

Availability of E-Information for Women's Health Services: Assessment of California State University Student Health Centers

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Abstract

Background: We sought to determine the availability of e-information for women's health services and discuss the implications for access to essential preventive health services for college-age women.

Methods: California State University (CSU) Campus Student Health Center (SHC) websites are evaluated against a set of criteria developed from national directives for women's health issues. An analysis of these websites was conducted in January–July 2009. A review of related literature was also conducted.

Results: Inclusion of essential women's health services (EWHS) on SHC websites varies significantly across services and campuses, and no guidance exists for material to include despite well-documented concern about quality of web information and the importance of this information for college-age women.

Conclusions: Our findings point to the need to more broadly assess campus health center use of the Internet to provide health service information to students and establish guidelines for SHCs to communicate EWHS to the female student population.

Introduction

THE CALIFORNIA STATE UNIVERSITY (CSU) is the largest public university system in the United States, with 425,878 undergraduate students at 23 campuses stretching over 800 miles.¹ The large student population, its diversity, and its geographic reach make CSU an excellent sample population for a study comparing and contrasting the level of health information available to female students through campus student health center (SHC) websites. As the American College Health Association (ACHA) has set the objective that by 2010 the number of students with access to health information and services should be increased from that of 2000,² we deemed it important to record the ease of access of women's health information on the campus websites.

Young adults aged 19–29 are the fastest growing uninsured age group in the United States, with 13.7 million uninsured in 2006. Although young adults make up 17% of the general population, they account for 30% of the 46.4 million uninsured people under age 65.³ A recent Government Accountability Office (GAO) report estimates that 20% of college students are uninsured,⁴ with women more at risk for lacking healthcare, as just over half (52%) of working-age women report problems accessing healthcare services compared with

39% of men.⁵ At least one study suggests that women's health centers need to devise more creative ways to reach out to certain populations of women.⁶ Ultimately, the goal of promoting access to and use of essential women's health services is served by increasing awareness of gaps in the availability of information for college students via CSU SHC websites.

Many studies have documented the increased use by consumers of the Internet to locate healthcare information. As use of the Internet has rapidly gained in popularity, health information is one of the most frequently sought topics online.^{7–9} The percentage of adults in the United States with Internet access who search for health information online increased dramatically from 55% to 80% between 2000 and 2006,^{10,11} with about 6 million Americans searching for health information online each day.¹² 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.¹³ A Pew study found in 2000 that the vast majority of Internet users who sought health information online claimed it affected their future use of healthcare services,¹⁰ which would indicate the importance of complete and accurate

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information about healthcare services. A 2009 Pew Internet/California Healthcare survey found that online technology both accelerated the pace of discovery of medical information and sharpened the questions that patients asked health professionals.¹⁴ In addition, e-health information is a significant factor in maintaining patient satisfaction and empowerment and is expected to help increase the efficiency of healthcare delivery.^{9,15}

Young adults (aged 18–29) have the highest percentage of any group who frequently search for online health information.^{9,16} Health issues of significant importance for young people include sexual health issues (84%), drug and alcohol use (75%), sexual assault (72%), violence (68%), smoking (60%), depression or other mental illnesses (58%), cancer (51%), and weight loss or eating disorders (47%).¹³ These concerns motivate half of online youth who seek Internet-based health information to search for a specific disease or condition, 44% to seek online information about pregnancy, birth control, HIV/AIDS or other sexually transmitted diseases (STDs), and nearly one in four to search for information on depression or mental illness and problems with drugs and alcohol.¹³ Similar results were reported in a 2005 study of Internet use for health information among college students, where the 10 health topics most researched on the Internet by college students were found to be fitness/exercise, diet and nutrition, medicines and pharmaceuticals, alcohol and other drugs, sexual health, mental health issues, STDs, other diseases, tobacco and smoking, and cancer.¹⁷ Four of ten online youth find online health information very useful, and an equal number say they have changed their personal behavior because of online health information.¹³

Nearly all college students use the Internet—More specifically, many of these students use the Internet to find health-related information.¹⁷ In addition, numerous studies indicate a significant gender difference in the use of the Internet for health information, as women are more likely than men to search for such information on the web.^{17–19} As studies suggest that college is often the time when women begin to think about and act on decisions about their health, provision of women's healthcare at college is critical.²⁰

In 2002, the ACHA Task Force on National Health Objectives set as a target that the proportion of college students with access to health information in 10 specific areas should be increased.² As research suggests that one way to manage sexual assault-related issues is to list resources available on campus and in the local community,²¹ this may also hold true for other women's health issues. Decreasing barriers to available resources and educating students about their existence are paramount to the success of intervention programs.²² Given female students' high likelihood of using the Internet to access health information and the importance of this period in their lives to establish good health management habits, the provision of accurate and complete women's health service information on SHC websites is essential to increasing awareness of and access to such services.

Materials and Methods

During December 2008 and January 2009, one of the researchers accessed the student health services website for each CSU campus¹ and documented listings of essential women's health services (EWHs) and the presence or absence of a

separate women's health URL. The services included in our analysis were HIV testing, Gardasil (Merck) injections (to guard against human papillomavirus [HPV] infection), Pap smears, breast examinations, support for eating disorders, STD/sexually transmitted infection (STI) testing and treatment, smoking prevention and cessation, alcohol abuse support, drug abuse support, contraception, diet and nutrition support, sexual assault support, and support in cases of domestic violence. The list was based on the ACHA guidelines of leading health indicators²³ and comprised services to women related to these indicators. The same researcher searched each campus website using the same protocol and recorded navigation between pages, allowing rating of ease of access to information on women's health services.

First, the link to each campus homepage listed on the CSU website¹ was followed. Once at the campus homepage, a search was conducted to find the SHC homepage. Searches from the homepage were conducted up to three times, as necessary, from each campus homepage to establish the route with the fewest number of steps. Once at the SHC homepage, a search was conducted to locate any references to the provision of women's health services on our list. We then searched each SCH website to see if it specified the location of the SHC on campus.

Next, from each of the 23 campus SHC homepages, a search was conducted for a women's center website or discrete women's health webpage. Once at these sites, where they existed, a search was conducted for any of the remaining health services that were not referenced by the campus's SHC webpage. For campuses that did not carry a link directly from the SHC website, we returned to the main campus homepage and searched again to ascertain whether or not the campus provided online information about a women's center separately from the SHC or provided links to alternate providers of health services on our list that were not available on campus.

Finally, the entire campus website was searched, beginning at the main homepage, for any material or specific service information for women's health services not revealed by the prior searches. The ACHA encourages the use of both campus health and counseling services²³; thus, it was important to extend the reach of this study to services provided by on-campus student counseling services. The number of links required to find any of the remaining services was recorded.

For campuses that did not list information or cite provision of any of the women's health services on our list, we attempted to ascertain whether the service was unavailable on campus or simply not listed on the website, via phone contact. When information or notice of provision was mentioned anywhere on the campus website, we did not seek further confirmation from other sources. In June 2008, we telephoned each of the appointment desks for each campus SHC. We read from a script (preapproved by our institutions IRB) and spoke only to receptionists to whom students would speak if they approached their campus SHC to enquire about an appointment for one of the women's health services on our list.

Although the ACHA has created standards to guide the establishment of college and university student health insurance/benefits that state that "students rely upon its student health insurance/benefit program for their primary source of health insurance protection"²³ and actively encourages the use of campus health and counseling services,²³

we recognize that Planned Parenthood clinics provide an alternative source of women's health services at little or no cost. Consequently, we located the nearest Planned Parenthood clinic to the main mailing address for each campus using the Find a Health Center function on the Planned Parenthood homepage.²⁴ We then used Google Maps²⁵ to determine the shortest driving distance from the main mailing address of each campus to the nearest Planned Parenthood clinic. Finally, we recorded the setting of each campus (major city, small/medium city, large town, or small town) and total undergraduate population of each campus as publicized by CSU.²⁶

Results

We found that all 23 CSU campuses had SHCs located at the campus sites, the location of which were provided on all but one (Bakersfield) of the main campus websites. Only 11 (48%) campus websites provided directions or a map to the SHC. In addition, all campuses were within a reasonable distance to a Planned Parenthood clinic, with 14 (61%) SHCs within 5 miles and 3 (13%) SHCs located at >10 miles distance.

All the SHCs provided specific homepages, but we found significant variability in e-health information provided across SHC websites. Eight (35%) CSU SHC websites directly referred to at least 75% of all identified EWHS. Only one campus (Long Beach) included some type of information on 100% of the EWHS on their SHC website. Sonoma State provided some type of information on 100% of the EWHS, but the information was not located in the SHC website; rather, we were directed to an external database, where the links were not immediately obvious.

Three of the CSU SHC websites referring to more than 90% of EWHS included two of the oldest CSU campuses (San Francisco and Long Beach) and one of the newest (San Marcos) campuses in the system. Nine (39%) additional SHC websites provided between 50% and 70% of the EWHS information on their websites, whereas the six (26%) remaining SHC websites referred to less than 50% of EWHS information on their websites. In addition, two of these (Maritime Academy and Monterey Bay) SHC websites were found to have numerous broken links that made it difficult to locate/access certain information. In the case of the Maritime Academy, a phone contact revealed inconsistent availability of links ("It only works sometimes"), limited services because of a very small general and female student population (800 total students, of which 20% are women) and also identified "huge funding cuts."

Twenty-one of the twenty-three (93.1%) campus websites failed to provide information on all EWHS on our list; only Long Beach and Sonoma listed all services. Our follow-up calls to these health centers revealed that all these campuses did provide at least some of the services that they failed to mention on their websites on campus. Of these 21 campuses, 16 (76.2%) provided 100% (either through their SHC or referral from the SHC to another on-campus resource, such as the student counseling service) of the services they failed to mention or provided information about on their website. Table 1 shows the percentage of all EWHS considered that were not directly referred to on the campus website but indeed are provided at the SHC or associated counseling service (to which a referral would be given from the SHC).

TABLE 1. PERCENTAGE OF ALL ESSENTIAL WOMEN'S HEALTH SERVICES CONSIDERED THAT WERE NOT DIRECTLY REFERRED TO ON CAMPUS WEBSITE BUT ARE PROVIDED AT STUDENT HEALTH CENTERS OR ASSOCIATED COUNSELING SERVICE (TO WHICH REFERRAL WOULD BE MADE BY STUDENT HEALTH CENTER)

<i>Campus</i>	<i>% of EWHS mentioned on campus website</i>	<i>% of services not mentioned on website, yet to which access to information/service is provided on campus</i>
CSU Long Beach	100	n/a ^a
Sonoma State University	100	n/a ^a
CSU San Marcos	92	100
CSU Sacramento	85	100
San Jose SU	85	100
San Francisco SU	82	100
CSU Los Angeles	77	100
CSU Stanislaus	77	100
CA Polytechnic SU, San Luis Obispo	75	100
Humboldt State University	69	100
CSU Polytechnic University, Pomona	69	100
San Diego SU	69	100
CSU Fresno	62	100
CSU Northridge	62	100
CSU Bakersfield	61	20
CSU East Bay	54	100
CSU Fullerton	54	16.7
CSU Channel Islands	46	100
CSU San Bernardino	38	100
CSU Monterey Bay	31	100
CSU Dominguez Hills	31	11.1
CSU Maritime Academy	23	10
CSU Chico	15	9.09

^aNot applicable because reference was made to 100% of our list of EWHS on website, or links to external information were provided to 100% of our list of EWHS.

EWHS, essential women's health services; CSU, California State University; SU, State University.

Table 2 shows the extent to which the CSU SHC websites provide information for the EWHS areas. The Healthy Campus 2010 objectives are included as a reference to national guidelines for campus health in the EWHS study areas. The *Healthy People 2010* initiative builds on previous efforts to establish national health promotion and disease prevention goals to improve the health of the population.² Healthy Campus 2010 is a companion report whose mission is to "help institutions of higher education make health objectives a priority."²

Gynecological examinations consist of the same basic components: a pelvic examination, a breast examination, and a Pap smear, as well as a conversation about contraception and STIs when relevant. Our study showed the service information provided on CSU SHC websites for components of a normal gynecological examination as follows: 83% of websites provided contraceptive service information, 75% of websites provided Pap smear and STD/STI service information, 58.3% provided HIV service information, 41.7%

TABLE 2. LEVEL OF CALIFORNIA STATE UNIVERSITY STUDENT HEALTH CENTER WEBSITE INFORMATION FOR ESSENTIAL WOMEN'S HEALTH SERVICES AND HEALTHY CAMPUS 2010 OBJECTIVES

	% of SHC website information level			Healthy Campus 2010: Example objectives in each leading health indicator area
	Yes ^a Access to services	Incomplete ^b Information only	No ^c Not referred to at all	
Contraception	83.3	8.3	8.3	7-3b7. Increase the proportion of college students who have received information on pregnancy prevention (to target 55%)
STDs/STIs	75.0	12.5	12.5	
Pap smears	75.0	4.0	21.0	
HIV	58.3	8.8	32.8	
Diet/nutrition	45.8	33.3	20.8	7-3b10. Increase the proportion of college students who have received information on dietary behaviors and nutrition (to target 55%)
Breast examination	41.7	8.3	50.0	
Sexual assault	29.2	16.7	54.1	
Alcohol	25.0	54.2	20.8	
Gardasil (Merck)	20.8	8.3	70.8	7-3b2. Increase the proportion of college students who have received information on alcohol and other drug use prevention (to target 55%)
Smoking	20.8	29.2	50	
Drugs	16.7	45.8	37.5	7-3b1. Increase the proportion of college students who have received information on tobacco use prevention (to target 55%) 7-3b4. Increase the proportion of college students who have received information on alcohol and drug abuse use prevention (to target 55%)
Domestic violence	8.3	25.0	66.7	
Eating disorders	4.2	29.2	66.7	7-3b4. Increase the proportion of college students who have received information on violence prevention (to target 55%)

Source: American College Health Association. Healthy campus 2010: Making it happen. Accessed August 9, 2009 at www.acha.org

^aYes indicates that service information is provided on the website for the EWHS.

^bIncomplete indicates that the SHC website provides only information or a link to external information on its website. No service information is mentioned on the website.

^cNo indicates that the SHC website does not mention either services or resources provided at the SHC (or counseling center to which a referral would be provided) for the EWHS.

SHC, student health center; STDs/STIs, sexually transmitted diseases/sexually transmitted infections.

provided breast examination service information, and 20.8% provided Gardasil service information.

Discussion

This study found considerable variation in the provision of information about EWHS across CSU SHC websites. Table 1 indicates that for many EWHS, there is little correlation between what appears on a campus website and the availability of the service. We show that across all campuses, most EWHSs are considered sufficiently important to be offered on campus. For many, however, those services are not included on their campus websites. These findings may help explain the findings of Buhi et al.²⁷ that students typically begin Internet searches for health information or services by using a search engine, such as Google, rather than their SHC website. There are no specific guidelines to assist campus SHCs (CSU or otherwise) in determining what e-health service information should be included on their campus websites. This lack of guidance exists despite very clear goals and targets for college women's healthcare,² well-documented concern about quality of web information worldwide, and the fact that this is

such an important time for women to forge good practices regarding their health.²⁰

In 1998, a CSU mini-benchmarking project identified five areas for review—Career Centers, Libraries, Mail Services, Public Safety and Student Health Services—for all campuses.²⁸ In 2001, a CSU report identified 11 goals for review of SHCs, including whether “patient care quality and risks associated with health services are continually monitored and assessed” and “health services have been appropriately identified, approved, priced, and provided to all eligible personnel.”²⁹ However, review of SHC websites as the primary mechanism for communicating available services were not included in either report. A more recent study was undertaken to “compare student health centers in several important areas relating to campus size, staffing, operating cost, scope of service, and patient satisfaction.”²⁸ Data elements include immunizations, academic year, health services fee, primary care full-time equivalent (FTE) for nurse practitioners and M.D.s, primary care patient visits, student satisfaction, specialty care, and total expenditures, salaries, and benefits. However, no assessment was made of communication to students about provision and availability of resources

(through websites or other forms of e-health information strategies).

Providing website information for access to these services also supports a number of primary health objectives of the Healthy Campus 2010 report,² including 8 of the 28 college health priorities that relate directly to this study's EWHS. As these areas are also targeted in specific national health objectives to be used in college strategic plans, it seems appropriate to expect that they would be provided in the form of information or service on SHC websites. Objectives are specific in their reference to the importance of providing health information to college students in selected areas of health. For example, objective 7-3b2 indicates the need to "increase the proportion of college students who have received information on alcohol and other drug use prevention" to the 2010 target of 55%.²

Compared with the Healthy Campus 2010 objective 3-11c: 63.1% of female students received the baseline routine gynecological examination in 2000, 59% in 2007, and the target for 2010 was 83.2% at the time of writing. Our study shows that pregnancy prevention, Pap smear, and STD/STI services are the components of the routine gynecological examination most frequently included on campus websites in support of objective 3-11c, whereas breast examinations and Gardasil preventive treatment do not commonly feature on campus websites in support of this objective. Contraception service information appears to be the only component within this area of interest with nearly an equal number of SHC websites providing service information. This suggests that SHC websites could be doing much more to promote the availability and importance of services associated with routine gynecological examinations in the support of the Healthy Campus 2010 objective 3-11c, which aims to increase the number of college students receiving a routine gynecological examination from 59% in 2007 to 83.2% in 2010, particularly because the provision of health service access in these areas corresponds to health issues of great importance for young people (sexual health issues at 84%).¹³

In the area of diet and nutrition, the Healthy Campus 2010 target for information is 55%, but our results show slightly fewer SHC websites (45.8%) indicate access to such services. Although no national standards for providing information to college students for eating disorders exist, "weight loss or eating disorders are important for 47% of young people."¹³ With two thirds of SHC websites not making reference to this issue at all, our findings suggest a need for such information at a higher level.

For the Healthy Campus 2010 target of 55% for alcohol, smoking, and drug abuse information, service information for these respective health issues is significantly lower on CSU SHC websites, with access to information for alcohol provided in only 25% of websites, smoking in 20.8%, and drugs in 16.7%. This is another health issue considered significant by 75% of surveyed young people.¹³ With such a high level of interest and national standards for information set significantly higher than those provided by CSU SHC websites, our findings indicate that this is an area that requires focused attention.

Finally, the Healthy Campus 2010 target of 55% for information on violence prevention and the high level of interest of young people in the areas of violence (68%) and sexual assault (72%)¹³ indicate the need for better coverage of related health

information on SHC websites. In the area of violence, women in particular face potentially more serious problems because of the added risk of seeking help and identifying an abuser. Although there is legislation to address these issues, many universities struggle to provide students with an appropriate level of quality resources.³⁰ The National Institute of Justice²¹ indicates that one way to manage sexual assault-related issues is to list resources available on campus and in the local community. In this case, SHC use of their websites to provide related information may be an even more effective way to provide safe information on confidential services. Unfortunately, these services are among the least advertised across CSU campuses. Only 29.2% of SHC websites provide information on services available for sexual assault, and well over half (54.1%) do not mention services or information. The issue of domestic violence is mentioned even less frequently, with two thirds of SHC websites not providing any information and only 8.3% providing service information. Only two CSU SHC campuses (Fresno and Sacramento) provided service information for both sexual assault and domestic violence. This information points to the need for a review of CSU SHC websites, with an eye to assessing current levels of information available in health areas of importance for college students.

There are several areas that we would like to see explored by further study. It may be worth investigating whether there are any characteristics of the school (e.g., student enrollment, size of school endowment, staff size of the SHC) that predict or correlate with the adequacy of the e-health information provided for EWHS on campus SHC websites. For instance, we noted that the Maritime Academy CSU has one of the least adequate websites and a small, mostly male, enrollment. It has been documented that in some cases oral healthcare providers are able to diagnose such illnesses as cancer³¹ and eating disorders³² that do affect women. Further study could explore whether it would be appropriate to extend the ACHA and our own definition of EWHS to include oral healthcare and to explore further the impact of or relationship between nearby alternative women's healthcare providers in other than Planned Parenthood clinics.

Conclusions

Overall, this study indicates that SHC websites are being vastly underused in the promotion of EWHS and realization of government targets pertaining to women's health in undergraduates. Our findings indicate the need to more broadly assess campus health center use of the Internet to provide health service information to students and establish guidelines for SHCs to communicate EWHS to the female student population. Previous investigations¹⁵⁻¹⁷ show the suitability of the Internet as a medium by which to help realize the goals for college women's health services, and our study indicates that this medium is underused. We believe that this is critical as part of an effort to achieve the student healthcare targets set out in Healthy Campus 2010. Such efforts will increase student awareness of available health services, improve the credibility of SHCs, and improve accessibility for all students, including those with disabilities. Given the importance of college years for women in determining their habits for female healthcare,¹⁸ the proven suitability of the Internet to communicate information about EWHS,¹⁵⁻¹⁷ and the inconsistent use of CSU websites to provide information, it is clear that a

powerful medium is being significantly underused in raising awareness and consumption of EWHS.

As a result of our study, we recommend that someone, perhaps the ACHA, should provide guidelines to college SHCs for what information they should list on their websites for EWHS. In the meantime, we suggest that our list be considered. We also recommend that campus SHCs consider increasing the reach of their e-information to students by better placement in search engine result lists, perhaps by such means as search engine optimization (SEO).

Disclosure Statement

The authors have no conflicts of interest to report.

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