



# Internet use 101 in college: Do undergraduates want to learn healthier internet use?<sup>☆,☆☆</sup>

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## ABSTRACT

**Background:** Internet overuse is an emerging public health emergency, especially for college students in the United States. The purpose of this study was to assess college students' internet usage and interest in learning healthy internet usage skills as part of a college curriculum.

**Study design:** Participants completed an online anonymous questionnaire which included the short version of the Internet Addiction Test, a modified Youth Health Movement survey, and questions regarding their interest in healthy internet use coursework.

**Methods:** A total of 402 participants were recruited via an email LISTSERV of current undergraduates and recent graduates who had taken at least one class within a child and adolescent mental health studies minor while enrolled in a large university.

**Results:** Overall, 70% of participants reported that they use the internet excessively, and a majority of participants reported that internet use has negatively affected their sleep and increased their anxiety. Seventy percent of participants reported that they would benefit from instruction on healthy internet usage via formal courses for credit or online modules.

**Conclusions:** Students are aware of the difficulty in managing their internet use in college and are motivated to engage in novel courses on healthy internet usage. Academic institutions should consider developing courses or modules on healthy internet use.

## 1. What this study adds

- The scale of college students and recent graduates struggling with internet overuse appears significantly higher than expected, with nearly three-quarters of students self-reporting excessive internet use
- Undergraduate students are motivated to learn ways to manage their internet usage
- Universities are not currently providing easy access to students to learn methods of managing internet usage

## 2. Implications for policy and practice

- Universities should prioritize development of coursework, modules, or other educational methods to teach students healthy internet usage skills
- "Meeting students where they are" by providing these resources as required coursework can help students develop future patterns of healthy internet usage
- Internet overuse by students in high school and elementary school should also be assessed to determine whether these interventions should be provided at even younger ages

Internet overuse is common among university students. In the United

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States, ~20% report problematic internet use or internet gaming disorder, and 10% endorse negative academic effects [1,2]. In university students, excessive internet/smartphone use is associated with lower grade point averages, alcohol use disorder symptoms, increased impulsivity, loneliness, anxiety and depression, obesity, poor sleep quality, and increased suicidal thoughts and behaviours [3].

Nevertheless, most university students do not receive any education in how to manage their internet use. In contrast to alcohol and substance use disorders, resources for students about healthy internet use are sparse in US universities, and research regarding university students' perceived benefit from courses focused on healthy internet use is lacking [2]. Yet, prior work suggests that a university course can positively impact students' nutrition choices, sleep habits, and even seatbelt usage [4].

To address this gap, we completed a cross-sectional study surveying students and recent alumni of a large US private university in the New York City area on their cell phone and computer usage; we collected the short version of the Internet Addiction Test (s-IAT), and inquired regarding the desirability of education on healthy internet use in university [5]. We also obtained participants' preferences on the format of such education and topics of interest.

### 3. Methods

We conducted a 12-question anonymous survey via Qualtrics to assess students' perceptions of electronic device use and their interest in receiving formal education on healthy internet use.

#### 3.1. Ethics

The protocol for this study was reviewed by the corresponding institutional review board (IRB) and classified as exempt research as no identifiable information was collected. The authors have no funding associated with this study to report, nor do they have any competing interests to disclose.

#### 3.2. Participants

Participants were recruited via email to a university LISTSERV of current and past students who had taken at least one class within a child and adolescent mental health studies minor at a large university in the New York City area. Courses in the minor focus on mental health topics relevant to children and adolescents. Although open to all students, the courses are predominantly taken by students concentrating in psychology, social work, or education.

Interested participants were redirected to an online consent and survey via Qualtrics. Informed consent was required to access the survey. Data were collected anonymously. Participants were able to skip any questions or parts of questions and were able to stop the survey at any time. A sample of 656 prospective participants clicked on the Qualtrics link; 402 (61%) consented and completed the questionnaire.

#### 3.3. Measures

**Time spent online.** Participants were asked the number of hours they spend on their computers and their smartphones, with the latter preferably obtained by retrieving usage data directly from their phones. Time on computer was based upon student estimates; they were not asked to specify the percentage of time spent on classwork or learning activities versus entertainment, social media, or similar activities. Participants were also asked, "do you think you use the internet too much?", to which they could answer yes, not sure, or no.

**s-IAT.** The Short Version of the Internet Addiction Test (s-IAT) is a 12-item, 5-point Likert questionnaire [Never (1) to Very often (5)] assessing internet use by adapting questions from gambling disorder criteria [5]. This validated measure has been used in numerous studies

and has demonstrated high incremental validity [1,5]. The s-IAT score is the sum of the 12 answers; 60 is the maximum possible score. A score above 37 indicates "pathological" internet use; a score above 30 suggests "problematic" use; and 30 and below constitutes normal use. Participants could opt to receive their s-IAT designation after completion.

**YHM.** The Royal Society of Public Health's Young Health Movement (YHM) survey was designed to capture youth perceptions of social media effects on 14 wellbeing factors [6]. While the validity and reliability of this survey have not been directly studied, the questions were created by an expert panel for the Royal Society for Public Health [6]. We modified the YHM survey slightly by referencing "the internet" instead of specific online platforms to also encompass smartphone apps. Participants were asked, "Tell us if internet use makes certain psychological and health-related factors better or worse for you," and rated each as worse, no effect, or better. Finally, participants were asked: "Would college students benefit from education on healthy use of electronic devices?"; "What format would students learn best in?"; "What would be useful to learn?"

### 4. Results

Given the nature of this study to assess students' internet use and interest in learning about healthy internet usage, we planned to complete descriptive statistical analyses of participants' demographic data, their internet usage, their responses to the YHM and s-IAT, and their reported educational interests regarding healthy internet usage.

#### 4.1. Demographic data

Participants were  $21.1 \pm 2.1$  (mean  $\pm$  SD) years old; 75% female, 22% male and 3% other/declined. Most were undergraduate (66%); 28% had a bachelor's degree, and 4% had received graduate degrees.

#### 4.2. Internet usage and s-IAT results

In terms of usage, participants reported spending an average of  $5.3 \pm 2.7$  h daily on their smartphones *plus* an average of  $5.3 \pm 3.4$  h daily on their computers, for an average of over 10 h of total screen time per day. Overall, 70% responded "yes" to "do you think you use the internet too much?"; 15% responded "not sure;" and 15% responded "no." Interestingly, the average s-IAT score was  $28.4 \pm 7$  (range 11–55), with 63% scoring in the normal range, 27% categorized as problematic and 11% as pathological.

#### 4.3. YHM results

On the YHM, participants reported that their internet use negatively affected sleep (77%). Many also reported Fear-of-Missing-Out (FoMO) (66%), high levels of anxiety (55%), worsening body image (59%) and loneliness (45%) as consequences of internet use.

#### 4.4. Interest in education on healthy internet usage

Seventy percent of participants responded that university students would benefit from education on healthy use of electronic devices, 21% were unsure, and 10% opined that university students would not benefit from such education. Those who agreed that education on healthy internet use would be beneficial were asked about content and format. Participants could select multiple answers. The top four content topics were "how social media shapes behaviours" (71%), "how to change habits surrounding device use" (69%), "how to have healthier sleep habits" (65%), and "health consequences of excessive use of electronic devices" (65%). Regarding format, respondents equally favoured a one-time module (65%) and a for-credit course on the topic of healthy internet use (65%). About one-third (30%) favoured attending workshops in student residence halls.

## 5. Discussion

To our knowledge, this is the first study to examine university students' perceptions of their internet use and preferences for internet use education. As noted below, this study adds to our existing knowledge by elucidating college students' motivation to learn specific techniques to use the internet in a healthier manner, which has not been previously assessed.

### 5.1. Time spent online

Most participants (70%) felt that they were overusing the internet; while only about one-third (38%) reported problematic or pathological use, together these results indicate that a majority of students believe that their internet usage falls into a potentially problematic area, consistent with other studies of US university students [1]. The sub-clinical level of internet overuse may be a prime target for education-based intervention, so that students can learn healthy internet usage techniques before their behaviours reaches a level that cause clinical impairment [2].

Participants reported spending an average of more than 5 h per day on their phones, in addition to a similar amount of time on their computers; while this level of usage may seem high, it is in line with data reported in other studies, especially since the covid-19 pandemic [7]. Since the majority of college students' work must be completed electronically, and the temptation to play games or other activities while trying to complete work is high, the line between worktime and entertainment easily blurs [7]. These online activities negatively impacted their sleep, increased anxiety and FOMO, worsened body image, and increased loneliness.

## 6. Students' motivation for internet use education

Almost three-quarters agreed that university students would benefit from education on healthy internet use. Most expressed interest in formal courses for credit or online modules, focusing on social media's impact, habits surrounding device use, and improving sleep. Indeed, other health-related psychology courses that include experiential components, such as yoga and hiking, have been found to lead to sustained improvement in students' health [8,9].

## 7. Limitations

Although these are the first data to highlight university students' interest in learning healthy internet use strategies, this study has several limitations. Given the anonymous nature of the process, we could not confirm that students retrieved their smartphone usage data and computer use data were explicitly estimates, thus usage reports may not be precise. However, our results were consistent internally and with other studies [1,2,7,10]. Although some participants were not current students, the data are still largely representative of university students. Finally, since participants had all enrolled in at least one course regarding child and adolescent mental health, they might have a stronger interest in mental health compared to the overall student population. Despite these limitations, our study highlights students' interest in receiving more education on healthy internet use.

## 8. Future directions

The next step in this line of research is for universities to begin developing and piloting educational courses on healthy internet usage in various formats. Universities should assess not only how well the different formats are received by students, but follow up on students' internet usage throughout each year of their undergraduate career. Ideally, universities would develop a flexible set of mandatory healthy internet usage trainings that allow students choice in how they receive this information while also ensuring all students receive the education, and continue following up on students' internet usage, offering booster courses or higher-level interventions as needed (e.g., referrals to therapy) to help students develop a healthy relationship with the internet.

## Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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This study was approved by the Institutional Review Board of the university at which the study took place, and was classified as exempt research as no identifiable information was collected. The authors have no funding associated with this study to report, nor do they have any competing interests to disclose.

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