted responses. Also, the survey was completed online making it inaccessible to any student-athletes without reliable internet access, which could lead to potential biases in the responding sample. In addition, the number of survey requests that individuals were receiving may have led to survey fatigue and decreased sample size for the current study. Survey distribution by an individual with whom the student-athletes had sufficient rapport may have increased response rates, as athletes may be less likely to respond to an unfamiliar e-mail address or social media (e.g., Twitter and Facebook) advertisements. Reading comprehension and language barriers are also a potential limitation, as there was no option to have the questions read aloud to respondents or clarifications made, which may also lead to biases in the sample surveyed. Future investigations should utilize combinations of online and in-person survey distribution with to athletes via pen and paper with an anonymous return/drop-off location, an easily accessible Internet location for completion, options for verbal dissemination, or incentives for survey completion.

Although the results of the current study are generalizable to collegiate student-athletes competing within the NCAA in the United States, the sample demographics are not representative of the overall NCAA student-athlete body (21). Despite this, demographic response patterns of the current study are similar to those of the survey regarding COVID-19 conducted

by the NCAA in May 2020 (10,50) and follow typical survey response patterns of more female than male and White than non-White respondents (50) leading to nonresponse biases. Because of small sample sizes of respondents self-identified as Black or African American, Native American or Alaskan Native, Asian, Native Hawaiian or Pacific Islander, or other, authors were not able to reliably determine potential racial disparities in guidance from S&C coaches, access to resources required to execute training programs, or any other variable measured. Future investigations should seek to determine the existence of any such racial disparity.

## CONCLUSIONS

Overall, this study suggests that, although student-athletes attempted to be diligent with training during SAH, many reported difficulties regarding limited equipment. Although a majority of respondents were living at home with their family during SAH, many still reported suboptimal nutritional habits, sleep quality, and other mental health concerns such as heightened anxiety and decreased motivation. With short notice of university closures and suspension of team sport activities, university athletic department coaches and staff may not have had sufficient time to prepare athletes for completing SAH training. The additional stressors related to maintaining fitness, sport performance, and health affected many student-athletes, although this disproportionately affected females. Reducing anxiety and stress is imperative to help student-athletes refocus on training and healthy behaviors to ensure they return to campus adequately prepared for upcoming competitions.

Ideally, upon return to typical supervised training regimens, conversations between individual student-athletes and a multidisciplinary team of sport coaches, and S&C, nutrition, athletic training, and sport psychology professionals are recommended to determine the student-athlete's overall readiness to return to typical training regimens. Communication should center on student-athlete health and wellness to ensure steps are taken to support long-term on-field viability rather than punishments for failure to complete adequate SAH training. The circumstances also highlight the importance of instilling proper exercise technique and programmatic understanding early in an athlete's career in order to instill autonomy and self-efficacy to perform unsupervised training.

In an attempt to decrease injury risk upon return to sport, reduced training volumes may be necessary, especially for student-athletes who indicate decreased training frequency and/or intensity while at home, along with those who report increased tension, stress, and unhappiness (45). Before the return to school-based and team-based activities, university athletic staff should have psychological and physical screening procedures, such as mental health evaluations and physiological performance testing, to better understand how to progress athletes to reduce risk of injury due to overtraining.

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The authors declare no conflict of interest. The authors have nothing to disclose. The results of the present study do not constitute endorsement by the American College of Sports Medicine. The results of this study are presented clearly, honestly, and without fabrication, falsification, or inappropriate data manipulation.

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# While some NCAA athletes cash in on NIL, others lose out

Submitted by Maria Carrasco on October 12, 2021 - 3:00am

Since the National Collegiate Athletic Association created an interim policy [1] three months ago allowing college athletes to profit off of their name, image and likeness (NIL), some athletes have been cashing in.

One of the biggest beneficiaries of NIL so far is University of Alabama quarterback Bryce Young, who by late July had already earned close to $1 million in endorsement deals, AL.com reported [2]. At California State University, Fresno, women's basketball players Haley and Hanna Cavinder, who are twins, have used their Instagram [3] and TikTok fame [4] to land deals with Six Star Pro Nutrition and Boost Mobile.

Some institutions are even seeing opportunities for entire teams or athletic departments. All female athletes at Brigham Young University now have the opportunity to earn up to $6,000 during the academic year through a brand deal with SmartyStreets, a location data intelligence company. Trent Howell, head of marketing at SmartyStreets, said female athletes who use their social media channels to share information about the company, attend and promote company events, appear as talent in marketing materials, and wear "SmartyStreets swag" will receive payment per activity, earning up to $3,000 per semester [5]. So far, he said, 294 athletes have signed up for the brand deal. He said SmartyStreets CEO and founder Jonathan Oliver chose to connect with all the women in the athletic department because women's sports are typically overlooked.

"He knows that the football team always gets so much of the attention because that's a moneymaker for most schools," Howell said. "He wanted to do something for female athletes."

Proving his point, BYU's athletic department announced in August that the football team had signed a deal with Built Brands LLC, which makes protein bars and other products, that benefits all 123 players on the team -- including walk-ons. The athletes will wear Built branding on their practice helmets and participate in events, as well as post on social media. In return, the company will provide compensation in the amount "comparable to the costs of tuition for an academic year," the department said in a press release [6].

Opendorse, a sports technology company that connects athletes with endorsements, found that since July 1 [7], college football players [8] have signed 60.1 percent of all NIL deals, with women's volleyball in second place at 9.8 percent. Opendorse also found that 47.8 percent of total NIL compensation is awarded for posting content on social media, 19.1 percent goes for licensing rights and 12.8 percent

goes for players' signatures on products.

And when it comes to athletic divisions, Opendorse found the average NIL compensation [9] for Division I athletes in July was $471, while those in Division II earned an average of $81 and those in Division III, $47.

However, as athletes make money from brand deals, some institutions are still struggling to navigate their state laws and regulations as the NCAA works with Congress to create overarching federal legislation, said Adrienne Larmett, a senior manager in Baker Tilly's risk advisory practice focusing on higher education. Regardless of whether legislation on NIL has been signed or taken effect at the state level, all college athletes are now able to profit under NCAA's interim policy. Under the policy, athletes cannot accept NIL deals unless they play, compensation cannot be contingent upon their enrollment at a particular school or their athletic achievement and athletes cannot accept payment from their institution in exchange for use of their name, image or likeness.

However, state laws trump NCAA regulations. In California, Governor Gavin Newsom signed the Fair Pay to Play Act in August, which prevents the NCAA from declaring an athlete ineligible to participate in an NCAA competition just because the student athlete received NIL compensation.

So far, 40 states have either enacted or drafted their own regulations around NIL, according to Baker Tilly's website [10]. For those that don't currently have NIL regulations -- Alaska, Delaware, Idaho, Indiana, Maine, North Dakota, South Dakota, Utah, Wisconsin and Wyoming -- Larmett said it's on institutions in those states to develop their own policies in accordance with NCAA guidelines. And if federal or state legislation on NIL were ever enacted, those institutions from those 10 states would need to revisit those rules, she said.

"While there are many commonalities, if you take a look at all of the regulations either enacted or proposed, there's definitely a lot of nuances to navigate," Larmett said. "And so it's clearly been a moving target and an all-hands-on-deck scenario for many of the schools to respond to."

Last week, players, coaches and administrators testified before Congress as lawmakers consider establishing federal rules [11] to govern college athletics. NCAA president Mark Emmert, in his opening statement, called on Congress to meet the "urgent" need for a "federal framework" around NIL.

But there are issues surrounding NIL that go beyond the question of federal and state regulations, Larmett said. The NCAA's NIL policy was enacted as an unfunded mandate for institutions to manage, meaning some institutions don't have the resources to put it into effective practice. She worries about a growing gap between institutions that have funds to support college athletes -- by providing training in financial literacy, social media and marketing, for example -- and those that don't. That gap might impact how institutions recruit and attract as well as retain top talent, she said.

"The prospects might be looking to attend institutions that have infrastructure and support systems to help them maximize their NIL potential," Larmett said. "Existing student athletes might look to transfer to institutions where those schools have infrastructures to help them."

Larmett said the patchwork of regulations states have adopted could pose challenges to prospective athletes as they try to pick an institution. For example, in West Virginia, NIL regulations require any professional representation to be licensed in the state. So athletes might not be able to use the family accountant for help on taxes if they're not licensed in the state.

Looking ahead, Larmett said she's interested to see what will come out of the NCAA's November summit. And more broadly, she's concerned about possible issues with gender equity and inclusion surrounding NIL, since men's sports typically generate more money than women's.

At a congressional NIL hearing last week, Cameron March, a member of the women's golf team at Washington State University, called on Congress to account in federal legislation for how NIL will impact less visible players.

"I know this too well as a female athlete of color, currently playing women's golf, a sport that isn't the most lucrative or visible," March testified. "This is why I feel as though it'd be wishful thinking to believe that someone like me would ever be on an equal financial playing field as a star quarterback."

Larmett said there also needs to be a focus on how institutions provide mental health and wellness resources for female athletes. Research shows that women struggle with anxiety and other mental health issues more on social media than their male counterparts, which could be exacerbated by the additional pressure to use social media to profit from NIL. She added that a lot of female college athletes are now struggling with "enough-isms," meaning that they often ask themselves if they're "good enough" as a person and as an athlete.

"Schools are recognizing that this is going to probably be something that is going to persist," Larmett said. "Schools need to reinforce their mental health and wellness resources to support their female athletes and just be prepared to adjust the level of support."