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J Am Coll Health. Author manuscript; available in PMC 2015 July 01.

Published in final edited form as:
J Am Coll Health. 2014 July ; 62(5): 351–356. doi:10.1080/07448481.2014.901330.

A Population-Wide Screening and Tailored Intervention Platform for Eating Disorders on College Campuses: The Healthy Body Image Program

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Abstract

Objectives—This paper presents a new approach to intervention for eating disorders and body image concerns on college campuses, using a model of integrated eating disorder screening and intervention. Formative data on implementation feasibility are presented.

Participants—College students enrolled at two universities between 2011–2012.

Methods—The *Healthy Body Image* program is an evidence-based screening and intervention platform, enacted via community and online resources. An online screen was used to identify students at varying levels of risk or eating disorder symptom status; responses were used to direct students to universal or targeted online interventions or further evaluation. Universal prevention programs to improve healthy weight regulation and body image culture were offered to all students.

Results—Formative data from 1,551 students illustrates the application of this model.

Conclusions—The *Healthy Body Image* program is feasible to deliver and provides a comprehensive system of screening, evidence-based intervention, and community culture change.

Keywords

counseling; eating disorders; health education; Internet intervention; mental health; prevention

Innovative approaches to screening and intervention for eating disorders on college campuses is needed[1–4]. Eating disorders impact students' emotional and physical wellbeing, affect peers and the campus community, and interfere with academic achievement, increasing risk for academic leave or dropout[5–7]. The *Healthy Body Image* program is a comprehensive, online platform for population-based screening and intervention. The aim of

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this program is to reduce the incidence and prevalence of eating disorders on college campuses using minimal person-based resources, thereby enabling scale-up and widespread implementation.

The *Healthy Body Image* program comprises four categories of activities: (a) Online screening; (b) Online, evidence-based preventive intervention for individuals at low and high risk for eating disorders (entitled *StayingFit* [8, 9] and *StudentBodies*[10, 11]); (c) Referral to clinical services for individuals with eating disorders; and (d) In-person community outreach and online culture change intervention delivery (entitled *The Whole Image*). In line with the American College Health Association's health promotion guidelines[12], the *Healthy Body Image* program facilitates evidence-based collaborative practice by providing targeted intervention across the socioenvironmental levels that impact students' eating and activity patterns. Specifically, by improving individuals' body esteem and eating attitudes and behaviors, changing cultural norms around nutrition and body image, and advocating for a healthier campus community, the *Healthy Body Image* program addresses intrapersonal, interpersonal, community, and policy factors relevant to healthy lifestyle behaviors and positive body esteem.

This paper describes the pilot implementation of the *Healthy Body Image* program at two universities, using two implementation approaches: solicited screening (i.e., invited campus-wide screen completion; University A) and universal screening (i.e., first- and second-year students living in targeted residential halls; University B). It was hypothesized that the *Healthy Body Image* program would be feasible to implement, result in increased campus outreach, and be acceptable to students and administrators.

METHODS

Participants

At University A (solicited screening), the *Healthy Body Image* program was advertised to all undergraduate students, graduate and professional students, and postdoctoral scholars. At University B (universal screening), the *Healthy Body Image* program was advertised to a targeted population of all incoming first-year students. Program implementation was tailored to the university based on administrator and stakeholder preferences.

Determination of Risk and Clinical Status—The screening assessment classified students into "low risk," "high risk," and "clinical referral" groups. "Clinical referrals" included students who met criteria for anorexia nervosa, bulimia nervosa, or binge eating disorder[13]; reported purging behavior; or females who reported missing three consecutive menstrual cycles (not due to medication). Students at "high risk" screened negative for an eating disorder but endorsed overconcern with weight and shape or endorsed a history of an eating disorder. "Low risk" students met none of the above criteria.

Procedure

Prior to completing any component of the *Healthy Body Image* program, students provided online acknowledgement of the privacy practices and agreement that their de-identified data

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could be used for research purposes. Data were stored on HIPAA-compliant servers. Study staff met university security and privacy training requirements.

Institutional Review Board approval was sought and the evaluation was deemed "exempt" because no identifying information was stored or used for research purposes. HealthMunk, LLC hosted and provided access to the online screen and *StayingFit*. Beyond Blackboards hosted and provided access to *StudentBodies*.

Solicited Screening: University A—Plans for implementation were directed by the Healthy Eating and Body Image Consortium, an interdisciplinary group of administrators, staff, faculty, and students from Student Health Services, Psychiatry, Sports Medicine, Sports Performance, Dining, Athletics, Residential Education, the student Peer Health Education program, and student government. The *Healthy Body Image* program was integrated into Student Health Services. The program was advertised via the *Healthy Body Image* program website, social media (e.g., Facebook page), presentations and workshops, and staff trainings (e.g., with resident assistants, peer health educators). Students completing *The Whole Image* enrolled in a 1-unit directed reading course.

Universal Screening: University B—Plans for implementation were developed in collaboration with university administrators, faculty, students, and researchers from the Office of the Provost, Student Health Services, Residential Life Office, University Nutrition, Office of Student Involvement and Leadership, and a student-led peer counseling organization. The *Healthy Body Image* program was advertised to students via presentations, flyers, and an email campaign.

Screening and Intervention—Students entered the *Healthy Body Image* program by completing the Stanford-Washington University Eating Disorder Screen[14] via computer or mobile phone. Students immediately received screen results in a separate online window and in an email recommending an intervention or clinical referral. Individuals directed to online programs were emailed a link to the intervention, an intervention description, and a randomly generated username and password (which they were prompted to change). Students who warranted a "clinical referral" received an immediate email indicating a recommendation to seek further evaluation with links to campus resources and contact information for a campus clinical liaison. This procedure is enhanced compared to most standards of care at college counseling centers, which are typically viewed as a voluntary treatment facility for adults responsible for their personal care[15].

Students could elect to complete the screen again in three months and were sent an automatic email with a link to the screen at the designated time.

Healthy Body Image* Program Interventions—StayingFit* is a cognitive-behavioral program that encourages healthy weight regulation and positive body esteem. The intervention has resulted in healthy weight regulation and increased healthy lifestyle behaviors[8,9]. *StudentBodies* is a cognitive-behavioral program that includes an online, asynchronous guided discussion group, focuses on reducing eating disorder risk factors, and has prevented the onset of eating disorders in students most at risk[10,11]. *The Whole Image* is

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a population-wide culture change program that aims to promote healthy norms about body size, decrease weight stigma, and improve social support for healthy lifestyle activities.

Analysis Plan

Feasibility was defined as the proportion of the population that completed the screen. Outreach programming was assessed as the number of campus programs and the number of students who attended events. Acceptability was defined as positive feedback from students and uptake for ongoing implementation by university administrators.

RESULTS

Screening and Referral to Online or Campus Resources

Results from the screen are provided in Table 1. At University A, 6,988 undergraduate students, 12,957 graduate students, and approximately 1,800 postdoctoral scholars were enrolled in 2011–2012. A total of 425 students voluntarily completed the screen and were offered participation in the online interventions or provided a referral. Seventy-eight undergraduate students participated in *The Whole Image*. At University B, 2,212 first and second year undergraduate students were targeted for study implementation. A total of 1,125 students voluntarily completed the screen and were offered participation in the online interventions or provided a referral.

Community Outreach and Culture Change

At University A, over 200 undergraduate resident advisors were trained (led by M.J.) to address problematic eating issues and body image concerns. Trainings consisted of 90 minute didactic presentations followed by 60-minute practice sessions. Over 30 undergraduate students, graduate students, and postdoctoral fellows and 3 student affairs staff members were trained (by M.J. and visiting expert) in 16-hour workshops to conduct campus outreach presentations. Individuals who provided formal feedback on the outreach presentations and trainings (n=86) recommended holding similar trainings again and reported a preference for interactive presentations that fostered discussions within their community. Additional outreach activities included a mandatory body image and mindful eating workshop that was provided to 180 new sorority members as well as a film screening and panel discussion for over 200 students and members of the university community. An estimated 3,000 students were reached through these activities.

At University B, 60-minute presentations (led by A.E.K.) were made to all students living in the targeted residential halls (n=16 presentations), residential advisor and residential peer health educators (n=4 presentations), campus student groups (n=3 presentations), and clinicians (n=3 presentations). Resident advisors also presented the program to students living in their residence halls as part of their “Community Standards” health and wellness programming. Residential hall leaders reported increased programming related to health and wellness for their residents.

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Program Acceptability

Across both universities, qualitative feedback for ongoing formative evaluation was solicited from stakeholders and students via meetings, interviews, self-report questionnaires, and word-of-mouth. Program implementation was met with high satisfaction and acceptability. The demonstrated feasibility of the pilot testing resulted in both campuses providing support for ongoing program implementation.

COMMENT

This paper describes a model and presents pilot implementation data of integrated eating disorder screening, intervention, and community culture change on college campuses. Program participation among over 1,500 college students demonstrated the feasibility of implementing the *Healthy Body Image* program on two college campuses. This model offers unique advantages beyond what is offered in currently available online screening programs. The *Healthy Body Image* program stands out as the interface between (1) screening for risk *and* symptoms/disorders and (2) linking screening with intervention. This model has the potential to prevent the onset and progression of eating disorders, facilitate treatment, and improve body image culture for all students.

Two implementation strategies were used for program deployment. Across the two sites, the average rates of students with clinical and subclinical eating disorders (5%, n=83) or at high-risk (32%, n=492) are comparable to those previously reported among college students[7,10,16]. However, site differences in the prevalence rates of students at high risk and with eating disorders are likely attributable to the different implementation procedures. Compared to the universal delivery model (University B), the solicited screening approach (University A) resulted in greater numbers of students who were, on average, at higher risk for eating disorders and more symptomatic. This may be a result of outreach activities that targeted micro-populations (e.g., student groups) that may have been at higher risk for eating disorders, which has been shown to be an effective model for delivering eating disorder prevention programs to college students[17–19].

It is also possible that students who responded to campus advertisements to complete the screen may be more attuned to body image concerns and interested in improving their symptoms. Conversely, rates of screen completion using the universal delivery model (University B) suggest that when screening is strongly encouraged for all students in a defined population (e.g., incoming students) this may decrease stigma and increase the completion of the screen by a broader group of students. Hence, fewer “high risk” and “clinical” students would be expected in this implementation because screening more accurately reflects population prevalence rather that a self-selected sample. Additionally, the lower rates of eating disorders at University B (universal screening) may be due to the fact that individuals who were receiving clinical care at University B’s Student Health Services were opted out of the screen, per university administrator preferences. Importantly, the substantial number of low risk students who completed the screen suggests that the *Healthy Body Image* program is relevant and acceptable to students who are not necessarily endorsing high concern about their weight and shape or engaging in disordered eating behaviors.

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A variety of outreach activities were used to advertise the *Healthy Body Image* program, increase awareness of eating disorder symptoms and risk factors, and encourage uptake of resources for mental health care. The train-the-trainer approach enabled substantial expansion of outreach activities and resulted in a reported increase in the number of health and wellness-related programs offered to students. Outreach materials can be readily disseminated and integrated with other campus health promotion initiatives.

Limitations

Limitations of this study include the use of only two universities and lack of outcome data for the intervention programs (not collected for the purposes of this pilot trial due to the fact that the interventions have an existing evidence-base[10,16,20]). The number of students who sought clinical evaluation following the screen was also not tracked due to the high degree of anonymity preferred by campus administrators for this pilot implementation. Finally, it is unknown whether the sample of respondents is representative of the campus population-at-large.

Conclusions

The *Healthy Body Image* program offers a readily implemented, evidence-based population-wide intervention that may help colleges more effectively adhere to health promotion guidelines[12] and address rising psychological service demands[3,21]. The *Healthy Body Image* program was feasible and acceptable to implement at two universities. Given these results, a large-scale trial is underway to examine the efficacy and cost-effectiveness of implementing the program in geographically diverse colleges and universities across the United States. The *Healthy Body Image* program has also been expanded to incorporate a guided self-help intervention for clinical eating disorders (excluding full-syndrome anorexia nervosa, for whom more intensive medical intervention is warranted), which may further improve access and reduce barriers to mental health service delivery[22–24]. If successful, the *Healthy Body Image* platform has the potential to extend current recommendations for eating disorder health promotion and intervention and offers a comprehensive, low-cost, and innovative platform to improve college mental health care delivery.

Acknowledgments

The authors wish to thank the students and staff at Stanford University and Washington University in St. Louis for their support of this project, HealthMunk LLC for providing the software program, and Stanford University's Health Improvement Program for hosting the screening database.

FUNDING

MJ, CBT, MT, and DEW received support from the National Institute of Mental Health (NIMH; R01 MH100455). CBT and MT received grant support from NIMH (R01 MH081124) and CBT received grant support the National Health and Medical Research Council (NHMRC; 003813). DEW received grant support from NIMH (R01 MH081125 and K24 MH070446). AEK received grant support from the National Heart, Lung, and Blood Institute (NHLBI; T32 HL007456; PI: DEW); MJ received support from Stanford University Office of the President and anonymous gifts to the Lucile Packard Foundation for Children's Health.

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Table 1

Screening Results

	University A: Solicited Screening (N = 425)		University B: Universal Screening (N = 1133)	
	N	**(% of participants)**	**N**	**(% of participants)**
Sex				
Female	332	(78.1)	640	(56.5)
Male	91	(21.4)	485	(42.8)
Transgender M to F	2	(.5)	0	0
Gender non conforming	0	0	1	(.1)
Age, mean (SD)	20.48	(3.7)	18.05	(1.6)
Ethnicity				
White	193	(45.4)	689	(60.8)
Black/African American	32	(7.5)	65	(5.7)
Asian	105	(24.7)	257	(22.7)
Hispanic/Latino	23	(5.4)	25	(2.2)
Other	21	(4.9)	17	(1.5)
Biracial/Multiethnic	51	(12)	75	(6.6)
Year in School				
Undergraduate Y1	165	(38.8)	1025	(90.5)
Undergraduate Y2	72	(16.9)	91	(8.0)
Undergraduate Y3	58	(13.6)	9	(.8)
Undergraduate Y4	60	(14.1)	7	(.6)
Undergraduate Y5	6	(1.4)	0	0
Graduate	58	(13.7)	0	0
Post-doctoral	6	(1.4)	0	0
Learned About Screen				
Flyer or printed material	116	(27.3)	26	(2.3)
HBI website	39	(9)	415	(36.6)
Other campus website	19	(4.5)	418	(36.9)
Residential education	47	(11.1)	7	(.6)

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	University A: Solicited Screening (N = 425)				University B: Universal Screening (N = 1133)			
	N		(% of participants)		N		(% of participants)	
Peer health educator	77		(18.1)		7		(.6)	
Student health services	40		(9.4)		0		0	
Other	87		(20.5)		5		(.4)	
	Males (N = 91)		Females (N = 332)		Males (N = 485)		Females (N = 640)	
	N	(% of Males)	N	(% of Females)	N	(% of Males)	N	(% of Females)
Low Risk	55	(60.4)	112	(33.7)	411	(84.7)	395	(61.7)
High Risk	32	(35.2)	166	(50)	70	(14.4)	224	(35)
Clinical Intervention Warranted	4	(4.4)	54	(16.3)	4	(.8)	21	(3.3)
DSM-5 Anorexia Nervosa	0	0	7	(2.1)	0	0	4	(.6)
DSM-5 Bulimia Nervosa	2	(2.2)	29	(8.7)	3	(.6)	8	(1.3)
DSM-5 Binge Eating Disorder	2	(2.2)	10	(3.0)	1	(.2)	4	(.6)
DSM-5 Purging Disorder	0	0	8	(2.4)	0	0	5	(.8)
Loss of menses for 3 months of more	NA	NA	70	(21.1)	NA	NA	54	(8.4)
Self-Reported history of an Eating Disorder*	0	0	69	(20.8)	5	(1)	32	(5)
Anorexia Nervosa	0	0	24	(7.2)	1	(.2)	15	(2.3)
Bulimia Nervosa	0	0	26	(7.8)	2	(.4)	6	(.9)
Binge Eating Disorder	0	0	22	(6.6)	2	(.4)	12	(1.9)
Eating Disorder Not Otherwise Specified	0	0	27	(8.1)	4	(.8)	12	(1.9)
Self-reported current Eating Disorder	0	0	18	(5.4)	3	(.6)	8	(1.3)
Psychiatric treatment in past year	6	(6.6)	68	(20.5)	27	(5.6)	64	(10)
Eating disorder treatment in past year	0	0	11	(3.3)	2	(.4)	7	(1.1)

* Can report more than one diagnosis; NA=Not applicable