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Negative Online Experiences and Mental Health Among American College Students: Gender Differences in the 2024–2025 Healthy Minds Study

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Abstract

This study examined gender differences in time spent online for nonacademic purposes, negative online experiences, and their relationships with depression and anxiety among American college students. Data from 84,735 student records in the 2024–2025 Healthy Minds Study were analyzed, including 79,800 students who identified as men or women. Of these, 34,130 answered questions about time spent online, and 30,248 provided information about negative online experiences. Chi-square tests and logistic regression were used to examine gender differences and relationships with mental health while accounting for age, time spent online, race/ethnicity, institutional differences, and multiple comparisons. Men and women reported similar overall rates of negative online experiences (15.1% and 14.6%, respectively; $p = .200$), although certain experiences differed by gender. Women reported higher rates of depressive symptoms than men (36.3% vs. 30.0%) and anxiety symptoms (35.0% vs. 23.7%), with both differences statistically significant ($p < .001$). Students reporting negative online experiences had greater odds of elevated depressive symptoms (aOR = 2.50, 95% CI [2.35, 2.66]) and anxiety symptoms (aOR = 2.38, 95% CI [2.22, 2.55]), even after accounting for other factors. These relationships did not differ significantly between men and women. The findings suggest that negative online experiences are associated with greater depressive and anxiety symptoms among college students, regardless of time spent online. Although women reported higher levels of mental health symptoms, the relationship between negative online experiences and mental health was similar for both genders. Because the study used data collected at one point in time, the findings do not establish cause-and-effect relationships.

Keywords: college students, technology-facilitated abuse, digital harassment, gender, depression, anxiety

Introduction

Online communication is an increasingly routine component of college students' academic, social, and personal lives. Digital spaces can support connection, learning, and access to

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services, yet the same spaces can expose individuals to harassment, cyberstalking, threats, unwanted monitoring, doxing, nonconsensual image sharing, and other technology-facilitated harms. Online exposure time and exposure to negative events are not interchangeable measures: time online indicates duration of engagement, whereas an adverse-experiences battery identifies particular forms of potentially harmful interactions.

A systematic review of cyberbullying among university students described associations with adverse mental health outcomes, while emphasizing heterogeneity in measures and study designs (Arif et al., 2024). In the context of college student health, understanding the content and quality of students' digital interactions may be more informative than considering screen time alone. Oh et al. (2026) used the 2023–2024 Healthy Minds Study to investigate online harassment, screen time, and suicidal ideation. The present study examines a later academic-year cohort, distinguishes multiple forms of negative online experiences, and focuses on elevated depression and anxiety symptom screens.

Gender may be relevant to both online victimization patterns and emotional distress. Particular forms of exposure—including coercive account monitoring, cyberstalking, relationship-related harassment, or encouragement toward self-harm—may not be distributed uniformly across groups. At the same time, differences in reporting, opportunity for exposure, social norms, and the gender composition of the responding sample complicate simple comparisons. A careful analysis therefore requires both an overall experience indicator and separate, appropriately multiplicity-adjusted examinations of less-common harms.

The stress-process framework provides one way to organize these questions: exposure to stressful experiences may be associated with psychological distress, with individual resources and surrounding circumstances potentially shaping that association (Pearlin et al., 1981). This framework guides interpretation but does not establish the direction of associations in cross-sectional data. Research focusing on Black undergraduates has additionally documented online racial discrimination and its links to mental health (Grapin et al., 2024). This study examined negative online experiences, regardless of whether students believed they were related to their race or ethnicity. Race/ethnicity was included in the statistical analyses to account for differences among students, but the study did not determine whether these experiences were racially motivated.

This study addresses three gaps: identifying which specific adverse online experiences differ by gender, examining depressive and anxiety symptom-screen outcomes separately, and testing whether the association of online harm with symptoms changes by gender after accounting for online duration and selected demographic indicators. The analysis uses a large, multi-institutional respondent dataset, while carefully distinguishing its analytic subsamples from nationally representative estimates.

Purpose and Research Questions

The purpose was to examine relationships among gender, nonacademic online-use duration, negative online experiences, and depression and anxiety symptom screens in the 2024–2025 Healthy Minds Study.

RQ1. Do male and female college students differ in the amount of time they spend online each day for nonacademic purposes?

RQ2. Do the overall prevalence and specific types of negative online experiences differ between these groups?

RQ3. Are negative online experiences and online-use duration associated with elevated depression and anxiety screens after adjustment for gender, age, and race/ethnicity indicators?

RQ4. Does the relationship between negative online experiences and symptoms of depression and anxiety differ between male and female college students?

Methods

Design and Participants

Data for this study were obtained from the 2024–2025 Healthy Minds Study, which included 84,735 student records from 135 participating colleges and universities. The analysis focused on 79,800 students, including 23,445 men and 56,355 women. Gender was determined using responses to the questionnaire's gender-identity items. Students who identified as both men and women were excluded from the comparison, while those who selected additional gender identities were retained. Therefore, the findings are limited to the male and female comparison and do not represent all gender identities. Among the students included in the study, 34,130 reported how much time they spent online, and 30,248 met the criteria for examining negative online experiences during the previous year. Because not all students completed the internet-related questions, and the reasons for missing responses could not be determined, the analyses were limited to students who provided the relevant information.

Measures

Nonacademic online duration (internet_1) referred to time spent in online spaces outside school or work during the preceding week and comprised eight ordinal categories: not at all, <1 hour, 1–2 hours, 2–3 hours, 3–4 hours, 4–6 hours, 6–9 hours, and at least 10 hours daily. For regression among online users, categories were grouped as <2 hours (less than 1 or 1–2 hours), 2–4 hours (2–3 or 3–4 hours), and ≥4 hours (4–6, 6–9, or ≥10 hours). These are categorical bands and should not be interpreted as continuous hours.

Negative online experiences were recorded as select-all-that-apply indicators (internet_2_1–internet_2_14). The first response indicated no negative experience; the subsequent indicators represented nonpartner harassment, dating-partner harassment, nonconsensual sharing of intimate images, AI-generated explicit or embarrassing imagery, doxing, coercive account control, group harassment, encouragement toward suicide (“flaming”), swatting, cyberstalking, covert monitoring, sextortion, and another response. The primary composite defined any substantive harm as endorsement of one or more listed experiences in options 2–13. For students who answered at least one question about negative online experiences, items they did not select were counted as experiences they had not reported. Students who did not answer any of these questions were excluded from the analysis rather than being classified as having no

negative experiences. Responses in the "other" category were reported separately and were not counted by themselves as evidence of a negative online experience in the main analysis.

Depressive symptoms were scored as the sum of nine PHQ-9 items and anxiety symptoms as the sum of seven GAD-7 items. Recorded responses of 1–4 were converted to 0–3 and summed when all required items were present. Scores ≥10 identified elevated depressive or anxiety symptom screens, not clinical diagnoses. Age was modeled per 10-year increment. Race/ethnicity adjustment included multi-response indicators for Black, American Indian/Alaska Native, Asian, Hispanic/Latino, Native Hawaiian/Pacific Islander, Middle Eastern/North African, and other racial identification, with White selection omitted as a redundant reference indicator; respondents could select multiple categories.

Statistical Analysis

All frequencies and percentages reported in this study were based on the actual number of students who responded, without applying sample weights. Chi-square tests were used to compare male and female students in time spent online, negative online experiences, and symptoms of depression and anxiety. Fisher's exact tests were used to examine gender differences across 12 specific types of negative online experiences. Statistical adjustments were made to reduce the likelihood of detecting significant differences by chance.

Logistic regression analyses were conducted to examine whether negative online experiences were associated with elevated symptoms of depression (PHQ-9 score of 10 or higher) and anxiety (GAD-7 score of 10 or higher). These analyses accounted for students' gender, age, race/ethnicity, and time spent online. Additional analyses examined whether the relationship between negative online experiences and mental health differed between men and women. The regression analyses also accounted for similarities among students attending the same college or university, with 134 institutions represented. Only students with complete information for the variables being examined were included in each analysis.

Although the Healthy Minds Study provides sample weights, these analyses were conducted without weighting because the suitability of the weights for students who completed the internet-related questions had not been established. Therefore, the findings describe the students included in the study and should not be interpreted as representing all college students nationwide. Because the data were collected at one point in time, the results identify relationships between negative online experiences and mental health but cannot establish cause and effect.

Results

Participants and Data Availability

Of 84,735 source records, 79,800 fulfilled the specified man/woman indicator selection rule (23,445 men; 56,355 women). Among those respondents, 34,130 reported online duration (10,066 men; 24,064 women). A total of 30,248 respondents answered the eligible negative-experiences battery (8,913 men; 21,335 women). Complete PHQ-9 screens were available for 69,847 respondents, and complete GAD-7 screens for 69,486. Sample size varied by outcome because of questionnaire routing and missing responses.

Table 1. Respondent Selection and Analytic Samples

Sample/measure	Total	Men	Women
Source HMS records	84,735	—	—
Selected man/woman subgroup	79,800	23,445	56,355
Online duration available	34,130	10,066	24,064
Eligible negative-experience battery	30,248	8,913	21,335
Complete PHQ-9	69,847	20,269	49,578
Complete GAD-7	69,486	20,105	49,381
Depression regression	29,372	—	—
Anxiety regression	29,469	—	—

Note. Gender group denotes exclusive selection between the man and woman indicators, not exclusion of other simultaneously selected identities. Regression cells omitted by gender because model-specific split is not shown.

Nonacademic Online Time

The eight-category online-time distribution differed by gender, $\chi^2(7, N = 34,130) = 143.56$, $p < .001$. Among online-time respondents, 37.5% of men and 33.5% of women reported four or more hours daily. The association was statistically detectable in the large sample, but the descriptive differences should be interpreted in light of high nonresponse to the internet module.

Table 2. Daily Nonacademic Online Duration by Gender

Duration category	Men (n = 10,066)	Women (n = 24,064)
Not at all	342 (3.4%)	733 (3.0%)
<1 hour	678 (6.7%)	1,535 (6.4%)
1–2 hours	1,587 (15.8%)	4,190 (17.4%)
2–3 hours	1,912 (19.0%)	4,792 (19.9%)
3–4 hours	1,773 (17.6%)	4,759 (19.8%)
4–6 hours	1,837 (18.2%)	4,342 (18.0%)
6–9 hours	943 (9.4%)	2,142 (8.9%)

≥10 hours	994 (9.9%)	1,571 (6.5%)

Note. Pearson $\chi^2(7) = 143.56$, $p < .001$. Percentages are within-gender among item respondents.

Negative Online Experiences

At least one of the 12 specified negative online experiences was endorsed by 1,349 of 8,913 men (15.1%) and 3,107 of 21,335 women (14.6%); the difference was not statistically significant, $\chi^2(1, N = 30,248) = 1.64$, $p = .200$. The absence of an overall difference concealed differences for selected individual harms. Men reported higher percentages of doxing, group harassment, encouragement toward suicide, and sextortion, whereas women reported more cyberstalking. Because several event categories were sparse, individual comparisons were evaluated by Fisher exact tests and adjusted for 12 comparisons.

Table 3. Specific Past-Year Negative Online Experiences by Gender

Experience	Men	Women	Fisher p	FDR q
Harassment, non-dating partner	924 (10.4%)	2023 (9.5%)	0.019	0.033
Harassment by dating partner	220 (2.5%)	542 (2.5%)	0.748	0.748
Nonconsensual sharing of real intimate images	111 (1.2%)	292 (1.4%)	0.410	0.492
AI-generated explicit or embarrassing images	43 (0.5%)	90 (0.4%)	0.505	0.550
Doxing	115 (1.3%)	168 (0.8%)	<.001	<.001
Coercive control of accounts	66 (0.7%)	222 (1.0%)	0.014	0.033
Group harassment or roasting	218 (2.4%)	460 (2.2%)	0.125	0.188
Encouraged toward suicide (flaming)	142 (1.6%)	136 (0.6%)	<.001	<.001
Swatting/false emergency report	31 (0.3%)	53 (0.2%)	0.150	0.200

Cyberstalking	182 (2.0%)	871 (4.1%)	<.001	<.001
Covert cybermonitoring	64 (0.7%)	215 (1.0%)	0.017	0.033
Sextortion	99 (1.1%)	110 (0.5%)	<.001	<.001

Note. Denominators are 8,913 men and 21,335 women answering the battery. The 12 tests were corrected by the Benjamini–Hochberg procedure; "other" and "no negative experience" are excluded from this table.

Depressive and Anxiety Symptom Screens

Elevated depressive symptoms (PHQ-9 ≥10) were recorded among 6,084/20,269 men (30.0%) and 17,981/49,578 women (36.3%); $\chi^2(1, N = 69,847) = 249.00$, $p < .001$. Elevated anxiety symptoms (GAD-7 ≥10) were recorded among 4,764/20,105 men (23.7%) and 17,298/49,381 women (35.0%); $\chi^2(1, N = 69,486) = 847.01$, $p < .001$. These represent symptom-screen thresholds, not prevalence of diagnosed disorders.

Table 4. Elevated Depression and Anxiety Symptoms by Gender

Outcome	**Men, n/N (%)**	**Women, n/N (%)**	**Pearson χ^2**	**p**
PHQ-9 ≥10	6,084/20,269 (30.0%)	17,981/49,578 (36.3%)	249.00	<.001
GAD-7 ≥10	4,764/20,105 (23.7%)	17,298/49,381 (35.0%)	847.01	<.001

Note. Complete symptom screens only; these are screening indicators rather than diagnoses.

Adjusted Associations and Gender Interactions

Students who reported negative online experiences were more likely to report symptoms of depression (aOR = 2.50, 95% CI [2.35, 2.66], $p < .001$) and anxiety (aOR = 2.38, 95% CI [2.22, 2.55], $p < .001$). Students who spent the most time online each day also had higher odds of reporting depression (aOR = 2.35) and anxiety (aOR = 1.67) compared with students who spent less than two hours online daily. Women were more likely than men to report symptoms of both depression and anxiety, even after accounting for other factors. These relationships remained statistically significant after considering students' age, race/ethnicity, and differences among participating institutions. However, other factors not included in the analysis may also influence these findings.

Table 5. Main-Effects Institution-Clustered Logistic Regression Models

Predictor	**PHQ-9 aOR (95% CI)**	**p**	**GAD-7 aOR (95% CI)**	**p**
Woman vs man	1.41 (1.33–1.50)	<.001	1.80 (1.66–1.95)	<.001

Any substantive online harm	2.50 (2.35–2.66)	<.001	2.38 (2.22–2.55)	<.001
Online duration 2–4 h vs <2 h	1.37 (1.27–1.49)	<.001	1.19 (1.08–1.31)	<.001
Online duration ≥4 h vs <2 h	2.35 (2.11–2.62)	<.001	1.67 (1.51–1.85)	<.001
Age per 10 years	0.94 (0.90–0.98)	0.006	0.91 (0.88–0.94)	<.001

Note. Depression n = 29,372; anxiety n = 29,469; 134 institutions. All models additionally adjust for seven multi-response race/ethnicity indicators. Estimates are unweighted.

The analyses also examined whether the relationship between negative online experiences and mental health differed between men and women. No statistically significant gender differences were found in the relationship between negative online experiences and depression (OR = 1.05, 95% CI [0.90, 1.23], p = .534) or anxiety (OR = 0.88, 95% CI [0.77, 1.01], p = .069). These findings suggest that the relationships were generally similar for men and women, although the results do not establish that they were identical. The anxiety results were closer to statistical significance but did not meet the established threshold. In these analyses, the main effect estimates represent the reference gender group rather than all students in the study.

Table 6. Gender-by-Negative-Experience Interaction Models

Outcome	**Harm aOR in men (95% CI)**	**Woman × harm OR (95% CI)**	**Interaction p**
PHQ-9 ≥10	2.41 (2.10–2.76)	1.05 (0.90–1.23)	0.534
GAD-7 ≥10	2.61 (2.32–2.92)	0.88 (0.77–1.01)	0.069

Note. Models also include gender, online duration, age, and seven race/ethnicity indicators; standard errors clustered by institution. Harm aOR in men is conditional on the reference group.

Discussion

The findings from this study provide important information about gender differences in online activities, negative online experiences, and mental health among college students. Four major findings emerged. First, men and women differed significantly in the time they spent online for nonacademic purposes, although these differences varied by the time reported. Second, men and women reported similar overall rates of negative online experiences, with approximately 15% of students reporting at least one harmful experience. Third, differences were found between men and women in the types of negative online experiences they reported. Finally, students who reported negative online experiences were more likely to experience symptoms

of depression and anxiety, even after accounting for gender, age, race/ethnicity, and time spent online.

These findings suggest that what students experience online may be just as important as how much time they spend online when examining mental health. Students who reported negative online experiences had higher odds of depression and anxiety, even after accounting for time spent online. However, these findings do not establish that negative online experiences directly cause depression or anxiety. Students experiencing mental health difficulties may be more sensitive to negative online interactions, or harmful online experiences may contribute to existing mental health concerns. Other personal, social, or institutional factors may also influence these relationships. Because the study collected information about online experiences and mental health during the same survey, it was not possible to determine which occurred first.

Gender Differences Across Specific Harms

Although men and women reported similar overall rates of negative online experiences, important differences emerged when individual experience types were examined. Women were more likely to report cyberstalking, while men reported higher rates of several other less common harmful online experiences. These findings suggest that men and women may encounter different types of online threats, even when their overall rates of negative experiences are similar.

The findings also demonstrate the importance of examining individual online experiences rather than combining all harmful experiences into a single category. Different forms of online harassment, stalking, threats, and other harmful interactions may affect students in different ways. Additionally, some experiences were reported by relatively few students, making it important to interpret those findings carefully. Even when an experience is uncommon, it may still have serious consequences for the students involved.

Online Encouragement Toward Suicide

One particularly concerning finding involved students who reported being encouraged online to attempt suicide, an experience identified as "flaming" in the Healthy Minds Study questionnaire. This experience was reported by 142 of 8,913 men (1.6%) and 136 of 21,335 women (0.6%). The difference between men and women was statistically significant ($p < .001$) and remained significant after adjustments for multiple comparisons ($q < .001$).

Although only 278 of the 30,248 students reported this experience, the findings deserve attention because of the potentially serious nature of such online interactions. Men were more likely than women to report this experience, but the overall number of students reporting it was relatively small. The survey did not provide information about who was responsible, how often these incidents occurred, or whether students experienced suicidal thoughts or behaviors afterward. Therefore, the findings should not be interpreted as evidence that these online encounters caused suicidal behavior.

Nevertheless, these results highlight the importance of helping college students recognize and respond to potentially dangerous online interactions. Colleges and universities should ensure

that students know where to seek confidential counseling, how to report threatening online behavior, and how to access emergency mental health services when needed. Additional research is needed to better understand the circumstances surrounding these experiences and their possible effects on student well-being.

Implications for College Health and Student Affairs

The findings have important implications for college administrators, counseling centers, student affairs professionals, and campus health programs. Because negative online experiences were associated with higher levels of depression and anxiety, colleges and universities should consider online safety as part of their broader efforts to support student mental health.

Campus counseling centers and student affairs offices should work together to provide students with information about cyberbullying, cyberstalking, online harassment, threats, and other harmful digital interactions. Students should have access to confidential support services and clear procedures for reporting online threats. Faculty and staff may also benefit from training to recognize signs of online harassment and direct students to appropriate campus resources.

The findings further suggest that programs addressing student internet use should focus on more than the amount of time students spend online. Although spending more time online was associated with higher levels of depression and anxiety, harmful experiences were also related to these symptoms after accounting for online duration. Therefore, encouraging students to reduce screen time alone may not adequately address the mental health concerns associated with negative online interactions. Campus programs should also emphasize safe online communication, privacy protection, recognizing harmful behavior, and accessing assistance when negative experiences occur.

Colleges and universities should also recognize that students may experience online threats differently depending on their backgrounds and personal circumstances. Previous research has identified differences in access to mental health services and the effects of online racial discrimination among Black college students (Grapin et al., 2024; Van Doren et al., 2024). However, the present study did not determine whether students' negative online experiences were motivated by race, gender, or other personal characteristics. Therefore, these findings should not be interpreted as evidence that the reported experiences involved discrimination.

Overall, the findings emphasize the importance of including online safety and negative digital experiences in campus mental health initiatives. By improving awareness, strengthening student support services, and providing clear reporting and referral procedures, colleges and universities may be better positioned to address students' concerns about harmful online interactions. Future research should examine how specific types of negative online experiences relate to mental health over time and identify which campus programs are most effective in supporting affected students.

Limitations

Several limitations qualify interpretation. The study is cross-sectional and uses self-report questionnaires with nonidentical recall periods. The internet module was answered by only a

subset of the source sample, and the reasons for its nonresponse and routing could not be established in this extract. Within that subset, further exclusions for battery response and complete depression/anxiety items could introduce selection bias. Analysis did not employ validated survey weights, so results cannot be treated as population-representative national estimates. Institution-clustered robust standard errors address within-institution correlation but do not by themselves remedy nonresponse bias. The comparison uses respondents selecting only one of two man/woman indicators and does not characterize gender-diverse students fully. Race/ethnicity was selected using multi-response items and modeled as overlapping indicators. Rare-event estimates have limited absolute counts; the FDR procedure reduces, but does not eliminate, concerns about multiplicity and exploratory interpretation. Finally, unmeasured confounders and uncertainties about event severity and timing constrain interpretation of the adjusted regressions.

Conclusion

Among a large sample of respondents to the 2024–2025 Healthy Minds Study, the overall prevalence of specified negative online experiences was similar across the man and woman groups, but several individual harms differed. Negative online experiences were associated with elevated depressive and anxiety symptoms independently of nonacademic online duration and selected covariates. No statistically significant gender moderation was established in the fitted models. The findings underscore the importance of understanding the nature of digital experiences alongside students' time online, while supporting careful, noncausal interpretation and future survey-design-adjusted replication.

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