# Health Behaviors of Athlete College Students Compared with their Non-Athlete Peers, and their Associations with Depression, Anxiety, and Stress

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**ABSTRACT**
This study compares health behaviors between athlete vs. non-athlete college students and investigates associations of those behaviors with depression, anxiety, and stress. An online questionnaire was administered to 160 students at Haverford College, including 83 athletes and 77 non-athletes. The results show that athletes are more likely to engage in positive health behaviors than non-athletes, including physical activity and muscle-strengthening activities, and eating three meals per day. Regarding negative health behaviors, athletes are more likely to consume alcohol and energy drinks, but less likely to skip breakfast compared to non-athletes. Positive health behaviors are associated with better mental health, including less severe depression and anxiety symptoms. Athletes have less severe symptoms of depression compared to non-athletes, and this difference is largely explained by athletes' greater engagement in positive health behaviors. Overall, college athletes are more likely than non-athletes to engage in positive health behaviors and have less severe symptoms of depression.

**KEYWORDS**
College Athlete Students; Non-Athlete Students; Positive Health Behaviors; Negative Health Behaviors; Mental Health; Depression; Anxiety; Stress

## INTRODUCTION

The college years present students with unique challenges and opportunities regarding their physical and mental health. According to 2023 survey results from the American College Health Association (ACHA), over 30% of college students have been diagnosed with an anxiety disorder, and 24% have been diagnosed with depression.[1] The transition to college is a time of significant change in terms of living situation, academic and peer pressures, and increased independence.[2] This transition may lead to mental health struggles in some students as they may feel overwhelmed by their new responsibilities and feel pressure to integrate into their new academic and social environments. College students are also susceptible to participating in health behaviors that are detrimental to their physical and mental well-being. For example, a survey studying substance use on college campuses found that 39% of college students had engaged in binge drinking in the past month, and the proportion of college students using cannabis regularly more than doubled between 2007 and 2014.[3] Engaging in such behaviors may be at least partially responsible for the increased prevalence of mental health disorders, as studies have shown that risky or unhealthy physical behaviors are associated with worse mental health outcomes.[4] For example, inadequate or irregular sleep is associated with mental health conditions such as depression, anxiety, and stress, and excessive alcohol consumption is correlated with depressive symptoms.[5] Since lifestyle habits are often formed during the college years,[6] identifying harmful health behaviors early allows students to make adjustments at a time in their lives when they may be more able and willing to change, and before irreversible damage to their health has been done. Encouraging healthy behaviors among college students can have major impacts on their physical and mental health both immediately and for the rest of their lives.

The role of athletics in the health behaviors of college students is unclear. For example, research has shown that college athletes are less likely to use marijuana and cigarettes,[7] but more likely to consume alcohol and engage in binge drinking and drinking games,[8] compared to college non-athletes. While athlete students are less likely than non-athletes to smoke cigarettes, they are just as likely as non-athletes to use electronic cigarettes (ECIGs).[9] With respect to eating disorders, most of the relevant studies in the literature suggest that athletes, especially those who are female, have an increased risk of disordered eating.[10] However, another study found that female athletes exhibited fewer signs of disordered eating than non-athletes.[11] While athletes may desire sufficient and consistent sleep in order to achieve peak performance, some investigators have reported that competitive athletes may be more likely than non-athletes to have unhealthy sleep patterns due to competition anxiety, travel schedules, and mandatory

training sessions which may be early in the morning or late at night, thereby making it difficult to get sufficient and consistent sleep.[12]

The literature also reveals mixed findings regarding the relationship between athletic status and physical and mental health. While longer participation in sports is associated with a greater positive association with overall health, participation in sports at a high frequency may hinder emotional and overall health.[13] Some investigators have reported that athlete students may have lower rates of mental health conditions such as depression and anxiety compared to non-athlete students[14] due to greater physical activity and the release of endorphins during exercise, leading to an elevated mood and higher self-esteem.[15] However, it has also been reported that athletes may have worse mental health compared to non-athletes due to the stress they face as well as the stigma against seeking help for mental health concerns.[14, 16]

Since health behaviors such as binge drinking, substance abuse, disordered eating, and irregular sleep patterns are associated with physical and mental health outcomes,[4] and since these behaviors manifest differently in athletes vs. non-athletes, due to such factors as pressure to perform athletically and fitting-in socially with teammates,[17] it is important to study these behaviors in each of these populations. Existing literature has examined some of these health behaviors and mental health disorders among college students in isolation, but the purpose of this study is to compare a relatively comprehensive set of health behaviors between athlete vs. non-athlete college students and investigate associations of health behaviors with the specific mental health conditions of depression, anxiety, and psychological stress.

## METHODS AND PROCEDURES

*Sample*

Study participants consisted of 160 Haverford College students, of whom 68 were male, 85 were female, and seven were non-binary. Fifty-five participants were first-year students, 34 were second-years, 33 were third-years, and 37 were fourth-years. Regarding ethnicities, 108 students self-identified as white, 44 as Asian, 14 as Black, 11 as Hispanic, two as Native American, one as Pacific Islander, and two preferred not to answer. Eighty-three participants were athletes in at least one sport, and 77 were non-athletes. Athlete students were disproportionately white compared to non-athletes. All of the differences between athletes and non-athletes that are reported in this study were not changed by accounting for race, so we do not discuss it further. The athlete vs. non-athlete groups did not differ in terms of gender or year in school, and Haverford College does not have a Greek system.

*Participants and Study Design*

The study protocol was reviewed by the Haverford College Institutional Review Board for Human Subjects Research and the study was deemed exempt from further review. A cross-sectional survey design was used to collect data. The online survey, created using the Qualtrics online survey tool, included questions to gather demographic information, Likert-style questions to measure health behaviors, and previously validated instruments to assess symptoms of depression, anxiety, and psychological stress. Data were analyzed using Jamovi software (version 2.3.21). Athlete students were students at Haverford College who participate in at least one varsity sport (as opposed to club or intramural or no sport participation). By varsity sport we mean an NCAA-regulated official team. Non-athlete students were students at Haverford College who do not participate in at least one varsity sport. Students from all four class years were invited to take the survey.

To gather participants, posters with a QR code to access the survey were posted throughout the college campus. The survey remained open for a two-week period in October 2024. One hundred and five participants received a five-dollar Amazon gift card honorarium upon completion of the survey; this funding was provided by the Haverford College Psychology Department. Following survey completion, participants were brought to a short Google Form where they could insert their email address. As stated on the Google Form, the form was disconnected from students' survey responses so that all responses remained anonymous. To gather additional responses, professors of the Haverford College Psychology Department shared the survey with their students. These students received class credit for survey completion, so they were not compensated financially. 55 students completed the survey via this manner, bringing the total number of participants to 160.

*Measures*

Health Behaviors. The Health Habits Scale,[18] with its 5-point Likert scale, was used to measure health behaviors, with revisions to include negative and positive health behaviors based on a review of the literature[10, 19] and common understanding of everyday health behaviors. Both the Health Habits Scale[18] and our scale include assessment of the following health behaviors: flossing teeth, getting adequate sleep, engaging in physical exercise, overeating, smoking tobacco, and eating unhealthy foods. The Health Habits Scale[18] includes "using hard drugs" while our survey assessed alcohol consumption, binge drinking, and use of cannabis. Our survey also included assessment of the following health behaviors: brushing teeth; wearing sunglasses; using sunscreen; eating breakfast, lunch, and dinner; gambling; skipping breakfast; taking prescription stimulant medications in an unprescribed manner; consuming energy drinks; and engaging in fasting, vomiting, or excessive exercise to control weight.

Participants were asked to select how often they engage in a series of negative health behaviors with five levels of frequency: every day, several times a week, several times a month, several times a year, never. These behaviors were smoking/consuming tobacco products; smoking/consuming cannabis products; alcohol drinking; binge alcohol drinking; consuming energy drinks; consuming foods that are unhealthy (i.e., high in unhealthy fats, added sugars, salts); using methods like fasting, vomiting, or excessive exercise to control their weight; gambling behaviors (including gambling or fantasy sports); taking prescription stimulant medications (e.g., Adderall, Ritalin, Vyvanse) in a way that was not prescribed to them; and skipping breakfast. Each negative health behavior was scored on a scale from one to five, with higher scores indicating lower levels of frequency engaging in that behavior.

Participants were also asked to select how often they engage in a series of positive health behaviors with five levels of frequency: never, rarely, sometimes, often, always. These behaviors were sleeping more than seven hours per day; brushing teeth at least two times per day; flossing at least once per day; wearing sunglasses when out in sun; wearing sunscreen when out in sun; participating in 150+ minutes per week of moderate-intensity or 75+ minutes per week of vigorous-intensity aerobic physical activity (or a combination); participating in muscle-strengthening activities two or more days per week; and eating breakfast, lunch, and dinner. Each positive health behavior was scored on a scale from one to five, with higher scores indicating higher levels of frequency engaging in that behavior.

Mental Health. The Depression, Anxiety, Stress Scales-21 (DASS-21)[20] was used to assess the severity of core symptoms of depression, anxiety, and stress. The DASS-21 consists of 21 items, with seven for each of the three mental health constructs. Items are rated from zero to three, with zero meaning "did not apply to me at all" and three meaning "applied to me very much or most of the time". The item scores for each subscale were summed together to calculate a final subscale score. While we used the continuous scores in our analysis, based on the DASS-21 severity cut-offs (normal, mild, moderate, severe, or extremely severe) for each of the three mental health conditions, both athletes and non-athletes were considered to have normal levels of stress, mild levels of depression, and moderate levels of anxiety.

## RESULTS

We ran a series of t-tests (level of significance was set at an alpha = 0.05) to compare athletes and non-athletes with respect to positive health behaviors, negative health behaviors, DASS-21 total score, and the three DASS-21 subscale scores (for symptoms of depression, anxiety, and stress). These results are reported in **Tables 1 and 2**.

| Variable | Athletes (Mean) | Non-Athletes (Mean) | p-value |
|---|---|---|---|
| **Positive Health Behaviors** | 30.06 | 25.83 | <.001*** |
| Sleep | 3.69 | 3.55 | 0.335 |
| Brushing Teeth | 4.59 | 4.29 | 0.05* |
| Flossing | 3.02 | 2.75 | 0.222 |
| Sunglasses | 2.24 | 2.05 | 0.279 |
| Sunscreen | 2.84 | 3.10 | 0.174 |
| Physical Activity | 4.81 | 3.43 | <.001*** |
| Muscle Strengthening | 4.83 | 3.07 | <.001*** |
| Eat Breakfast, Lunch & Dinner | 4.10 | 3.60 | 0.006** |
| **Negative Health Behaviors** | 39.86 | 41.14 | 0.081 |
| Tobacco | 4.65 | 4.74 | 0.453 |
| Cannabis | 4.28 | 4.36 | 0.622 |
| Alcohol | 3.22 | 3.71 | 0.002** |
| Binge Drinking | 4.38 | 4.61 | 0.077 |
| Energy Drinks | 3.78 | 4.29 | 0.007** |
| Unhealthy Foods | 2.37 | 2.23 | 0.303 |
| Weight Control | 4.59 | 4.68 | 0.480 |
| Gambling | 4.72 | 4.78 | 0.576 |
| Medications | 4.93 | 4.95 | 0.766 |
| Skip Breakfast | 3.34 | 2.84 | 0.027* |

**Table 1. Athlete and Non-Athlete Health Behavior Comparisons.**
Note: Higher scores = healthier behaviors. ***p < .001; ** p < .01; * p = or < .05.

Athletes were found to have better overall positive health behaviors than non-athletes. Regarding the individual positive health behaviors that we tested, athletes were more likely than non-athletes to brush their teeth at least twice per day; participate in 150+ minutes per week of moderate-intensity or 75+ minutes per week of intense physical activity; participate in muscle-strengthening activities two or more days per week; and eat breakfast, lunch, and dinner (see **Table 1**). No significant differences were found

between athletes and non-athletes in overall negative health behaviors, but there were some differences in the individual negative health behaviors. Athletes were found to be more likely to consume alcohol and energy drinks than non-athletes, but were less likely to skip breakfast. Regarding mental health, the mean severity of reported depression symptoms was significantly higher among non-athletes than athletes (see **Table 2**).

| Variable | Athletes (Mean) | Non-Athletes (Mean) | p-value |
|---|---|---|---|
| **DASS Total** | 32.94 | 35.47 | 0.101 |
| **DASS Stress** | 12.40 | 12.60 | 0.735 |
| **DASS Anxiety** | 10.09 | 10.93 | 0.105 |
| **DASS Depression** | 10.46 | 11.93 | 0.029* |

**Table 2. Athlete and Non-Athlete Mental Health Comparisons.**
Note: Higher scores = more severe mental health symptoms. *p < .05

Next, we investigated whether the differences found between athletes and non-athletes were truly due to athlete status, or whether other variables had a covariate effect. There were no significant differences between athletes and non-athletes in gender or class year, meaning these characteristics are evenly distributed in both groups. However, we found that athlete status covaried with race such that athletes were more likely to be white than non-athletes (chi square – 9.192, p < .01), and we also found that white ethnicity exhibited some of the same health behavior findings as athletes. Specifically, white students reported higher scores on total positive health behaviors than students of color (t statistic = -3.183, p = .002) and higher levels of alcohol consumption (t statistic = 2.222, p = .028). Therefore, we ran ANCOVA follow-up analyses with ethnicity as a covariate to determine whether the differences in health behaviors between athletes and non-athletes were still present when controlling for the differences in ethnicity. The ANCOVA for positive health behaviors showed that athlete status was still significant after controlling for ethnicity (F = 27.315, p < .001). Additionally, however, ethnicity was independently associated with positive health behaviors (F = 4.347, p = 0.039). We also ran an ANCOVA test with ethnicity as a covariate to determine whether the difference in alcohol drinking between athletes and non-athletes was still present when controlling for ethnicity. The result of this test showed that athlete status is still significant after controlling for ethnicity (F = 7.375, p = 0.007), but the covariate of ethnicity was not significant (F = 2.400, p = 0.123). This means that the effect seen regarding drinking behaviors was driven by athlete status, not ethnicity. There were no significant differences between whites and non-whites for overall negative health behaviors, DASS-21 total score, or any of the 3 DASS-21 subscale scores.

We then constructed a correlation matrix to investigate the relationship between health behaviors and severity of mental health symptoms (**Table 3**). This showed that positive health behaviors are associated with a lower mean DASS-21 total score, and a lower mean score of the DASS-21 depression and anxiety subscales. There were no significant correlations between negative health behaviors and any of the DASS-21 scores. After this, we conducted exploratory analyses to investigate how the individual positive and negative health behaviors correlate with mental health. We found that participants who use methods like fasting, vomiting, or excessive exercise to control their weight reported a higher mean DASS-21 score (r = -0.213, p = 0.008) and a higher mean symptom severity score for depression (r = -0.180, p = 0.026) and anxiety (r = -0.243, p = 0.002). Based on previous findings in the literature, we also investigated whether there were differences in mental health between participants who drink alcohol regularly, irregularly, or never. To do this, we recoded the alcohol variable so that participants who selected that they drink either every day, several times per week, or several times per month were classified as “regular” drinkers, those who drink several times per year as “irregular” drinkers, and those who selected that they never drink as “non-drinkers.” We found that participants who drank irregularly had higher levels of stress (mean = 13.69, p = 0.049) than participants who drank regularly (mean = 12.50) or never (mean = 11.61).

| | | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| **1. Neg. Health Behaviors** | Pearson’s r | | | | | | |
| **2. Pos. Health Behaviors** | Pearson’s r | 0.109 | | | | | |
| **3. DASS Total** | Pearson’s r | -0.084 | -0.200* | | | | |
| **4. DASS Stress** | Pearson’s r | -0.060 | -0.115 | 0.887*** | | | |
| **5. DASS Anxiety** | Pearson’s r | -0.146 | -0.175* | 0.801*** | 0.621*** | | |
| **6. DASS Depression** | Pearson’s r | -0.025 | -0.217** | 0.859*** | 0.639*** | 0.491*** | |
| **7. Athlete Status** | Pearson’s r | 0.138 | -0.421*** | 0.133 | 0.027 | 0.131 | 0.176* |

**Table 3. Bivariate Correlations between Study Variables.** ***p < .001; ** p < .01; * p = or < .05.

Our previous analyses showed that there were significant correlations among being an athlete, having a lower severity of depression symptoms, and engaging in positive health behaviors. We then assessed whether positive health behaviors acted as a mediator regarding our finding that athletes have a lower severity of depression symptoms than non-athletes. The mediation analysis showed that there was a significant indirect effect ($Z = 2.35$, $p < .05$), which is the path from athlete status to depression through positive health behaviors. As shown in **Figure 1**, the direct effect (the effect of athlete status on depression with positive health behaviors taken into account) was not significant, whereas the effects of athlete status on positive health behaviors and positive health behaviors on depression were each significant, indicating mediation.

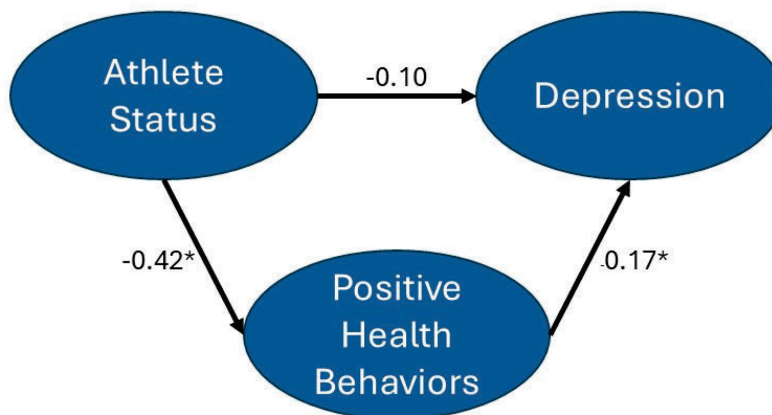


**Figure 1. Mediation Analysis for Depression.**

## DISCUSSION

*Health Behaviors of Athlete and Non-Athlete Students*

The study's results demonstrate that athletes are generally more likely to engage in positive health behaviors than non-athletes, including that athletes are more likely to engage in the recommended amounts of physical activity and muscle strengthening exercises per week; brush their teeth at least twice per day; and eat breakfast, lunch, and dinner (**Table 1**). The findings regarding physical activity and muscle strengthening are not surprising since athletes engage in these activities as part of being on a sports team. It is also not surprising that athletes are more likely to eat breakfast, lunch, and dinner since engagement in higher amounts of physical activity requires a greater intake of calories to maintain strength and weight. A prior study found that students with depression are more likely to have poor oral health habits,[16] and the current study found that the mean severity of depression symptoms was lower among athletes than non-athletes. This could explain, at least in part, why athletes in the current study were more likely to have consistent teeth brushing habits compared to non-athletes.

While the study's results showed no differences between athletes and non-athletes in overall negative health behaviors, there were differences between the two groups in some of the specific negative health behaviors that were analyzed. Specifically, athletes are more likely to drink alcohol and consume energy drinks but are less likely to skip breakfast (**Table 1**). The finding that athletes are more likely to drink alcohol has been reported in previous studies.[8, 21, 22] One reported reason for this is that athletes are more likely than non-athletes to engage in games involving alcohol.[17] Among students who do engage in drinking games, athletes are more likely than non-athletes to state the desire for competition as their motive for playing the games, and both groups are equally likely to cite social lubrication as a motive. Therefore, one reason athletes are more likely than non-athletes to drink alcohol could be that the same desire for competition that draws athletes to participate in sports also drives them to want to win in other endeavors as well, even if those endeavors involve unhealthy activities like drinking alcohol. In addition, student athletes have a built-in friend group with their teammates since they often spend time with one another, and people with greater social connectedness tend to drink more alcohol.[23]

There is little published research regarding energy drink consumption among athletes and non-athletes, but one study found that there was not a significant difference in energy drink consumption based on athletic status.[24] However, that study also found that it is more common for student athletes to state that they use energy drinks to increase athletic performance compared to non-athletes. Therefore, it may be that athletes in the current study were also more likely to consume energy drinks for this reason. A need for energy has been reported to be the most common reason for energy drink consumption,[24] so advertising the unhealthy ingredients present in energy drinks along with healthier ways of feeling more energy, such as prioritizing good sleep hygiene, could have an impact on reducing energy drink consumption in student athlete and non-athlete populations.

*Mental Health Status of Athlete and Non-Athlete Students*

In our study, the mean severity of depression symptoms was lower among athletes than non-athletes. It has been reported previously that the positive effects of exercise on depression are longer lasting than pharmacologic treatments.[15] The athletes in our study engaged in significantly more physical activity compared to non-athletes, which may explain, at least in part, athletes' lesser severity of depression symptoms compared to non-athletes in our study.

While our results showed that athletes had less severe depressive symptoms compared to non-athletes (**Table 2**), we did not find significant differences between athletes and non-athletes in the severity of anxiety or stress symptoms even though prior studies[21, 25, 26] reported less anxiety and stress among athlete compared to non-athlete students. A potential explanation for this is that even though engaging in physical activity acts as a protector against anxiety and stress, the pressure on athlete students to perform well in their sports and to balance their athletic and academic commitments may have negated this effect in our study, leading to no net difference in severity of anxiety or stress symptoms between the athlete and non-athlete students. Another potential explanation is that this study was conducted on a campus of a highly ranked national liberal arts college, where academic pressures are high regardless of athletic status.

*Relationship between Health Behaviors and Mental Health*

The study's results showed that positive health behaviors are associated with better overall mental health, specifically lower levels of anxiety and depression (**Table 3**). After we found correlations among being an athlete, having lower symptom severity of depression, and engaging in positive health behaviors, we tested for mediation and found that the effect of being an athlete on depression is largely explained by athletes' engagement in positive health behaviors (**Figure 1**). This finding indicates that the mental health benefits associated with being an athlete can largely be attributed to the healthy lifestyle choices that athletes are more likely to make. This, in turn, suggests that positive mental health outcomes could result from interventions that promote positive health behaviors among non-student athletes. Strategies such as increasing college opportunities to participate in intramural sports and adjusting class times to make it more convenient for students to eat three meals each day could facilitate student engagement in these healthy behaviors. In addition, research has shown that delaying school start times for adolescent and young adults is associated with increased sleep and decreased depression,[27] so colleges could consider delaying start times for morning classes.

While there were no significant associations between overall negative health behaviors and any of the tested mental health measures, we did find that participants who use methods like fasting, vomiting, or excessive exercise to control their weight are significantly more likely to experience worse overall mental health, including more severe depression and anxiety symptoms. This is consistent with previous research, which found that restricting food intake or purging behaviors often co-occur with mood and anxiety disorders.[28] In addition, we found that irregular alcohol drinkers (those who drink several times per year) had higher levels of stress than regular drinkers or those who never drink. This is in contrast with prior research which reported that drinking high amounts of alcohol increases one's risk for mental health issues,[29] and drinking moderate amounts can act as a buffer against mental health issues, with those who drink occasionally showing fewer mental health symptoms than those who never drink.[5] It is possible that those who drank irregularly in our study reported higher stress symptoms because they do not benefit from alcohol abstinence nor develop the adaption seen in frequent drinkers; alcohol use in this population is counter to their regular routine, which could act as a source of stress. However, given that this is counter to prior research, this is a speculative interpretation that would need to be investigated further.

*Limitations*

While this study was successful in providing information about the health behaviors and mental health symptoms of athlete and non-athlete students at Haverford College, there are several study limitations. Since the study was cross-sectional, it captured data at a single time point rather than changes over time. Thus, while associations could be detected, causality cannot be demonstrated. In addition, participants may have engaged in health behaviors or experienced mental health symptoms differently at the time of testing compared to their averages, which may have influenced their survey responses. Further, the reliance on self-reported questionnaires could have led to biased responses due to participants answering questions based on how they wished they behaved or felt instead of based on their actual situation. This could have affected the accuracy of the data, potentially underestimating or overestimating the associations that were found among athlete status, health behaviors, and mental health. An additional limitation is that there are other variables that could covary with athlete status that we did not measure, such as socioeconomic status (SES), personality traits, and social support. It was not possible to include all potentially relevant variables and still keep the survey sufficiently short to try to maximize our response rate, but including additional variables would have made the study more robust. Lastly, all of the results came from students at a small, private liberal arts college in Pennsylvania, so results could differ at colleges/universities that are larger, public, and/or in different parts of the country. Therefore, future studies could expand the population sample to include students from institutions of various demographics so that interventions can be better targeted to meet the needs of students.

*Future Directions and Applications*

Longitudinal studies are warranted in order to track health behaviors and mental health outcomes over time for athlete and non-athlete students. This would allow for a better understanding of trends, such as in-season vs. out-of-season athlete differences, as well as a better ability to clarify causation. In addition, future research could replace self-reported data with objective measures to enhance data accuracy. For example, participants could wear devices that track physical activity and sleep. Also, other mental health assessments could be added in the future to learn more about sports-specific stress, burnout, and well-being measures. This would allow for a more nuanced understanding of students' mental health. Measurement of other factors that could covary with athlete status (such as SES, personality traits, and social support) could also be added in future studies. This would allow us to better determine the mechanisms explaining various health-related differences between athletes and non-athletes.

These findings can also be used by colleges to implement programs that aim to improve student well-being. For example, mental health resources could be implemented that are tailored specifically towards athletes, such as workshops on managing sports-specific stress or burnout prevention strategies for the most intense part of athletes' seasons. Colleges could also create programs that encourage non-athletes to participate in physical activity, such as intramural sports leagues and fitness challenges. Institutions could also consider peer-support networks that pair athletes and non-athletes to facilitate shared understanding and resilience-building strategies.

## CONCLUSIONS

Our study found that athletes are more likely to engage in overall positive health behaviors, as well as to brush their teeth at least twice per day, engage in physical activity and muscle-strengthening, and eat three meals each day. While athletes did not differ from non-athletes in overall negative health behaviors, they did differ in some of the specific negative health behaviors that were analyzed. Specifically, athletes were found to be more likely to drink alcohol and consume energy drinks, but were less likely to skip breakfast. Positive health behaviors were associated with less severe symptoms of depression and anxiety, and better overall mental health. Lastly, athletes had a lower mean score for severity of depression symptoms compared to non-athletes, and this difference was largely explained by the athletes' greater engagement in positive health behaviors.

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**PRESS SUMMARY**

This study compares the health behaviors of athlete vs. non-athlete students at Haverford College, and investigates how those behaviors relate to depression, anxiety, and stress. The results show that athletes are more likely to engage in positive health behaviors than non-athletes. While there are no significant differences between the composite scores for negative health behaviors between athletes and non-athletes, athletes are more likely to consume alcohol and energy drinks and less likely to skip breakfast compared to non-athletes. Positive health behaviors are associated with less severe depression and anxiety symptoms. Athletes have less severe symptoms of depression compared to non-athletes, and this difference is largely explained by athletes' greater engagement in positive health behaviors. Overall, college athletes are more likely than non-athletes to engage in positive health behaviors and have less severe symptoms of depression.