

Digital Health Education for the Fully Online College Student: An Exploratory Study

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ABSTRACT

Background: Just because more online degree programs are available does not mean that each university has the support services to provide health services to their online students. **Purpose:** The purpose of this study was to determine whether health-related services are provided to fully online students based on the American College Health Association's Healthy Campus 2020 initiative. **Methods:** This descriptive, exploratory study used an online survey design to query a volunteer sample of 63 college health professionals from U.S. universities about the types of health promotion strategies they used to engage the fully online student. **Results:** Fifteen percent charged online students a health fee, 33% offered university-sponsored health insurance, 36% provided primary care services, and 52% provided mental health services. Mental health and stress management, in the form of written material or a website, were the most common types of services offered. **Discussion:** Online learning platforms exist and there are captive audiences, but Health Educators are currently missing the mark in achieving Healthy Campus 2020 goals for the virtual student. **Translation to Health Education Practice:** Universities offering online academic programs have a unique opportunity to provide access to health services, educate and promote wellness, and become a bigger part of the health care solution.

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Background

Participation in online courses continually increased over the last decade, even as overall enrollment in higher education declined. Over 7 million or 33.5% of college students are taking at least one online course, with at least 12.5% enrolled exclusively online.¹ Enrollment numbers of new online students indicates the growth will continue. Universities are responding to that demand.

In the past, students enrolled in fully online academic programs were considered the minority and were often labeled “nontraditional.” Now nontraditional students have become the majority on college campuses. According to the U.S. Department of Education, 71% of all college undergraduates are nontraditional.² *Nontraditional* is generally defined as being independent for financial aid purposes; having one or more dependents; being a single caregiver; not having a traditional high school diploma; delaying postsecondary enrollment; attending school part-time; or being employed full-time.³ The majority (57%) of nontraditional students are female; 29% identify themselves as non-Caucasian and

71% as Caucasian. The average age is 34, although most (67%) are between the ages of 18 and 39, and about 35% are younger than the age of 30. Most nontraditional students' household incomes are less than \$55 000 and 37% report using financial aid. The majority work full- or part-time (60% for undergraduates and 88% for graduate students) and 43% are first-generation college students.³ For the purposes of this study, the characteristics of nontraditional students may certainly apply, but this study focuses more on students taking college academic classes without stepping foot on a college campus and therefore are termed “fully online” students.

Just because more online academic programs are available does not mean that each university has the support services in place to provide a quality, well-rounded education to their fully online students. There are many factors and influences that impact a student's academic success and it has been documented that health is one of these factors. According to the 2015 National College Health Assessment (NCHA), conducted by the American College Health Association (ACHA), students

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indicated the following as the top 5 factors negatively impacting their academic performance (e.g., received a lower grade on an exam or an important project; received a lower grade in the course; received an incomplete or dropped the course; experienced a significant disruption in thesis, dissertation, research, or practicum work): (1) stress (30%); (2) anxiety (22%); (3) sleep difficulties (20%); (4) cold/flu/sore throat (15%); and (5) depression (14%).⁴

There are many health assumptions made about the online learning environment, including students being at higher risk of sedentary lifestyles, cigarette smoking, and depression due to social isolation.⁵ Online students have been found to be vulnerable to challenges impacting their well-being, levels of stress and satisfaction, academic persistence, and diploma attainment.²

Good health is directly and fundamentally important to all graduates, it also has very much to do with the entire purpose of education ... for their future role as civic and professional leaders ... campuses must model good health and fitness and serve as models of organizational responsibility.⁶ (pp.185-186)

Implementation of Health Education initiatives for fully online students could prevent or delay the onset of chronic diseases related to physical inactivity, tobacco use, stress, and depression. Chronic diseases, including cardiovascular diseases, diabetes, cancers, and osteoporosis, caused by these risk factors are the leading causes of death and disability. As online college enrollment continues to rise, especially for nontraditional students, Health Educators have a viable opportunity to employ modern efforts to prevent chronic diseases at the individual level (through Health Education) and at the population level (online institutions that promote health).

Findings from the 2015 NCHA indicated that 90% of college students identified college health services to be a credible source of information compared with other sources.⁴ A cross-sectional study of 426 nationally represented brick-and-mortar U.S. colleges found that 60% provided health resources on their websites, 49% provided health information, 48% provided links to outside resources, and 28% provided interactive web-based health programs.⁷ Even on physical campuses, there is little correlation between what appears on a campus website and the availability of the service.⁷ However, multiple studies have identified the online platform as a critical force in achieving Healthy Campus 2020 goals.⁸⁻¹⁰ The benefits of online health information include “confidential accessibility to sensitive health topics, improvements in health outcomes by encouraging healthier lifestyle choices, better-informed patients, and access to important health information to encourage

patients to be better informed, especially those with chronic health conditions.”^{8(p.2219)} Researchers determined that over half (55%) of adults ages 18–59 with Internet access on a home computer used the computer to obtain health or medical information, but there was also an age divide regarding computer use. Therefore, a younger, more connected adult population would have an even higher percentage of utilization.¹¹ Based on the projected growth of online students, fully online academic programs have a unique opportunity to provide access to health services, educate and promote wellness, and become a bigger part of the health care solution.

Due to the association between academic success and student health status, the ACHA was founded in 1920 to promote college health and continues to serve as the primary leadership organization advocating and promoting for the health needs of college students. ACHA’s Healthy Campus 2020 is a framework based on an evidence-based action model and provides campuses with the tools and resources to appropriately and effectively address the health needs of a college or university. The Healthy Campus coalition has outlined 5 key characteristics of a Healthy Campus initiative:

1. Creates a comprehensive, strategic framework that unites health issues under a single umbrella and aligns with the mission and values of institutions of higher education.
2. Requires tracking of data-driven outcomes to monitor progress and to motivate, guide, and focus action.
3. Engages a network of multidisciplinary, multi-sectoral stakeholders at all levels.
4. Guides local research, program planning, and policy efforts to promote health and prevent disease.
5. Utilizes population-level interventions, while addressing the social determinants of health.¹²

ACHA’s Healthy Campus 2020 is based on the Social Ecological Model. This model recognizes that health is determined by influences at multiple levels as shown in [Figure 1](#): public policy, community, institutional, interpersonal, and intrapersonal factors.¹³ The ACHA believes that “campus ecology provides a multifaceted view of the connections among health, learning, productivity, and campus structure”^{12(p.1)} and, therefore, interventions are most likely to be effective when they target the entire campus population at the intrapersonal and interpersonal levels (e.g., students, faculty, and staff) as well as the campus community level. Healthy Campus 2020 also notes that in order to make a lasting impact, initiatives must look at larger scale policy changes. Therefore, Healthy Virtual Campus (vCampus) interventions would

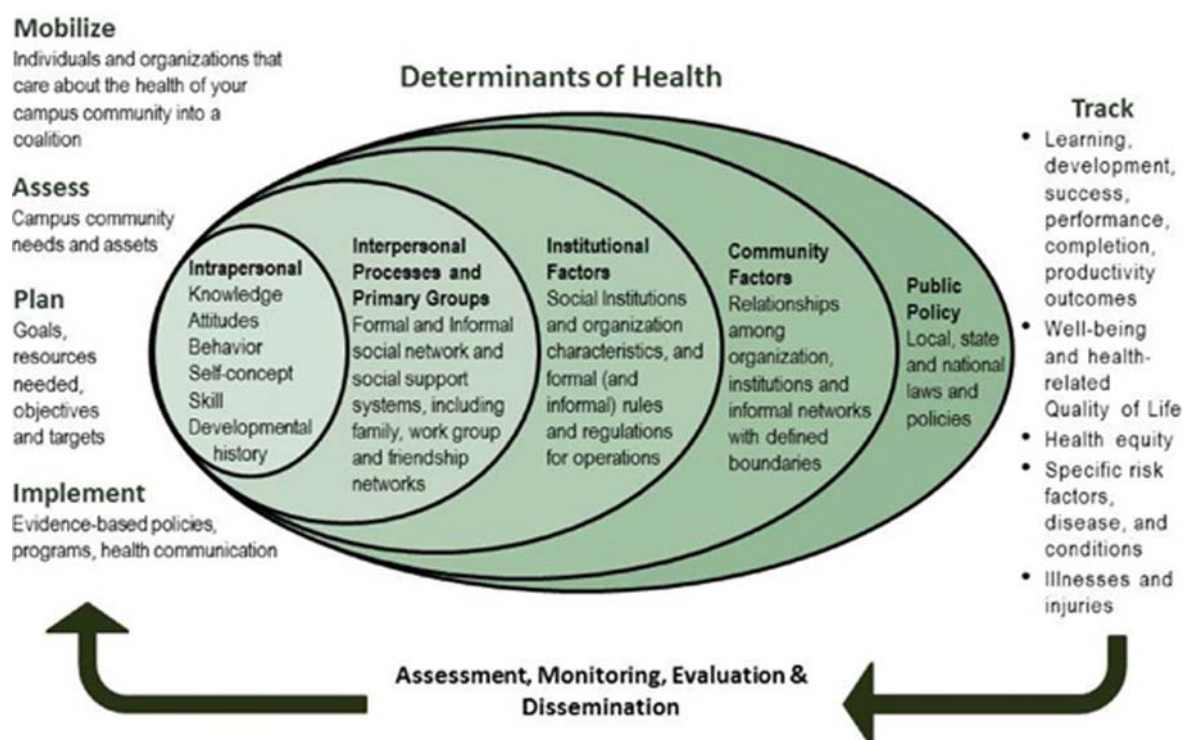


Figure 1. Healthy Campus 2020 social ecology and action model.^{12,13}

be most effective when they implement policies to create a healthy campus, such as those that provide behavioral incentives, and community partnerships with established providers, such as Planned Parenthood, CVS's Minute Clinics, the YMCA, the American Cancer Society's Quit for Life, and insurance-based memberships. The institutional focus on a healthy campus climate, interpersonal networks and social support systems, and intrapersonal development of health-promoting knowledge, attitudes, behaviors, self-concept, and skills all must exist in order to address health determinants at all levels. Given the rise in the number of students taking college academic classes without stepping foot on a college campus, it is truly vital to address the entire university community and online students are a part of that community. Therefore, online students must be considered when developing health programs, services, and policies.

Purpose

The purposes of this study were first, to provide a review of a descriptive, exploratory, cross-sectional study that used online survey design to query college health professionals at U.S. institutions about what types of health promotion strategies they used to engage the fully online student and, second, to discuss the study findings in light of the Healthy Campus 2020 initiatives.

Methods

Sample and recruitment

The researchers utilized convenience sampling for the recruitment of participants. Recruitment e-mails were sent in March and April 2015 through the Student Health Services listserv. This specific listserv was selected by the researchers because it is the most comprehensive and holistic listserv for college health professionals, covering all disciplines ranging from medical care providers to Health Educators. Over 3500 college health professionals subscribe to this specific listserv. A recruitment email was also sent via the National Intramural-Recreational Sports Association (NIRSA) membership listserv. NIRSA was selected because this higher education organization serves 4500 college professionals working in sport and recreation, and the organization's mission is closely tied to health and well-being. NIRSA is also heavily involved in the Healthy Campus movement. Additionally, a researcher sent personalized e-mails to identified leaders, both individual and institution, within the field of college health. ACHA's Healthy Campus Coalition started an initiative that asked institutions to take a pledge to work toward creating a healthy campus; therefore, the 18 institutions that have taken the National Healthy Campus Pledge through the ACHA were invited to participate in the study. In addition, personalized e-mails were sent to 15

of the chairs and/or cochairs of the ACHA's sections and coalitions that directly work in the area of student health and wellness because they are leaders in their field and most likely to be involved in creating healthy campuses. Finally, personalized e-mails were sent to the 2 cochairs of the NASPA (student affairs administrators in higher education professional organization) wellness and health promotion knowledge community, as well as the top 20 fully online universities based on enrollment.¹⁴ Participants were asked to volunteer and complete a brief online survey using Survey Monkey to determine current health-related programs and services offered to fully online students on their campuses. Walden University's Institutional Review Board approved the study procedures and all participants signed an electronic informed consent form.

The total sample, representing unique institutions, was 63. However, 30 surveys were excluded from the final study sample because they did not meet the study criteria by answering "yes" to the first question, "Does your institution provide fully online degree programs?" This brought the final study sample to 33.

Measures

Because relevant instrumentation on this topic was lacking, an online survey was created by the study researchers. The 19-item exploratory questionnaire consisted of multiple-choice, matrix-scale, and open-ended questions. After the study qualifier, the demographics assessed the following: participant's (e.g., college health professional's) department (e.g., Student Health Services, Student Affairs, Recreation, Wellness Center, etc.); institution's name; institution's attributes (e.g., 2-/4-year, public/private, minority-/faith-based, etc.); location (e.g., region, virtual); student population size; Carnegie classification; institution's classification (e.g., not for profit, for profit, unsure); university-wide accreditation; and level of online degree programs (e.g., undergraduate, graduate, both, unsure). Nine additional questions asked participants the extent to which their college/university provided health-related programs and services to their fully online students (Table 1).

The validation process of the instrument used an expert panel review to document the appropriateness of the health-related items. The expert panel ($n = 5$), with more than 16 years' combined experience on the executive board of ACHA's Healthy Campus Coalition, reviewed the instrument and assessed the face validity and construct validity by cross-walking survey items to the primary focal areas of Healthy Campus 2020. The process resulted in 9 content-specific items to assess campus health-related programs and services.

Data analysis

Given the exploratory nature of this investigation, the analysis included tabular reporting and graphical representation of the data. No formal statistical tests were performed.

Results

Demographic characteristics

Of the 33 participants who answered "yes" to providing fully online degree programs, most of the responses came from either the student health services ($n = 14$) or health promotion/wellness centers ($n = 6$). Other respondents represented an academic department or student affairs leadership. The sample was evenly split between private and public institutions. The majority (20/33) of the institutions were large (over 10 000 students), 28/33 were not-for-profit, and 32/33 were accredited universities. The majority ($n = 21$) offered fully online degree programs at both the graduate and undergraduate levels.

Health services for fully online students

According to the college health professionals in this study, 11 of the 33 represented institutions offered university-sponsored health insurance to fully online students and 5 of the 33 were confident that they charged online students a health fee. Over one third (12/33) of the institutions provided primary care or general medicine-based services for fully online students. Over half (17/33) of the institutions said that they provided mental health-based services for fully online students in the form of in person, virtual or telephonic individual and/or group counseling sessions.

The most common type of health service offered to fully online students was (1) mental health ($n = 40$; Figure 2. n Equals the number of services offered.) The 33 universities surveyed offered a combined 40 mental health services, of which 35% were written material/website. After mental health, the most common types of health services offered were (2) stress management ($n = 37$); (3) physical activity/fitness ($n = 33$); (4) relationship violence/sexual assault ($n = 32$); (5) weight management tied with substance abuse ($n = 31$); (6) nutrition ($n = 29$); (7) tobacco cessation ($n = 26$); (8) STI/HIV/AIDS ($n = 21$); (9) injury prevention ($n = 20$); (10) family planning ($n = 15$; Figure 2).

Figures 3 shows the resource allocation, demonstrating how the universities in this study disseminated information on the leading health indicators (i.e., subject). Figure 4 highlights the proportionality of health information dissemination; it was relatively consistent

1. Which topical areas and modalities does your institution use to provide wellness/preventative programs, services and activities for fully online students (select all that apply):

	Written material/ website	Educational software Mobile app Text messaging Online modules	Lecture/live Q&A session	We do not provide services/programs in this area
Family planning				
Injury prevention				
Mental health				
Nutrition				
Physical activity/fitness				
Relationship violence/sexual assault				
STI/HIV/AIDS				
Stress management				
Substance abuse				
Tobacco cessation				
Weight management				
Other (open text box)				
We do not provide these services/programs				
2. Does your institution provide primary care or general medicine–based services for fully online students?				
a.	Yes			
b.	No (skip to next question)			
c.	Unsure (skip to next question)			
3. If yes, please select all types of services currently being offered to fully online students at your institution?				
a.	Allergy/immunization			
b.	Chronic condition management			
c.	General illness treatment			
d.	Gynecology/women’s care			
e.	Laboratory			
f.	Pharmacy			
g.	Sports medicine			
h.	Travel clinic			
i.	Other (open text box)			
4. Does your campus provide mental health–based services for fully online students?				
a.	Yes			
b.	No (skip to next question)			
c.	Unsure (skip to next question)			
5. If yes, please select all types of services/programs currently being offered to fully online students?				
a.	In-person individual counseling sessions			
b.	Virtual or telephonic individual counseling sessions			
c.	In-person group-based counseling sessions			
d.	Virtual or telephonic group-based counseling sessions			
e.	Other (open text box)			
6. How does your institution assess your fully online student’s health needs, attitudes, and behaviors (select all that apply)?				
a.	Electronic health record			
b.	Health risk assessment			
c.	American College Health Associations–National College Health Assessment			
d.	Core Institute Alcohol and Other Drug Survey (CORE) assessment			
e.	Healthy Minds			
f.	Other (open text box)			
g.	Our institution does not assess online students			
7. Does your institution offer a university sponsored health insurance to fully online students?				
a.	Yes			
b.	No			
c.	Unsure			
8. Does your institution charge online students a student health fee?				
a.	Yes			
b.	No			
c.	Unsure			
9. Additional comments and/or questions (open text box)				

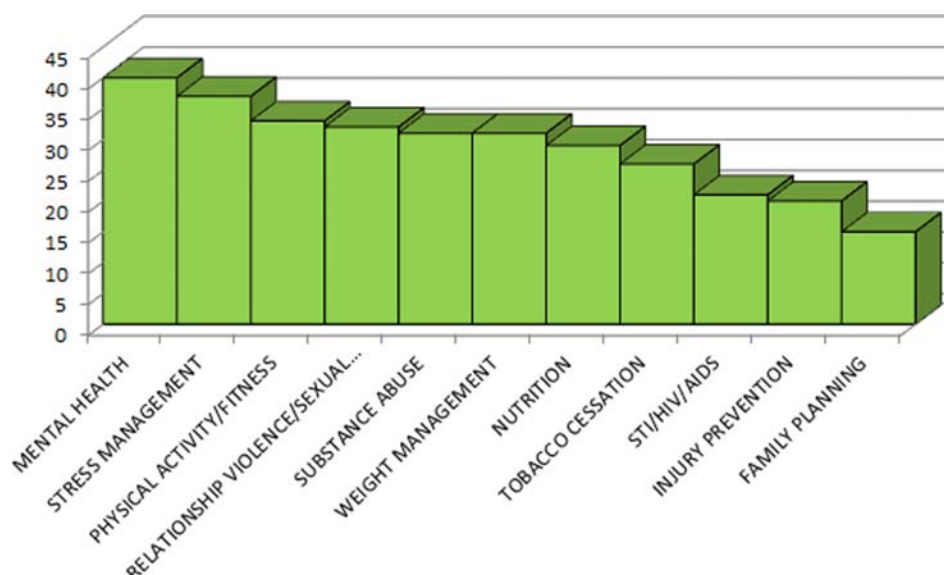


Figure 2. Most common types of health services offered to fully online students.

across the subject areas. Finally, Figure 5 shows that the most common modalities to offer the health services were (1) written material/website (39%); (2) individual health coaching (18.2%); (3) online modules (12.9%); (4) lecture/live Q&A session (10.9%); (5) webinars (7.6%); (6) group health coaching (5.9%); (7) telehealth/e-Health (4.4%); (8) mobile app/text messaging (1.8%); and (9) discussion board coaching (0.3%).

Compared to traditional brick-and-mortar universities, the fully online universities surveyed in this study are offering far less Health Education resources: 60% of brick-and-mortar colleges housed website health resources and 28% provided interactive web-based health

programs.⁷ The consistent theme across studies was that the most common leading health indicator was mental health.

This study's results indicated that 43% of the institutions assessed their fully online students' health needs, attitudes, and behaviors using the ACHA's NCHA, 19% used the Core Institute Alcohol and Other Drug Survey (CORE) assessment, and 19% used electronic health records. In addition, public institutions with more than 20 000 students offered the most health services. These findings were consistent with larger brick-and-mortar colleges more likely to provide web-based health resources.⁷ This study also found that public,

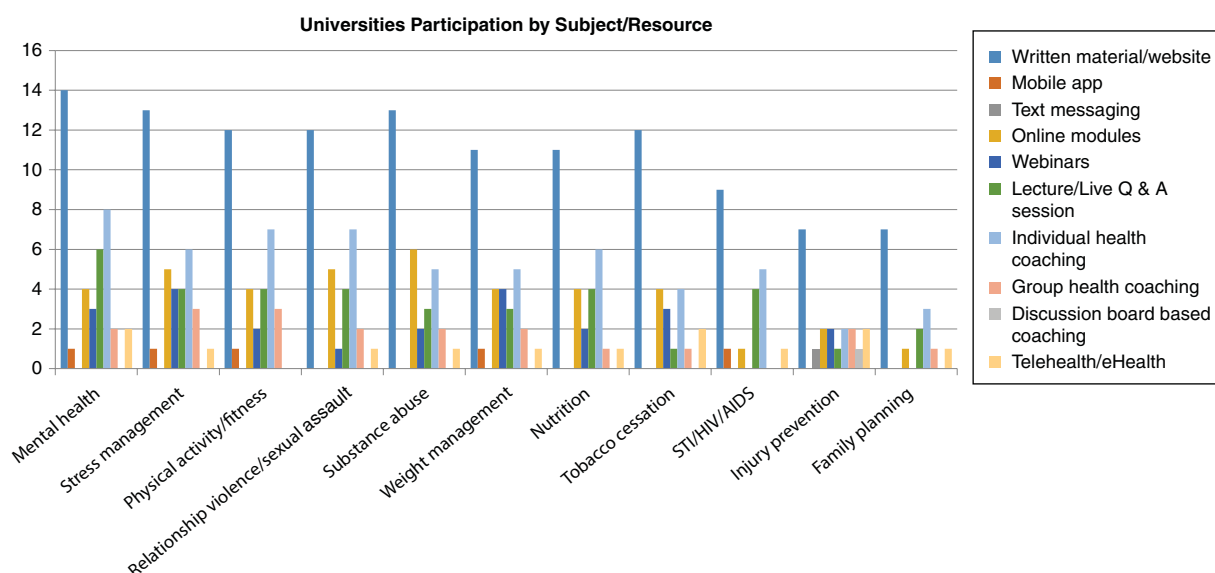


Figure 3. Resource allocation: how universities are disseminating health information and services to fully online students.

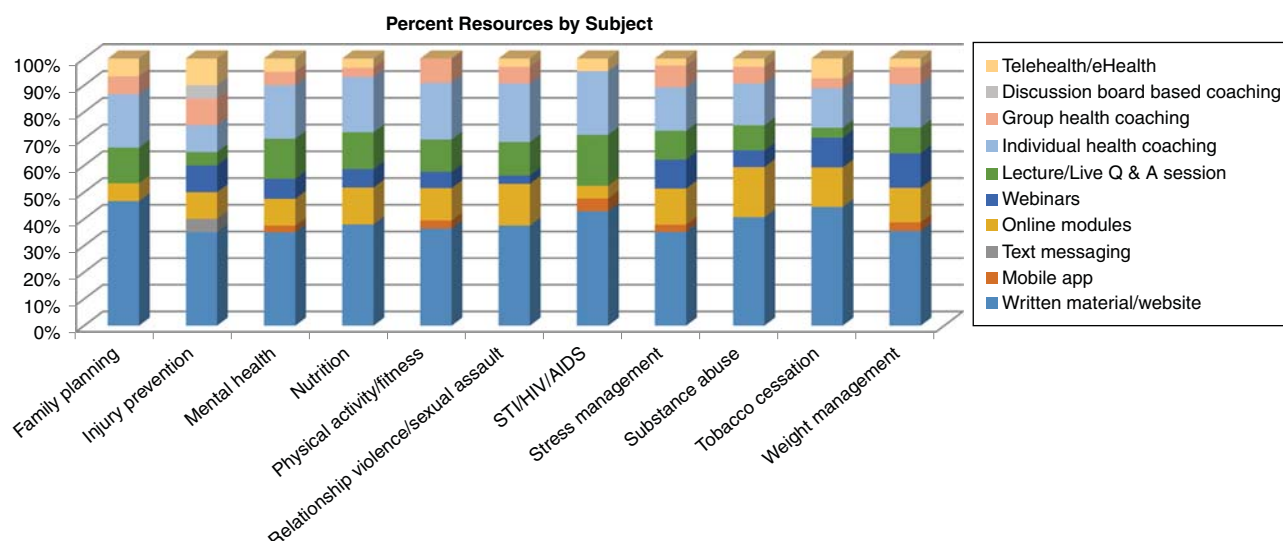


Figure 4. Health information dissemination to fully online students.

not-for-profit institutions were more likely to offer university-sponsored health insurance. In addition, only 5 of the 33 institutions charged online students a health fee (2 private, 3 public), all not-for-profit institutions.

Discussion

The demand for online education yields incredible opportunities for Healthy Campus 2020 initiatives, but this study found that most universities offering fully online academic programs are not providing interactive student health services, education, and promotion. Online learning management systems exist and there are captive audiences, but college health professionals are currently missing the mark in achieving Healthy Campus

2020 goals for the virtual student. Handouts and websites provide a good starting point, but they do not create a healthy campus climate, offer behavior change techniques, or offer support for real health actualization. “Greater efforts should be made by Health Education specialists to design and implement free (or low cost) online programs that follow best practices, based on behavior change theory and the most success strategies.”^{15(p.332)}

Limitations and next steps

A limitation of this study is the reliability of the instrument. Future research will systematically determine the instrument’s reliability and validity in order to verify

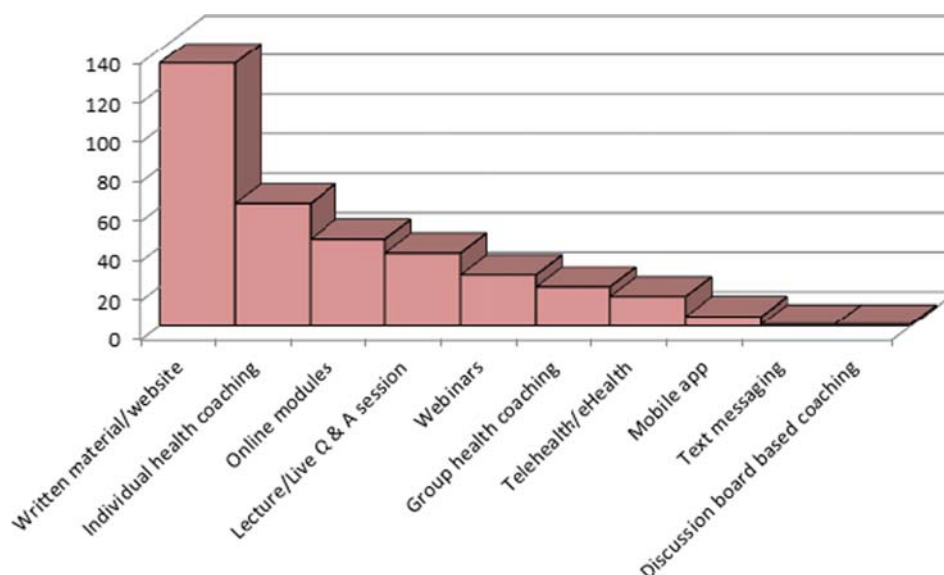


Figure 5. Most common modalities to offer the health services to fully online students.

results yielded from the data collection. The researchers plan to continue collecting data from online universities in order to increase the sample size and continue to scrutinize the instrument to ensure unbiased measurements for the metrics of interest.

A second limitation pertains to determining whether universities are responding “yes” to offering health services to fully online students by posting material or whether they are actually developing materials that engage the students in need of their services that then point them to the additional support services offered. If universities are choosing to disseminate information on these important health topics based on time and budgets constraints, then researchers need to determine how to better engage virtual students in using and absorbing the published information. Future research involves conducting focus group methodology with the participants of this study in order to clarify and supplement the knowledge gained from the descriptive data. Based on the open-ended comments (question 19 of the survey), the participants in this study are a willing group of college health professionals, seeking ways to reach out to online students in regards to health care; therefore, a working group can be created to brainstorm digital Health Education.

Finally, in order to successfully develop Healthy Campus initiatives, future research should determine the most common health and behavior risks affecting fully online students’ academic performance. As noted above, most of the participating institutions indicated that they assess their students’ health behaviors and needs via standardized instruments such as the ACHA–NCHA or the CORE. The researchers believe that the professional organizations administering these assessments should consider adding a question in the demographics section of their instruments that addresses the modality in which students take their classes. This would allow college health professionals to stratify their campus data (online versus on-campus). The researchers are currently assessing needs, assets, and capacity for Health Education at 2 large, fully online universities using Area I of the National Commission for Health Education Credentialing Inc. Competency-Based Framework, in order to compare the health needs to the services provided.

Translation to Health Education

The online platform is a critical force in achieving Healthy Campus 2020 goals. Universities should leverage digital and new media to provide Health Education online for the virtual college student who is already present. Such technological approaches were rarely utilized in this study’s sample. Suggested strategies

include e-Health Education with use of social media analytics to target groups and tailor messages using information and communication technologies, including Facebook, Twitter, YouTube, Pinterest, and Instagram.¹⁵ PhotovoiceKit and Web 2.0 used as online virtual health communities, including blogs, podcasts, and online discussion boards, are growing online self-help groups. Mobile health (mHealth), such as smartphone applications including text messaging, behavior tracking, and community alerts, is another way to engage virtual students.¹⁶ College health professionals can learn from the corporate sector in leveraging digital (Health Education) modalities. In 2014, 74% of companies were using learning management systems; 45% used virtual classroom/webcasting/video broadcasting; 48% used PowerPoint conversion tools with narrated slides; 33% used simulation tools; 18% used mobile applications; and 11% of companies used podcasting.¹⁷

Current innovative, exemplar approaches of online health promotion in higher education include Oral Roberts University requiring all online students purchase and wear a smartwatch in order to show “satisfactory health and physical education progress”^{18(p.7)} and Northern Arizona University’s violence prevention virtual webinars and media campaigns.¹⁹

Online health resources are a necessary alternative to on-campus health services and the best avenue to provide health promotion to online students who never step foot on a college campus. The National Commission for Health Education Credentialing Inc. has numerous Areas of Responsibility and Competencies²⁰ that validate this point and, as previously noted, the Social Ecological Model is extremely helpful for Health Educators as they begin the planning process for interventions. Figure 1, the Healthy Campus 2020 social ecology and action model, provides a pictorial representation of the program planning, implementation, and evaluation process. First, college health professionals need to base their prevention efforts on relevant data (Area I) by gathering key stakeholders (Competency 1.1) from the community to work together to assess the health needs and assets of the target community by examining the factors that influence the learning process (Competency 1.5) and inferring needs for Health Education based on assessment findings (Competency 1.7). The next step is to plan the intervention (Area II) by identifying goals and objectives (Competency 2.2), needed resources, and a scope and sequence for the delivery of the Health Education (Competency 2.4). During the implementation phase (Area III), the Health Educator would utilize the literature to implement evidence-based interventions for their identified population (Competency 3.3). In the “track” phase (Area IV), the Health Educator would look

at the intervention outcomes, successes, and areas for improvement. As with any program planning model, the Health Educator should use the information found during the evaluation, or track phase, to improve the overall intervention so that the next implementation is improved (Competency 4.5).

The results from this exploratory study show that there is substantial room for improving and increasing the number of health programs and services being offered to fully online students. Health professionals know that knowledge does not change behavior, so online educational fact sheets cannot be the extent of the Health Education and prevention available to fully online college students. When Health Educators are program planning they need to make sure that the data they are gathering surrounding their target population's health needs truly represents the entire campus community, not just those students sitting in seats on the physical campus. This research study shows that in order for college health professionals to truly implement interventions for their entire campus population, they need to not only assess the health needs of their fully online students but must also utilize these data when planning interventions. Additionally, to meet the identified health needs, college health professionals need to utilize the technology and creativity they have available on campus in order to develop innovative and engaging ways to reach the virtual student. In summary, college health professionals need to be more mindful of online students when planning and implementing health programs and services to truly develop a Healthy Campus.

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