

Nutrition and Physical Activity: Institutions of Higher Education Digital Health Interventions to Increase Healthy Eating and Physical Activity among Students

Summary Evidence Table

This table outlines information from the studies included in the Community Guide systematic review of Institutions of Higher Education Digital Health Interventions to Increase Healthy Eating and Physical Activity among Students. It details study quality, population and intervention characteristics, and study outcomes considered in this review. Complete references for each study can be found in the Included Studies section of the [review summary](#).

Abbreviations Used in This Document:

- Outcomes:
 - BMI: body mass index
 - DBP: diastolic blood pressure
 - FV: fruits and vegetables
 - MVPA: moderate to vigorous physical activity
 - SBP: systolic blood pressure
 - SSB: sugar sweetened beverage
- Study design:
 - iRCT: individual randomized controlled trial
 - gRCT: group randomized trial
- Components:
 - CC: coaching or counseling
 - SM: self-monitoring
 - GS: goal setting
 - FB: computer feedback
 - SS: social support
 - MS: motivational strategies
- Measurement terms:
 - CI: confidence interval
 - d: day
 - dL: deciliter
 - g: grams
 - hrs: hours
 - kcal: kilocalories
 - kg: kilograms
 - m: meter
 - min: minutes
 - mg: milligram
 - mmHg: millimeters of mercury
 - mo: months
 - oz: ounce
 - serv: servings
 - wk: week
 - yrs: years
- Other terms:
 - f/u: follow-up
 - ITT: intention-to-treat
 - NA: not applicable
 - NR: not reported
 - NS: not significant
 - SES: socioeconomic status

Notes:

- **Suitability of design** includes three categories: greatest, moderate, or least suitable design. [Read more](#) >>
- **Quality of Execution** – Studies are assessed to have good, fair, or limited quality of execution. [Read more](#) >>
- **Race/ethnicity** of the study population: The Community Guide only summarizes race/ethnicity for studies conducted in the United States.
- **Intensity:**
 - High: at least weekly contact with trained counselor or coach, either in-person or telephone, and/or daily tracking or reminders of dietary/physical activity (PA) habits.
 - Moderate: less than weekly contact with trained counselor or coach, and/or weekly tracking, goal setting or feedback of dietary/PA habits
 - Low: No contact with trained counselor or coach; tracking, less than weekly goal setting or feedback of dietary/PA habits

| Study | Study Sample | Intervention Characteristics | Results |
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| <p>Author, Year: Lytle et al. 2017/Laska et al. 2016</p> <p>Study Design: iRCT</p> <p>Suitability of Design: Greatest</p> <p>Quality of Execution: Good</p> <p>Study Arm(s): Single</p> <p>University: 2-year public colleges (n=3)</p> | <p>Sample size: Intervention: 224 Control: 217</p> <p>Demographics: <u>Intervention</u> Mean age: 22.9 yrs Gender: 67.0% female Race/ethnicity: 76.3% white; 7.6% Hispanic or Latino BMI: 24.4 kg/m² Prevalence of overweight or obesity: 46.4% overweight or obese</p> <p><u>Control</u> Mean age: 22.8 yrs Gender: 68.2% female Race/ethnicity: 68.7% white; 7.4% Hispanic or Latino BMI: 24.4 kg/m² Prevalence of overweight or obesity: 46.4%</p> | <p>Location (urbanicity): Twin Cities, MN, US (urban)</p> <p>Intervention duration: 24 mos</p> <p>When intervention occurred: 2011-2014</p> <p>Intervention: Intensity: unknown Component(s): SS+SM+GS+MS+ED Device(s): computer/website</p> <p><i>Intervention:</i> 1 semester course (online, face-to-face, or hybrid) on healthy weight maintenance (appropriate diet, physical activity, stress management and sleep) with a social network website. The website encouraged self-monitoring, goal setting, and interaction around topics taught in the course. In addition to being able to self-monitor and set goals, the website also included a discussion forum for students to engage with each other on a variety of topics. Incentives in the form of points for participation were provided and</p> | <p><u>SSB (times/d)</u> Intervention: baseline: 0.7; f/u: 0.6 Comparison: baseline: 0.8; f/u: 0.7 Adjusted difference between groups: 0.0 times/d (p=0.608)</p> <p><u>Leisure Time PA (min/wk)</u> Intervention: baseline: 310.0; f/u: 212.5 Comparison: baseline: 245.4; f/u: 220.7 Adjusted difference between groups: -72.8 min/wk (p=0.538)</p> <p><u>TV (hrs/d)</u> Intervention: baseline: 1.5; f/u: 1.3 Comparison: baseline: 1.5; f/u: 1.2 Adjusted difference between groups: +0.1 hrs/d (p=0.570)</p> <p><u>Leisure-time computer use (hrs/d)</u> Intervention: baseline: 1.2; f/u: 1.2 Comparison: baseline: 1.3; f/u: 1.1 Adjusted difference between groups: +0 hrs/d (p=0.605)</p> |

| Study | Study Sample | Intervention Characteristics | Results |
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| | | <p>could be redeemed for a variety of wellness-related products such as yoga mats and cooking utensils. These incentives and periodic encouragement via e-mail from intervention staff were used to encourage students.</p> <p>Comparison: health assessments at measurement visits and basic health promotion information on a quarterly basis</p> | <p><u>Total daily sleep (hrs/night)</u> Intervention: baseline: 8.4; f/u: 8.4 Comparison: baseline: 8.3; f/u: 8.1 Adjusted difference between groups: -0.2 hrs/night (p=0.126)</p> <p><u>BMI (kg/m²)</u> Intervention: baseline: 25.2; f/u: 26.0 Comparison: baseline: 25.4; f/u: 26.2 Adjusted difference between groups: -0.20 kg/m² (p=0.699)</p> <p><u>Prevalence of overweight or obesity (%)</u> Intervention: baseline: 44.0; f/u: 46.5 Comparison: baseline: 46.8; f/u: 57.6 Adjusted difference between groups: -8.3 pct pts (p=0.049)</p> <p>Paper conclusions: No change in BMI; however, 8% reduction in the prevalence of overweight and obesity over time may have population-level effect</p> |
| <p>Author, Year: West et al. 2016</p> <p>Study Design: iRCT</p> <p>Suitability of Design: Greatest</p> <p>Quality of Execution: Good</p> <p>Study Arm(s): Single</p> <p>University: 2 large, public universities (University of South Carolina and College of Charleston)</p> | <p>Sample size: Intervention: 29 Control: 29</p> <p>Demographics: <u>Intervention</u> Mean age: 22.1 yrs; 97% junior or seniors Gender: 79% female Race/ethnicity: 83% white Prevalence of overweight or obesity: 24%</p> <p><u>Control</u> Mean age: 21.1 yrs; 100% junior or senior Gender: 83% female</p> | <p>Location (urbanicity): South Carolina, US (NR)</p> <p>Intervention duration: 2.25 mos</p> <p>When intervention occurred: year NR, spring semester</p> <p>Intervention: Intensity: high Component(s): SM+SS+GS+FB+MS+ED Device(s): computer/website; mobile/app; activity tracker</p> <p><i>Intervention:</i> 8-health promotion and social support lessons. The intervention focused on weight gain prevention. Participants received Wi-Fi-enabled scale for daily self-weighing and to track weight and an electronic physical activity tracker</p> | <p><u>Weight (kg)</u> Intervention: baseline: 67.3; f/u: 66.8 Comparison: baseline: 66.6; f/u: 66.2 Summary Effect: -0.03 kg (p=0.94)</p> <p>Paper conclusions: “The short-term effect of this technology-based weight gain prevention intervention for college students is promising and merits evaluation over a longer duration to determine whether engagement and behavioral improvements positively affect weight outcomes and can be maintained”</p> |

| Study | Study Sample | Intervention Characteristics | Results |
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| | Race/ethnicity: 97% white Prevalence of overweight or obesity: 21% | (provides real time update and tracker on website or app). Emailed weekly newsletters and private social media platform group. Weekly social media platform post facilitated by study counselor. Overweight participants focused on weight management; those who were not overweight focused on diet and physical activity while maintaining weight. Comparison: similar intervention with information on human papillomavirus vaccine rather than diet and PA | |
| <p>Author, Year: Lyzwinski et al., 2019</p> <p>Study Design: iRCT</p> <p>Suitability of Design: Greatest</p> <p>Quality of Execution: Good</p> <p>Study Arm(s): Single</p> <p>University: large, public universities (University of Queensland at St. Lucia and Herston undergraduate)</p> | <p>Sample size: Intervention: 45 Control: 45</p> <p>Demographics: <u>Intervention</u> Mean age: 20.16 yrs Gender: 74% female Race/ethnicity: 77% white BMI: 26.09 kg/m²</p> <p><u>Control</u> Mean age: 20.22 yrs Gender: 61% female Race/ethnicity: 71% white BMI: 25.73 kg/m²</p> | <p>Location (urbanicity): Brisbane, Australia (NR)</p> <p>Intervention duration: 2.75 mos When intervention occurred: 2017</p> <p>Intervention: Intensity: High Component(s): FB+MS+ED Device(s): Mobile/App</p> <p><i>Intervention:</i> Mindfulness app – tailored to college students, themes on weight gain in college students and common college student stressors. App educates (written lectures and audio), reminds, prompts, and motivates students on mindful eating (txt messages pushed out during eating times) and stress reduction techniques. The app also has mindful exercise that focused on encouraging physical activity.</p> <p>Comparison: self-monitoring e-diary for diet and PA</p> | <p><u>Total MET min/wk</u> Baseline: NR Log transformed difference between groups: 0.1 (p=0.15)</p> <p><u>Weight (kg)</u> Intervention: baseline: 76.4; f/u: NR Comparison: baseline: 76.2; f/u: NR ITT Mean difference: -2.2 kg, p=0.10</p> <p><u>Mindful Eating Questionnaire</u> Intervention: baseline: 2.6; f/u: NR Comparison: baseline: 2.6; f/u: NR Adjusted mean difference: +0.3 (p<0.0001)</p> <p><u>Uncontrolled Eating</u> Intervention: baseline: 22.0; f/u: NR Comparison: baseline: 21.6; f/u: NR Adjusted mean difference: -1.1 (p=0.02)</p> <p><u>Emotional Eating</u> Intervention: baseline: 7.8; f/u: NR Comparison: baseline: 6.6; f/u: NR Adjusted mean difference: -2.1 (p=0.02)</p> <p>Paper conclusions: the mindfulness app holds promise for weight-related</p> |

| Study | Study Sample | Intervention Characteristics | Results |
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| | | | lifestyle behaviors related to stress and stress eating, but more studies are needed to confirm these relationships |
| <p>Author, Year: Gow et al., 2010</p> <p>Study Design: iRCT</p> <p>Suitability of Design: Greatest</p> <p>Quality of Execution: Fair</p> <p>Study Arm(s): 2 arms: Internet; Internet + Feedback</p> <p>University: large, public university</p> | <p>Sample size: Internet: 41 Internet+Feedback: 39 Control: 40</p> <p>Demographics: <u>All groups combined</u> Mean age: 18.1 yrs Gender: 74.2% female Race/ethnicity: 53.7% white; 22.2% black or African American; 10.8% Asian; 2.5% Hispanic or Latino, 10.8% other Prevalence of overweight or obesity Internet: 42.5% Internet+Feedback: 27.5% Comparison: 35.0%</p> | <p>Location (urbanicity): Virginia, US (NR)</p> <p>Intervention duration: 1.5 mos When intervention occurred: year NR, fall semester</p> <p>Intervention: Internet Only Arm Intensity: Moderate Component(s): SM+SS+ED Device(s): computer/website</p> <p>Intervention tailored to college students; weekly web-based learning sessions. Participatory activities incorporated which include, including self-assessments, 45 min on-line group discussions lead by clinician via discussion board and experiential activities (e.g., mindful eating). Homework assignments encouraged using new skills.</p> <p>Intervention: Internet+Feedback Arm Intensity: Moderate Component(s): SM+SS+FB+ED Device(s): computer/website, mobile/app</p> <p>Intervention the same as reported above for Internet Only Arm plus participants weighed themselves and report weight once each week via web-based learning system. Graph of change in weight with suggested changes emailed each week.</p> <p>Comparison: No treatment control</p> | <p><u>FV (serv/d)</u> Internet Arm: baseline: 1.9; f/u: 1.6 Comparison: baseline: 1.8; f/u: 1.4 Summary Effect: +0.1 serv/d (NR)</p> <p>Internet+Feedback Arm: baseline: 1.3; f/u: 1.7 Comparison: baseline: 1.8; f/u: 1.4 Summary Effect: +0.8 serv/d (NR)</p> <p><u>Fat (g/d)</u> Internet Arm: baseline: 104.7; f/u: 102.6 Comparison: baseline: 95.4; f/u: 104.6 Summary Effect: -11.3 g/d (NR)</p> <p>Internet+Feedback Arm: baseline: 106.0; f/u: 104.6 Comparison: baseline: 95.4; f/u: 104.6 Summary Effect: -10.5 g/d (NR)</p> <p><u>Fiber (g/d)</u> Internet Arm: baseline: 15.5; f/u: 15.7 Comparison: baseline: 15.4; f/u: 14.8 Summary Effect: +0.7 g/d (NR)</p> <p>Internet+Feedback Arm: baseline: 14.4; f/u: 15.8 Comparison: baseline: 15.4; f/u: 14.8 Summary Effect: -1.9 g/d (NR)</p> <p><u>PA (MET min/wk)</u> Internet Arm: baseline: 4725; f/u: 3059 Comparison: baseline: 3289; f/u: 4304 Summary Effect: -2681 MET min/wk</p> |

| Study | Study Sample | Intervention Characteristics | Results |
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| | | | <p>Internet+Feedback Arm: baseline: 2782; f/u:4119 Comparison: baseline: 3289; f/u: 4304 Summary Effect: 322.0 MET min/wk</p> <p><u>BMI (kg/m²)</u> Internet Arm: baseline: 25.02; f/u: 24.58 Comparison Arm: baseline: 24.12; f/u: 24.56 Adjusted Mean Difference: 0.02 kg/m²</p> <p>Internet+Feedback Arm: baseline: 23.64; f/u: 24.13 Comparison: baseline: 24.12; f/u: 24.56 Adjusted Mean Difference: -0.43 kg/m²</p> <p><u>Prevalence of Overweight/Obesity:</u> Internet Arm: baseline: 41.5; f/u: 46.3 Comparison: baseline: 35.0; f/u: 35.0 Adjusted Mean Difference: +4.8 pct pts (NR)</p> <p>Internet+Feedback Arm: baseline: 28.2; f/u: 28.2 Comparison: baseline: 35.0; f/u: 35.0 Adjusted Mean Difference: 0.0 pct pts (NR)</p> <p><u>Eating Disorder Inventory (EDI) Body Dissatisfaction</u> Internet Arm: baseline: 28.2; f/u: 29.7 Comparison: baseline: 29.4; f/u: 30.4 Adjusted Mean Difference: +0.4 (NR)</p> <p>Internet+Feedback Arm: baseline: 29.8; f/u: 30.0 Comparison: baseline: 29.4; f/u: 30.4 Adjusted Mean Difference: -0.9 (NR)</p> |

| Study | Study Sample | Intervention Characteristics | Results |
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| | | | <p>Paper conclusions: “this study demonstrated the feasibility of an inexpensive Internet-based intervention in preventing weight gain among college students in the first semester of college. In particular, the combination of weight and caloric feedback with an Internet based intervention showed promising results.”</p> |
| <p>Author, Year: Maurer et al., 2017</p> <p>Study Design: iRCT</p> <p>Suitability of Design: Greatest</p> <p>Quality of Execution: Fair</p> <p>Study Arm(s): Single</p> <p>University: large, public university</p> | <p>Sample size: Intervention: 36 Control: 36</p> <p>Demographics: <u>Intervention</u> Mean age: 19.8 yrs Gender: 85.2% female Race/ethnicity: 55.6% white; 18.5% black or African American; 11.1% Hispanic or Latino; 7.4% Asian; 3.7% other Prevalence of overweight or obesity: 48.1%</p> <p><u>Control</u> Mean age: 19.4 yrs Gender: 92.6% female Race/ethnicity: 59.3% white; 14.8% black or African American; 7.4% Hispanic or Latino; 14.8% Asian Prevalence of overweight or obesity: 29.6%</p> | <p>Location (urbanicity): Florida, US (NR)</p> <p>Intervention duration: 1.5 mos When intervention occurred: NR</p> <p>Intervention: Intensity: High Component(s): SM+GS+FB+MS+ED Device(s): computer/website</p> <p><i>Intervention:</i> Students self-monitored weight, FV intake, and minutes of physical activity each day. Students were encouraged to reach goals of daily self-weighing, 5 or more servings of fruits and vegetables per day, and 30 minutes or more of physical activity per day. During daily online “check-in,” participants received automated tailored feedback.</p> <p>Comparison: daily check in with general health information, general health information included nutrition</p> | <p><u>Caloric Intake (kcal/d)</u> Intervention: baseline: 1962.6; f/u: 1517.1 Comparison: baseline: 1882.3; f/u: 1693.3 mean change: -256.5 kcal/d, NS</p> <p><u>Sat Fat Intake (g/d)</u> Intervention: baseline: 27.1; f/u: 21.8 Comparison: baseline: 25.2; f/u: 20.7 mean change: -0.8 g/d, NS</p> <p><u>Fiber Intake (g/d)</u> Intervention: baseline: 15.8; f/u: 12.4 Comparison: baseline: 17.9; f/u: 16.1 mean change: -1.6 g/d, NS</p> <p><u>MVPA (min/d)</u> Intervention: baseline: 65.4; f/u: 44.3 Comparison: baseline: 69.3; f/u: 95.0 mean change: -42.9 min/d (NS)</p> <p><u>Sitting (hrs/d)</u> Intervention: baseline: 6.9; f/u: 6.2 Comparison: baseline: 6.7; f/u: 5.3 mean change: +0.7 hrs/d (NS)</p> <p><u>Weight (kg)</u> Intervention: baseline: 69.9; f/u: 70.2 Comparison: baseline: 67.6; f/u: 67.8 ITT mean change: 0.1 kg, NS</p> |

| Study | Study Sample | Intervention Characteristics | Results |
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| | | | <p>Paper conclusions: no impact on weight change</p> |
| <p>Author, Year: Sandrick et al., 2017</p> <p>Study Design: iRCT</p> <p>Suitability of Design: Greatest</p> <p>Quality of Execution: Good</p> <p>Study Arm(s): Single</p> <p>University: small private university</p> | <p>Sample size: Intervention: 30 Control: 30</p> <p>Demographics: <u>Intervention</u> Mean age: 19.5 yrs Gender: 70% female Race/ethnicity: 93.3% white; 3.3% black or African American; 3.3% Hispanic or Latino Year of Study: 46.7% Freshman; 23.3% Sophomore; 13.3% Junior; 16.7% Senior</p> <p><u>Control</u> Mean age: 19.3 yrs Gender: 67% female Race/ethnicity: 80% white; 13.3% black or African American; 3.3% Hispanic or Latino; 3.3% Asian Year of Study: 40.0% Freshman; 36.7% Sophomore; 16.7% Junior; 6.7% Senior</p> | <p>Location (urbanicity): PA, US (NR)</p> <p>Intervention duration: 2 mos</p> <p>When intervention occurred: January 2015 to May 2015</p> <p>Intervention: Intensity: moderate Component(s): CC+GS+ED Device(s): mobile/app</p> <p><i>Intervention:</i> One face-to-face meeting with health coach lasting 45-60 minutes. During meeting participants set one behavioral goal. Health coaches sent 2 SMS text messages/wk through an app. Each week participants completed brief behavioral assessments on the app. The assessment was used by coaches to customize text messages to help meet goal.</p> <p>Comparison: received baseline survey results and blood test results in writing</p> | <p><u>Diet (Rate Your Plate, 81 possible points, higher score healthier diet)</u> Intervention: baseline: 61.3; f/u: 63.6 Comparison: baseline: 61.5; f/u: 62.7 mean change: +1.1 (p=0.81)</p> <p><u>PA (MET min/wk)</u> Intervention: baseline: 2632; f/u: 3144 Comparison: baseline: 2208; f/u: 2074 mean change: +646 MET min/wk (p=0.04)</p> <p><u>Stress (Perceived Stress Scale, 56 possible points, higher score greater stress)</u> Intervention: baseline: 23.0; f/u: 24.0 Comparison: baseline: 23.1; f/u: 23.8 mean change: 0.3 (p=0.94)</p> <p><u>Sleep (Pittsburgh Sleep Quality Index, 21 points possible, lower score better)</u> Intervention: baseline: 5.1; f/u: 5.2 Comparison: baseline: 5.3; f/u: 5.9 mean change: -0.5 (p=0.37)</p> <p><u>Glucose (mg/dL)</u> Intervention: baseline: 78.6; f/u: 74.0 Comparison: baseline: 79.0; f/u: 78.2 mean change: -3.8 mg/dL (p<0.05)</p> <p><u>Cholesterol (mg/dL)</u> Intervention: baseline: 161.7; f/u: 158.9 Comparison: baseline: 157.1; f/u: 160.5 mean change: -6.2 mg/dL (p=0.83)</p> |

| Study | Study Sample | Intervention Characteristics | Results |
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| | | | <p>Paper conclusions: “The health coaching session plus tailored SMS text messages improved self-selected health behaviors with a modest ripple effect to include unselected health behaviors.”</p> |
| <p>Author, Year: Schweitzer et al, 2016</p> <p>Study Design: iRCT</p> <p>Suitability of Design: Greatest</p> <p>Quality of Execution: Good</p> <p>Study Arm(s): Single</p> <p>University: large, public university</p> | <p>Sample size: Intervention: 99 Control: 49</p> <p>Demographics: <u>Intervention</u> Mean age: 19.8 yrs Gender: 69% female Race/ethnicity: 47% white; 23% Asian; 16% black or African American; 7% Hispanic or Latino; 4% mixed Year of Study: 3% Freshman; 39% Sophomore; 55% Junior; 3% Senior Prevalence of overweight or obese: 24%</p> <p><u>Control</u> Mean age: 19.6 yrs Gender: 67% female Race/ethnicity: 43% white; 22% Asian; 26% black or African American; 2% Hispanic or Latino; 4% mixed Year of Study: 10% Freshman; 48% Sophomore; 40% Junior; 2% Senior Prevalence of overweight or obese: 20%</p> | <p>Location (urbanicity): MD, US (NR)</p> <p>Intervention duration: 6 mos</p> <p>When intervention occurred: fall-winter, NR</p> <p>Intervention: Intensity: moderate Component(s): SM+GS+SS+FB+ED Device(s): computer/website</p> <p><i>Intervention:</i> A Lifestyle Intervention delivered weekly by email. The intervention was modified for college students. Program included goal setting, information and goal relevance for each learner, overcoming barriers and specific action-based advice. Participants completed surveys and received feedback. All participants were encouraged to select a goal related to the 3 feedback topics. Participants chose one of these topics as the focus for weekly messages offering tailored small-step goals, tips for overcoming barriers to goals, health information, and social support. Web links in the intervention email also led students to their personal account on the website, where educational information and feedback on progress were offered.</p> <p>Comparison: weekly information on health topics not related to diet or PA, such as distracted driving, sleep hygiene, and smoking cessation.</p> | <p><u>FV (c/d)</u> Intervention: baseline: 2.6; f/u: 2.4 Comparison: baseline: 2.7; f/u: 2.4 mean change: 0.10 c/d (p=0.64)</p> <p><u>Sat Fat (% total kcal)</u> Intervention: baseline: 10.6; f/u: 10.1 Comparison: baseline: 12.1; f/u: 10.6 mean change: -1.3% of kcal (p=0.048)</p> <p><u>Sugar (% total kcal)</u> Intervention: baseline: 2.6; f/u: 2.4 Comparison: baseline: 2.7; f/u: 2.4 mean change: 1.0% total kcal (p=0.32)</p> <p><u>PA (min/wk)</u> Intervention: baseline: 795; f/u: 788 Comparison: baseline: 844; f/u: 801 mean change: 36 min/wk (p=0.63)</p> <p><u>BMI (kg/m²)</u> Intervention: baseline: 23.1; f/u: 23.2 Comparison: baseline: 22.8; f/u: 22.8 mean change: 0.1 kg/m² (p=0.80)</p> <p><u>SBP (mmHg)</u> Intervention: baseline: 111; f/u: 110 Comparison: baseline: 111; f/u: 110 mean change: 0.0 mmHg (p=0.92)</p> <p><u>DBP (mmHg)</u> Intervention: baseline: 71.9; f/u: 71.0 Comparison: baseline: 70.8; f/u: 70.2 mean change: -0.3 mmHg (p=0.80)</p> |

| Study | Study Sample | Intervention Characteristics | Results |
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| | | | <p>Paper conclusions: Use of an electronic wellness program is feasible in college students and resulted in a decrease in saturated fat intake and an increase in observed fruit intake compared to a control group.</p> |
| <p>Author, Year: Kattelman et al., 2014</p> <p>Study Design: iRCT</p> <p>Suitability of Design: Greatest</p> <p>Quality of Execution: Good</p> <p>Study Arm(s): Single</p> <p>Intent: healthy weight management</p> <p>University: large public universities (East Carolina University, Kansas State University, Michigan State University, Purdue University, Rutgers University, South Dakota State University, Syracuse University, Tuskegee University, University of Florida, University of New Hampshire, University of Rhode Island, University of Wisconsin–Madison,</p> | <p>Sample size: Intervention: 824 Control: 815</p> <p>Demographics: <u>Intervention</u> Mean age: 19.4 yrs Gender: 67.1% female Race/ethnicity: 74.0% white; 13.2% black or African American; 7.7% Asian; 5.0% Hispanic or Latino; 0.4% Native Hawaiian/Pacific Islander; 0.8% American Indian/Alaska Native; 3.8% Other Year of Study: 38.2% Freshman; 35.0% Sophomore; 24.8% Junior; 1.9% Senior BMI: 23.9 kg/m² Prevalence of overweight or obesity: 30.5%</p> <p><u>Control</u> Mean age: 19.3 yrs Gender: 67.3% female Race/ethnicity: 70.2% white; 13.0% black or African American; 11.1% Asian; 6.4% Hispanic or Latino; 0.7% Native Hawaiian/Pacific Islander; 0.7% American Indian/Alaska Native; 4.4% Other</p> | <p>Location (urbanicity): US (Midwest and East, NR)</p> <p>Intervention duration: intervention 2.5 mos; maintenance 12.5 mos</p> <p>When intervention occurred: spring semester (Jan to May) 2011</p> <p>Intervention: Intensity: moderate Component(s): SM+GS+FB+ED Device(s): computer/website</p> <p><i>Intervention:</i> 21 mini-educational lessons and e-mail messages (called nudges). Nudges were short, entertaining messages with videos personalized with the participant's name and stage-tailored. Nudges reinforced behaviors promoted in the lessons and encouraged participants to visit the Web portal to view the lessons and set goals. During the intervention phase, participants received 3 nudges each week plus 1 encouraging them to view the new lessons. Within their personal Web portal, participants could view a graph of their goal(s), progress toward a goal, and recommendations for each target behavior. Maintenance (12.5 mos): the frequency of e-mail nudges was reduced to 4/mo. The Web site remained active for review but no new lessons were added.</p> | <p><u>FV (c/d)</u> Intervention: baseline: 2.6; f/u: 2.8 Comparison: baseline: 2.7; f/u: 2.5 mean change: +0.4 c/d (p=<0.05) maintenance of effect: +0.4 c/d</p> <p><u>Fat intake (% kcal)</u> Intervention: baseline: 31.3; f/u: 30.4 Comparison: baseline: 30.9; f/u: 31.0 mean change: -1.0 %kcal (NS)</p> <p><u>SSB (kcal/d)</u> Intervention: baseline: 149; f/u: 129 Comparison: baseline: 152; f/u: 143 mean change: -11 kcal/d (NS)</p> <p><u>Whole grains (serv/d)</u> Intervention: baseline: 2.1; f/u: 2.2 Comparison: baseline: 2.2; f/u: 2.2 mean change: +0.1 serv/d (NS)</p> <p><u>PA (MET min/wk)</u> Intervention: baseline: 2212; f/u: 2387 Comparison: baseline: 2136; f/u: 2225 mean change: +86.0 MET min/wk (NS) maintenance of effect: -38.0 MET min/wk</p> <p><u>BMI (kg/m²)</u> Intervention: baseline: 23.9; f/u: 23.9 Comparison: baseline: 24.4; f/u: 24.4 mean change: 0.0 kg/m² (NS) maintenance of effect: -0.1 kg/m²</p> |

| Study | Study Sample | Intervention Characteristics | Results |
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| <p>and West Virginia University)</p> | <p>Year of Study: 38.3% Freshman; 34.8% Sophomore; 25.2% Junior; 1.7% Senior BMI: 24.3 kg/m² Prevalence of overweight or obesity: 32.9%</p> | <p>Comparison: no treatment</p> | <p><u>Stress (Perceived Stress Scale, a higher score indicates higher perceived stress)</u> Intervention: baseline: 22.4; f/u: 22.8 Comparison: baseline: 22.4; f/u: 23.2 mean change: -0.4 (NS)</p> <p><u>Sleep (h/d)</u> Intervention: baseline: 7.5; f/u: 7.3 Comparison: baseline: 7.8; f/u: 6.9 mean change: +0.7 h/d (p<0.05)</p> <p>Paper conclusions: No change between groups for weight or BMI, but the intervention supported positive change in behaviors that may reduce access to weight gain, such as fruit and vegetable intake.</p> |
| <p>Author, Year: Greene et al., 2012</p> <p>Study Design: iRCT</p> <p>Suitability of Design: Greatest</p> <p>Quality of Execution: Fair</p> <p>Study Arm(s): Single or List study arms</p> <p>University: large public universities (Michigan State University, South Dakota State University, Syracuse University, The Pennsylvania State University, Tuskegee University,</p> | <p>Sample size: Intervention: 830 Control: 859</p> <p>Demographics: <u>Intervention and Comparison Group combined</u> Mean age: 19.1 yrs Gender: 62% female Race/ethnicity: 79% white; 10% black of African American; 3% Hispanic or Latino; 7% other BMI: 23.9 kg/m² Prevalence of overweight or obesity: 29%</p> | <p>Location (urbanicity): US (Midwest and East, NR)</p> <p>Intervention duration: 3 mos with follow-up at 12 mos</p> <p>When intervention occurred: NR</p> <p>Intervention: Intensity: moderate Component(s): SM+GS+FB+ED Device(s): computer/website</p> <p><i>Intervention:</i> 10-web-based lesson curriculum (15 min each). The lessons included mini assessments, graphs, charts, cartoons and research findings. At the end of each lesson, participants set goals for fruit and vegetable intake and physical activity; self-evaluation of these behaviors introduced the next lesson's goal setting activity. Participant could view a profile page that displayed their physical measurements and aerobic capacity for each</p> | <p><u>FV (c/d)</u> Intervention: baseline: 3.3; f/u: 4.1 Comparison: baseline: 3.1; f/u: 2.8 mean change: 1.1 c/d (NR) maintenance of effect: 0.5 c/d</p> <p><u>PA (MET min/wk)</u> Intervention: baseline: 2766.3; f/u: 2635.3 Comparison: baseline: 2794.2; f/u: 2291.8 mean change: 371.4 MET min/wk (NR) maintenance of effect: 297.9 MET min/wk</p> <p><u>BMI (kg/m²)</u> Intervention: baseline: 23.3; f/u: 23.5 Comparison: baseline: 23.5; f/u: 23.7 mean change: 0.0 kg/m² (NR) maintenance of effect: 0.0 kg/m²</p> <p><u>Eating competence (0-48; higher is better)</u></p> |

| Study | Study Sample | Intervention Characteristics | Results |
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| University of Rhode Island, University of Maine, and University of Wisconsin) | | assessment period and weekly graphs of goals, as well as self-reported behavior for fruits and vegetables and physical activity compared to program recommendations Comparison: no intervention | Intervention: baseline: 31.2; f/u: 31.6 Comparison: baseline: 31.9; f/u: 32.4 mean change: -0.1 (NR) Paper conclusions: 10 wk online nutrition and PA intervention had a positive, lasting effect on FV intake and maintained baseline levels of physical activity in a population that experiences declines in these healthful behaviors |
| <p>Author, Year: Pope et al., 2019</p> <p>Study Design: iRCT</p> <p>Suitability of Design: Greatest</p> <p>Quality of Execution: Good</p> <p>Study Arm(s): Single</p> <p>University: large, public university</p> | <p>Sample size: Intervention: 19 Control: 19</p> <p>Demographics: <u>Intervention</u> Mean age: 21.2 yrs Gender: 78.9% female Race/ethnicity: 84.2% white; 15.8% Asian BMI: 24.9 kg/m²</p> <p><u>Control</u> Mean age: 21.8 yrs Gender: 68.4% female Race/ethnicity: 57.9% white; 42.1% Asian BMI: 23.8 kg/m²</p> | <p>Location (urbanicity): MN US (urban)</p> <p>Intervention duration: 3 mos</p> <p>When intervention occurred: Fall 2017/Spring 2018</p> <p>Intervention: Intensity: high Component(s): SM+FB+SS+ED Device(s): computer/website + wearable device</p> <p><i>Intervention:</i> provided smartwatch, placed within the social media group with biweekly PA (Mon) and dietary (Thurs) health education tips.</p> <p>Comparison: content-identical, social media group, with no smartwatch provided</p> | <p><u>FV (c/d)</u> Intervention: baseline: 2.3; f/u: 2.3 Comparison: baseline: 2.1; f/u: 1.6 mean change: +0.5 c/d (NS)</p> <p><u>Total Energy Intake (kcal/d)</u> Intervention: baseline: 1986.1; f/u: 1945.1 Comparison: baseline: 1953.4; f/u: 1810.1 mean change: +102.3 kcal/d (NS)</p> <p><u>Whole Grains (oz/d)</u> Intervention: baseline: 1.2; f/u: 1.1 Comparison: baseline: 0.6; f/u: 0.8 mean change: -0.3 oz/d (NS)</p> <p><u>SSB (kcal/d)</u> Intervention: baseline: 110.1; f/u: 147.8 Comparison: baseline: 128.0; f/u: 110.8 mean change: +54.9 kcal/d (NS)</p> <p><u>MVPA (min/d)</u> Intervention: baseline: 6.1; f/u: 8.1 Comparison: baseline: 5.8; f/u: 6.7 mean change: +1.1 min/d (NS)</p> <p><u>Sedentary Behavior (min/d)</u> Intervention: baseline: 534.7; f/u: 548.7 Comparison: baseline: 553.6; f/u: 538.9</p> |

| Study | Study Sample | Intervention Characteristics | Results |
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| | | | <p>mean change: +28.7 min/d (NS)</p> <p><u>Weight (kg)</u> Intervention: baseline: 73.4; f/u: 72.9 Comparison: baseline: 69.0; f/u: 68.5 mean change: 0.0 kg (NS)</p> <p>Paper conclusions: Both interventions were feasible of interest to college students and demonstrated initial effectiveness at improving health behaviors/outcomes. The addition of a smartwatch may not result in additional benefit.</p> |
| <p>Author, Year: Cameron et al., 2015</p> <p>Study Design: iRCT</p> <p>Suitability of Design: Greatest</p> <p>Quality of Execution: Fair</p> <p>Study Arm(s): Single</p> <p>University: large, public university (University of Sheffield undergraduate students)</p> | <p>Sample size: Intervention: 1346 Control: 1275</p> <p>Demographics: <u>Intervention</u> Mean age: 18.73 yrs Gender: 55.81% female Race/ethnicity: 76.07% white; 13.56% Asian and Asian British; 2.77% black and black British; 5.70% other/mixed BMI: 21.50 kg/m²</p> <p><u>Control</u> Mean age: 18.89 yrs Gender: 54.87% female Race/ethnicity: 77.97% white; 15.3% Asian and Asian British; 2.06% black and black British; 6.58% other/mixed BMI: 21.67 kg/m²</p> | <p>Location (urbanicity): UK (NR)</p> <p>Intervention duration: 1 mo with 6 mos follow-up</p> <p>When intervention occurred: 2013</p> <p>Intervention: Intensity: moderate Component(s): GS+ED Device(s): computer/website</p> <p><i>Intervention:</i> online health behavior intervention targeting FV, PA, binge drinking and smoking. Intervention includes text and videos, as well as links to other relevant material. Participants work through modules at own pace and are provided access to a planner that contains instructions to form implementation intentions to facilitate the translation of good intentions into action. If they wish, participants can also set a reminder for each plan to be repeated at a set time interval.</p> <p>Comparison: none</p> | <p><u>FV (portions/d)</u> Intervention: baseline: 5.6; f/u: 3.8 Comparison: baseline: 5.7; f/u: 3.6 mean change: +0.3 portions/d (NS) maintenance of effect: “approach significance”</p> <p><u>PA (MET min/wk)</u> Intervention: baseline: 3350.5; f/u: 3515.2 Comparison: baseline: 3616.1; f/u: 3501.8 mean change: -21.0 MET min/wk (NS) maintenance of effect: “no significant change”</p> <p><u>BMI (kg/m²)</u> Intervention: baseline: 22.0; f/u: 21.5 Comparison: baseline: 21.8; f/u: 21.6 mean change: -0.3 kg/m² (NS) maintenance of effect: -0.3 kg/m²</p> <p><u>Health Status, EQ-5D-3, higher score is better health</u> Intervention: baseline: 0.9; f/u: 0.9 Comparison: baseline: 0.9; f/u: 0.9</p> |

| Study | Study Sample | Intervention Characteristics | Results |
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| | | | <p>mean change: -0.01 (NS)</p> <p>Paper conclusions: no significant effect, may be due to the focus on multiple versus single health behaviors.</p> |
| <p>Author, Year: Quintiliani et al., 2016</p> <p>Study Design: iRCT</p> <p>Suitability of Design: Greatest</p> <p>Quality of Execution: Good</p> <p>Study Arm(s): Single</p> <p>University: large, public university</p> | <p>Sample size: Intervention: 40 Control: 20</p> <p>Demographics: 1/3 or all participants Pell-grant eligible</p> <p><u>Intervention</u> Mean age: 32.2 yrs Gender: 62.5% female Race/ethnicity: 37.5% white; 22.5% black or African American; 10% Hispanic or Latino; 17.5% other; 22.5% 2 or more races Part-time student: 22.5% Household received food stamps: 23.1%</p> <p><u>Control</u> Mean age: 32.3 yrs Gender: 50.0% female Race/ethnicity: 63.1% white; 5.3% black or African American; 15% Hispanic or Latino; 26.3% other; 5.3% 2 or more races Part time student: 40.4% Household received food stamps: 31.6%</p> | <p>Location (urbanicity): New England, US (NR)</p> <p>Intervention duration: 2 mos When intervention occurred: NR</p> <p>Intervention: Intensity: moderate Component(s): CC+GS+ED Device(s): Telephone</p> <p><i>Intervention:</i> tailored single page report with baseline levels of diet and PA and recommended levels with brief bulleted tips and links to health-related websites by postal mail. In addition, the participants received three telephone motivational interviewing-based counseling sessions with a trained student peer counselor.</p> <p>Comparison: received same tailored report that intervention group received and target tips, but no CC.</p> | <p><u>FV (c/d)</u> Intervention: baseline:3.5; f/u:4.4 Comparison: baseline:4.6; f/u:4.8 mean change: +0.7 c/d (95% CI: -0.2, 1.6 c/d)</p> <p><u>SSB (oz/d)</u> Intervention: baseline:24.9; f/u:18.0 Comparison: baseline:15.1; f/u:15.5 mean change: -6.2 oz/wk (95% CI: -21.7, 9.2 oz/wk)</p> <p><u>MVPA (min/wk)</u> Intervention: baseline:221.3; f/u:216.9 Comparison: baseline:192.6; f/u:301.6 mean change: -107.2 min/wk (95% CI: 229.3, 14.9 min/wk)</p> <p>Paper conclusions: feasible with promising effects on nutrition behaviors and better way to target PA (Authors Note this is one of the first behavioral interventions targeted to nontraditional college students, a large and growing group of underserved adults)</p> |
| <p>Author, Year: O'Brien et al., 2016</p> <p>Study Design: iRCT</p> | <p>Sample size: Intervention: 50 Control: 53</p> | <p>Location (urbanicity): MA, US (urban)</p> <p>Intervention duration: 1 mo When intervention occurred: NR</p> | <p><u>Vegetable</u> Adjusted OR: 2.9, p=0.04</p> <p><u>Fruit</u></p> |

| Study | Study Sample | Intervention Characteristics | Results |
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| <p>Suitability of Design: Greatest</p> <p>Quality of Execution: Fair</p> <p>Study Arm(s): Single</p> <p>University: large private university</p> | <p>Demographics:</p> <p><u>Intervention</u> Mean age: 19.1 yrs Gender: 68% female</p> <p>Race/ethnicity for total sample: 54.7% white; 32.4% Asian; 2.7% black or African American; 10.1% other</p> <p><u>Control</u> Mean age: 19.3 yrs Gender: 68% female Race/ethnicity: see above</p> | <p>Intervention: (web-based intervention + daily messages) Intensity: High Component(s): GS+FB+ED Device(s): computer/website + mobile/app</p> <p><i>Intervention:</i> Assessment with personalized feedback and comparison of consumption of FV to CDC guidelines; PA recommendations; personal appraisals of dietary behaviors; discrepancy between current and ideal dietary behaviors; educational information regarding the impact of dietary behaviors and an opportunity to anticipate and troubleshoot obstacles to attaining dietary goals. Participants provided page of on-campus resources. In addition, for 30 days, participants received one health and fitness text message</p> <p>Comparison: assessment only</p> | <p>Adjusted OR: 1.5, p=0.41</p> <p>Paper conclusions: “brief web-based intervention with daily text messages about personal nutrition and fitness goals may support healthier eating patterns among students”</p> |
| <p>Author, Year: Epton et al., 2014</p> <p>Study Design: iRCT</p> <p>Suitability of Design: Greatest</p> <p>Quality of Execution: Fair</p> <p>Study Arm(s): Single</p> <p>University: Large, public university (University of Sheffield undergraduate students)</p> | <p>Sample size: Intervention: 736 Control: 709</p> <p>Demographics:</p> <p><u>Intervention</u> Mean age: 18.76 yrs Gender: 61.55% female Race/ethnicity: 72.95% white; 20.77% Asian and Asian British; 2.46% black and black British; 3.83% other/mixed BMI: 22.06 kg/m²</p> <p><u>Control</u> Mean age: 19.04 yrs Gender: 55.15% female</p> | <p>Location (urbanicity): UK (NR)</p> <p>Intervention duration: 1 mo with follow-up measure at 6 mos</p> <p>When intervention occurred: 2012</p> <p>Intervention: Intensity: moderate Component(s): GS+ED Device(s): computer/website + mobile/apps</p> <p><i>Intervention:</i> online health behavior intervention targeting FV, PA, binge drinking and smoking. Intervention includes text and videos, as well as links to other relevant material. Participants work through modules at own pace and are provided access to a planner that contains instructions to form implementation intentions to facilitate the</p> | <p><u>FV (portions/d)</u> Intervention: baseline: 6.7; f/u: 6.0 Comparison: baseline: 6.4; f/u: 5.5 mean change: +0.2 portions/d (NS) maintenance of effect: -0.4 portions/d</p> <p><u>PA (MET min/wk)</u> Intervention: baseline: 3140.1; f/u: 2755.6 Comparison: baseline: 3402.4 f/u: 2563.4 mean change: +454.5 MET min/wk (NS) maintenance of effect: -298.2 MET min/wk</p> <p><u>Sitting (hrs/wk)</u> Intervention: baseline: 336.2; f/u: 396.2 Comparison: baseline: 344.4; f/u: 400.6 mean change: +3.8 hrs/wk (NS)</p> |

| Study | Study Sample | Intervention Characteristics | Results |
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| | Race/ethnicity: 73.37% white; 19.12% Asian and Asian British; 2.27% black and black British; 5.24% other/mixed BMI: 22.28 kg/m ² | translation of good intentions into action. If they wish, participants can also set a reminder for each plan to be repeated at a set time interval. Comparison: none | <u>BMI (kg/m²)</u> Intervention: baseline: 22.1; f/u:22.2 Comparison: baseline:22.3; f/u:22.0 mean change: +0.5 kg/m ² (NS) maintenance of effect: -0.2 kg/m ² <u>Health Status, EQ-5D-3, higher score is better health</u> Intervention: baseline: 0.9; f/u:0.9 Comparison: baseline: 0.9; f/u:0.9 mean change: -0.01 (NS) Paper conclusions: engagement was low with little effect on FV intake or PA |
| Author, Year: LaChausse et al., 2012 Study Design: iRCT Suitability of Design: Greatest Quality of Execution: Fair Study Arm(s): Single University: large public university | Sample size: Intervention: 106 Control: 136 Demographics: <u>Intervention</u> Mean age: 26.68 yrs Gender: 78.3% female Race/ethnicity: 15.1% white; 13.20% black or African American; 53.8% Hispanic or Latino; 7.5% Asian; 10.3% other BMI: 29.5 <u>Control</u> Mean age: 22.81 yrs Gender: 73.5% female Race/ethnicity: 24.3% white; 17.6% black or African American; 39.0% Hispanic or Latino; 8.8% Asian; 10.3% other BMI: 28.3 kg/m ² | Location (urbanicity): CA, US (NR) Intervention duration: 3 mos When intervention occurred: NR (manuscript submitted 2010) Intervention: Intensity: moderate Component(s): FB+ED Device(s): computer/website <i>Intervention:</i> interactive, Internet-based nutrition and PA program. Includes 4 assessments, 3 information links and 4 main learning modules. Participants were instructed to visit the website at least 2 hours per week over a 12-week period. . Comparison: no treatment | <u>FV consumption (times/d)</u> Intervention: baseline: 5.1; f/u: 6.2 Comparison: baseline: 5.9; f/u: 6.0 mean change: +1.0 times/d (p<0.05) <u>Aerobic exercise for at 20 min (times/wk)</u> Intervention: baseline: 3.2; f/u: 3.5 Comparison: baseline: 3.4; f/u: 3.4 mean change: +0.4 (NS) <u>BMI (kg/m²)</u> Intervention: baseline: 29.5; f/u: 28.8 Comparison: baseline: 28.3; f/u: 28.0 mean change: -0.4 kg/m ² (NS) <u>Perceived stress, a higher score indicates higher perceived stress</u> Intervention: baseline: 2.7; f/u: 2.5 Comparison: baseline: 2.7; f/u: 2.8 mean change: -0.3 (p<0.05) Paper conclusions: The program was effective in changing students' nutrition |

| Study | Study Sample | Intervention Characteristics | Results |
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| | | | behaviors but had no effect on PA or weight loss. |
| <p>Author, Year: Dennis et al., 2012</p> <p>Study Design: iRCT</p> <p>Suitability of Design: Greatest</p> <p>Quality of Execution: Fair</p> <p>Study Arm(s): Single or List study arms</p> <p>University: large, public university</p> | <p>Sample size: Intervention: 24 Control: 21</p> <p>Demographics:</p> <p><u>Intervention</u> Mean age: 18.1 yrs Gender: 33.3% female BMI: 22.7 kg/m²</p> <p><u>Control</u> Mean age: 18.1 yrs Gender: 47.6% female BMI: 22.9 kg/m²</p> <p>Race/ethnicity for both groups: 77.0% white; 8.9% Asian or Pacific Islander; 13.3% other</p> | <p>Location (urbanicity): VA, US (NR)</p> <p>Intervention duration: 3.5 mos When intervention occurred: Fall 2009</p> <p>Intervention: Intensity: high Component(s): CC+SM+GS+MS+ED Device(s): computer/website</p> <p><i>Intervention:</i> Equal number of online modules and biweekly in-class sessions (50 min/session). The online modules provided information about healthy eating and PA and included self-regulation. Information assisted with planning and tracking, sample meal plans, sample workout plans, and weekly emails that provided information on focused on self-regulation, such as tracking eating and PA. Participants logged in daily to track diet and PA behaviors. In-class sessions included content on goal setting and overcoming barriers. During class sessions students were provided feedback on progress and encouragement to make changes to meet goals. Participants were also provided a minimal monetary incentive to maintain weight.</p> <p>Comparison: Equal number of online modules and biweekly in-class sessions (50 min/session). The online course modules focused on outcome expectations by providing information and the class sessions reinforced outcome expectations.</p> | <p><u>Energy intake (kcal/d)</u> Intervention: baseline: 2274; f/u: 2199 Comparison: baseline: 2093; f/u: 2096 mean change: -78.0 kcal/d (p=0.68)</p> <p><u>Fat (% energy)</u> Intervention: baseline: 34.5; f/u: 34.1 Comparison: baseline: 33.8; f/u: 34.2 mean change: -0.8% (p=0.73)</p> <p><u>MVPA (min/wk)</u> Intervention: baseline: 582; f/u: 225 Comparison: baseline: 283; f/u: 267 mean change: -341.0 min/wk (NR)</p> <p><u>Sedentary Time (hrs/d)</u> Intervention: baseline: 7.5; f/u: 7.3 Comparison: baseline: 6.3; f/u: 7.1 mean change: -0.9 hrs/d (NR)</p> <p><u>BMI (kg/m²)</u> Intervention: baseline: 22.4; f/u: 22.9 Comparison: baseline: 22.9; f/u: 23.2 mean change: +0.2 kg/m² (p=0.18)</p> <p>Paper conclusions: knowledge gains did not lead to improvements in weight-related outcomes</p> |

| Study | Study Sample | Intervention Characteristics | Results |
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| <p>Author, Year: Walsh et al., 2016</p> <p>Study Design: non-randomized controlled trial</p> <p>Suitability of Design: Greatest</p> <p>Quality of Execution: Fair</p> <p>Study Arm(s): Single</p> <p>University: vocational school</p> | <p>Sample size: Intervention: Control:</p> <p>Demographics: <u>All groups combined</u> Mean age: 20 Gender: 32% female Race/ethnicity: 30% white; 40% two or more races; 30% unknown Prevalence of overweight/obese: 59% SES: low income</p> | <p>Location (urbanicity): Northeast US (rural)</p> <p>Intervention duration: 2.5 mos with 5.5mos follow-up</p> <p>When intervention occurred: NR</p> <p>Intervention: Intensity: moderate Component(s): GS+FB+ED Device(s): computer/website</p> <p><i>Intervention:</i> educational modules focused on non-diet weight management, healthy eating, physical activity, and stress management. Modules were designed to be about six minutes in length and included video clips and simple quizzes to increase engagement and provide immediate feedback. Website was accessed weekly by intervention participants in on-site computer labs. Health literacy experts reviewed the modules to modify the reading level to make sure plain language. Participants accessed the website to review educational modules and set weekly goals. One to three modules were introduced each week with 20 total modules. Three nudges were provided each week. Nudges were brief motivational notes and reinforced content from the online educational modules.</p> <p>Comparison: no intervention</p> | <p><u>FV (cups/d)</u> Intervention: baseline: 6.5; f/u: NR Comparison: baseline: 4.4; f/u: NR mean change: "no significant change" maintenance of effect: "no significant change"</p> <p><u>PA (MET min/wk)</u> Intervention: baseline: 3559.5; f/u: NR Comparison: baseline: 2910.5; f/u: NR mean change: "no significant change" maintenance of effect: "no significant change"</p> <p><u>BMI</u> "no significant change" Maintenance of effect: "no significant change"</p> <p><u>Emotional eating</u> (1 low to 5 high) Intervention: baseline: 2.1; f/u: 2.3 Comparison: baseline: 2.1; f/u: 2.6 Modeled estimated mean difference: -0.3 (p=0.327)</p> <p>Paper conclusions: No significant change in BMI, food intake, physical activity, or stress management were noted following the intervention. Food self-regulation was higher for high use treatment group compared to the control group and trends were noted for reduced emotional eating and improved food self-instruction for the high use treatment group. (Note: The high self-report of fruit and vegetable intake and physical activity created a ceiling effect, offering limited opportunity for improvement through intervention.)</p> |