

THE GEORGE  
WASHINGTON  
UNIVERSITY

WASHINGTON, DC

# Use of social media to deliver weight loss interventions

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# Overview



- Focus on how a pilot study (Healthy Owls) informs subsequent R01 (Healthy Body Healthy U)
- Key points from each type of study:
  - Design, Implementation, Recruitment, Evaluation, Dissemination
- Take home messages

# Pilot Study



## Original Article

CLINICAL TRIALS: BEHAVIOR, PHARMACOTHERAPY, DEVICES, SURGERY

Obesity

### Using Facebook and Text Messaging to Deliver a Weight Loss Program to College Students

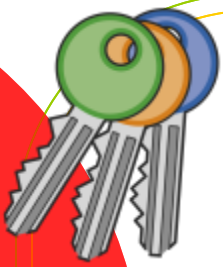
Melissa A. Napolitano<sup>1,2,3</sup>, Sharon Hayes<sup>1,3</sup>, Gary G. Bennett<sup>4</sup>, Allison K. Ives<sup>1</sup> and Gary D. Foster<sup>2,3,5</sup>

**Objective:** Between 31 and 35% of the college-aged population is overweight or obese, yet few weight loss trials for this population have been conducted. This study examined the feasibility, acceptability, and initial efficacy of a technology-based 8-week weight loss intervention among college students.

**Design and Methods:** Students ( $N = 52$ ) were randomly assigned to one of the three arms: Facebook ( $n = 17$ ); Facebook Plus text messaging and personalized feedback ( $n = 18$ ); Waiting List control ( $n = 17$ ), with assessments at 4 weeks and 8 weeks (post-treatment). Participants were  $20.47 \pm 2.19$  years old,  $86.45 \pm 17.11$  kg, with a body mass index of  $31.36 \pm 5.3$  kg/m<sup>2</sup>. Participants were primarily female (86.5%), and the sample was racially diverse (57.7% Caucasian, 30.8% African American, 5.8% Hispanic, and 5.7% other races).

**Results:** The primary outcome was weight loss after 8 weeks (post-treatment); 96.0% of the participants completed this assessment. At 8 weeks, the Facebook Plus group had significantly greater weight loss ( $-2.4 \pm 2.5$  kg) than the Facebook ( $-0.63 \pm 2.4$  kg) and Waiting List ( $-0.24 \pm 2.6$  kg) (both  $P$ s  $< 0.05$ ). Weight change at 8 weeks was not significantly different between the Facebook and Waiting List groups.

**Conclusions:** Results show preliminary efficacy and acceptability of the two active intervention arms (97.0% found the program helpful, 81.3% found the videos/handouts helpful, and 100% would recommend the program to others). Results indicate the potential for an innovative weight loss intervention that uses technology platforms (Facebook and text messaging) that are frequently used and already integrated into the cultural life of college students.



## Key Point: Design

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- Know audience
  - Health risk
  - Previous studies
  - Technology preferences

# Weight and risk periods

Young adulthood is a public health risk period for obesity:

- 1/3 of college-aged students are overweight or obese<sup>1, 2</sup>
- More 50% of young adults aged 20-39 are overweight or obese<sup>2</sup>

1. Lowry R, Galuska DA, Fulton JE, Wechsler H, Kann L, Collins JL. Physical activity, food choice, and weight management goals and practices among US college students. *American Journal of Preventive Medicine*. 2000;18(1):18-.

2. Ogden CL, Carroll MD, Curtin LR, McDowell MA, Tabak CJ, Flegal KM: Prevalence of overweight and obesity in the United States, 1999–2004. *JAMA*. 2006, 295 (13): 1549-55. 10.1001/jama.295.13.1549.

# Social media and texting

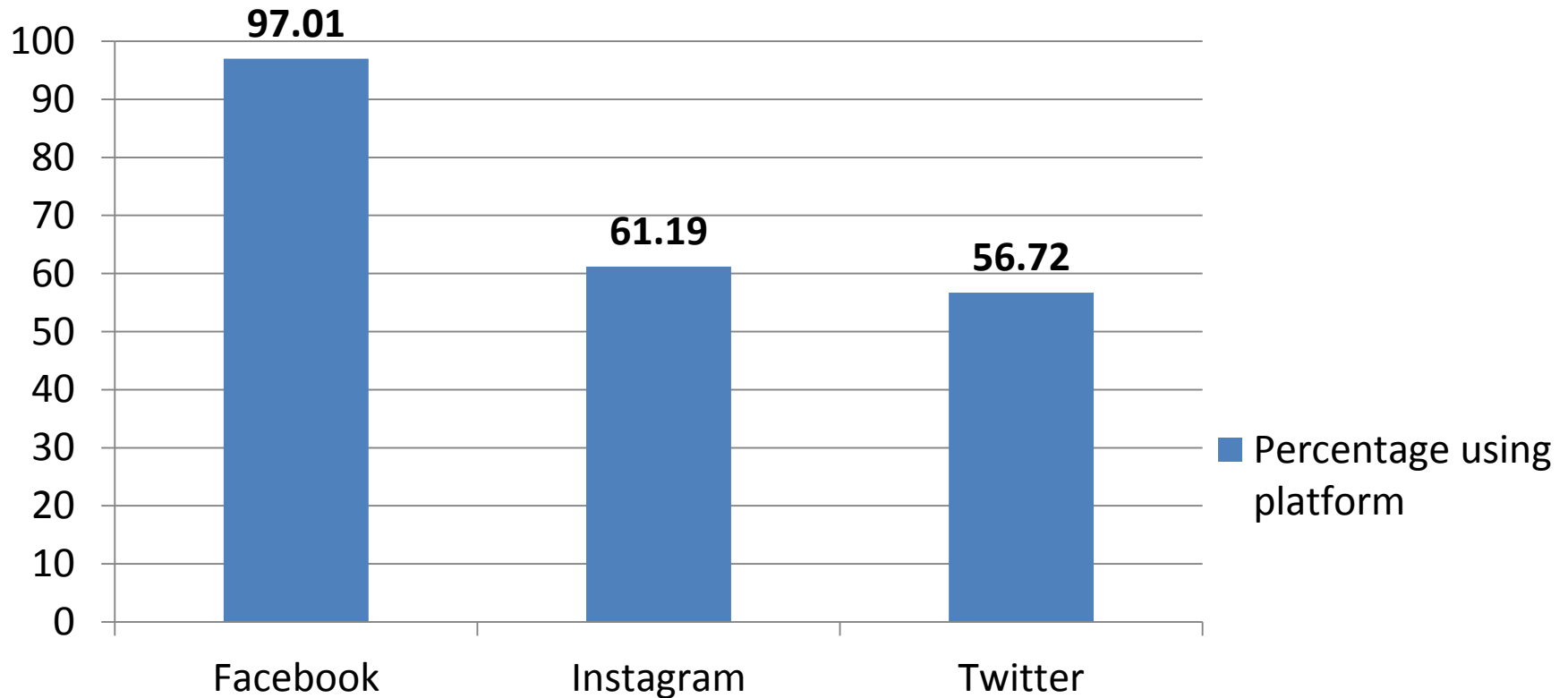
- Cell phone 94% of 18-29 yo report having a cell phone<sup>3</sup>
- 93% of young adults text message<sup>3</sup>
- Facebook 
  - Remains the most popular social networking site<sup>3</sup>
  - Penetration rates > 99%<sup>4</sup>



3. Pew Internet (2016). <http://www.pewinternet.org/2015/08/19/mobile-messaging-and-social-media-2015/>

4. Aleman AM, Wartman KL. *Online Social Networking on Campus: Understanding what matters in student culture*. New York: Taylor & Francis; 2009

# Social Media Use: Undergraduate Students



Summer 2014

## Study Design

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- Enrolled and randomly assigned 52 students (age range 18-29) into:
  - Facebook Content Only (n=17)
  - Facebook Content Plus text messaging and personalized feedback (n=18)
  - Waiting List Control (n=17)
- Follow-up at 8 weeks (post-treatment).



# Facebook Group Polls



facebook

Search

Home Profile Find friends Account

Allie OWls  
Edit My Profile

Welcome  
News Feed  
Messages  
Events  
Friends

Healthy OWls  
Create Group...  
See All

Poll  
Apps  
More

You are currently offline. To chat with your friends, go online.

Healthy OWls  
Secret Group


Edit Group Edit Settings

Share: Post Link Photo Video Event Doc

Write something...

Allie OWls  
Hi all! Week 8 reports are out, check your inbox if you need the link. Good luck on your finals :)  
about 2 months ago · Like · Comment · Unsubscribe


Allie OWls  
We hope these videos have been helpful and entertaining! Watch these last ones for help on keeping up your weight loss goals, and maintaining your motivation for a total lifestyle change!



about 2 months ago · Like · Comment · Unsubscribe

Allie OWls  
Poll results are out for week seven ....  
If you are going out to eat, what is the best way you should have your food prepared?  
The answer is ..... Grilled  
Thanks to those who participated :)  
about 2 months ago · Like · Comment · Unsubscribe

Allie OWls  
Welcome to week 8 :) Great job on all your hard work so far, you are almost a graduate of healthyowls! For tips on staying on track and continuing to make healthier choices check out week 8's materials at [http://coretemple.org/week\\_8.html](http://coretemple.org/week_8.html)



Healthy OWls  
coretemple.org

about 2 months ago · Like · Comment · Unsubscribe

Members (7) See All

Go Online to Chat  
Add Friends to Group  
Leave Group

Docs (8) See All

- Healthy Baked Z's Recipe  
Created about 2 months ago
- A problem with submitting comments  
Created about 2 months ago
- A problem with submitting comments  
Created about 2 months ago

# Content





Welcome to  
Healthy  Owls



[Home](#)  
[Week 1](#)  
[Week 2](#)  
[Week 3](#)  
[Week 4](#)  
[Week 5](#)  
[Week 6](#)  
[Week 7](#)  
[Week 8](#)  
[Contact us](#)

[View all Handouts](#)

Week 3

Internal vs. External Hunger and Triggers

1. [Differences Between Internal and External Hunger](#)
2. [Healthy Eating Habits](#)
3. [Mindful Eating](#)
4. [Portion Control](#)

Eating Habits

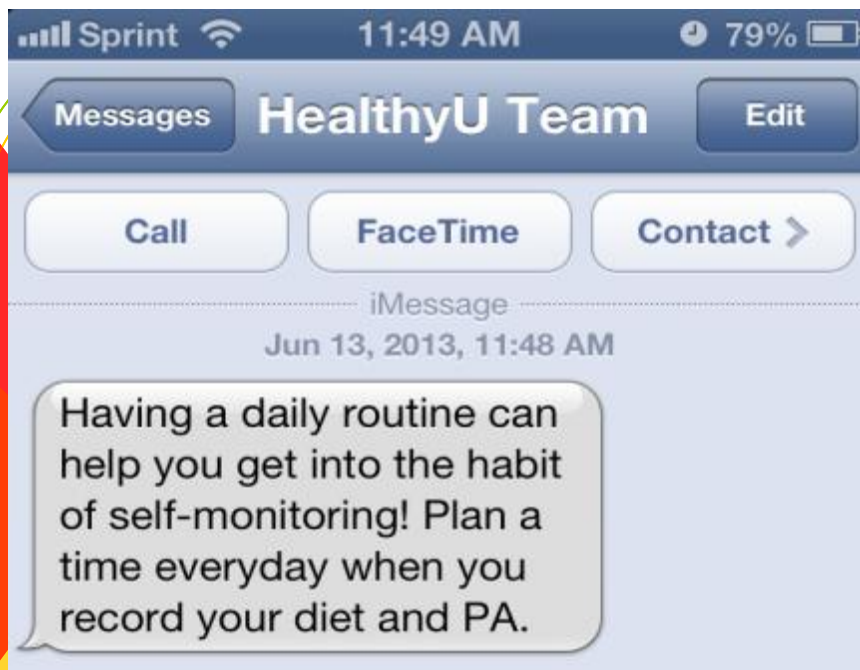
Eating on the Go!

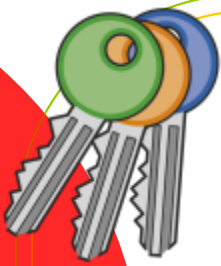


Created by Kenneth Huang



## Texts





## Key Points: Design



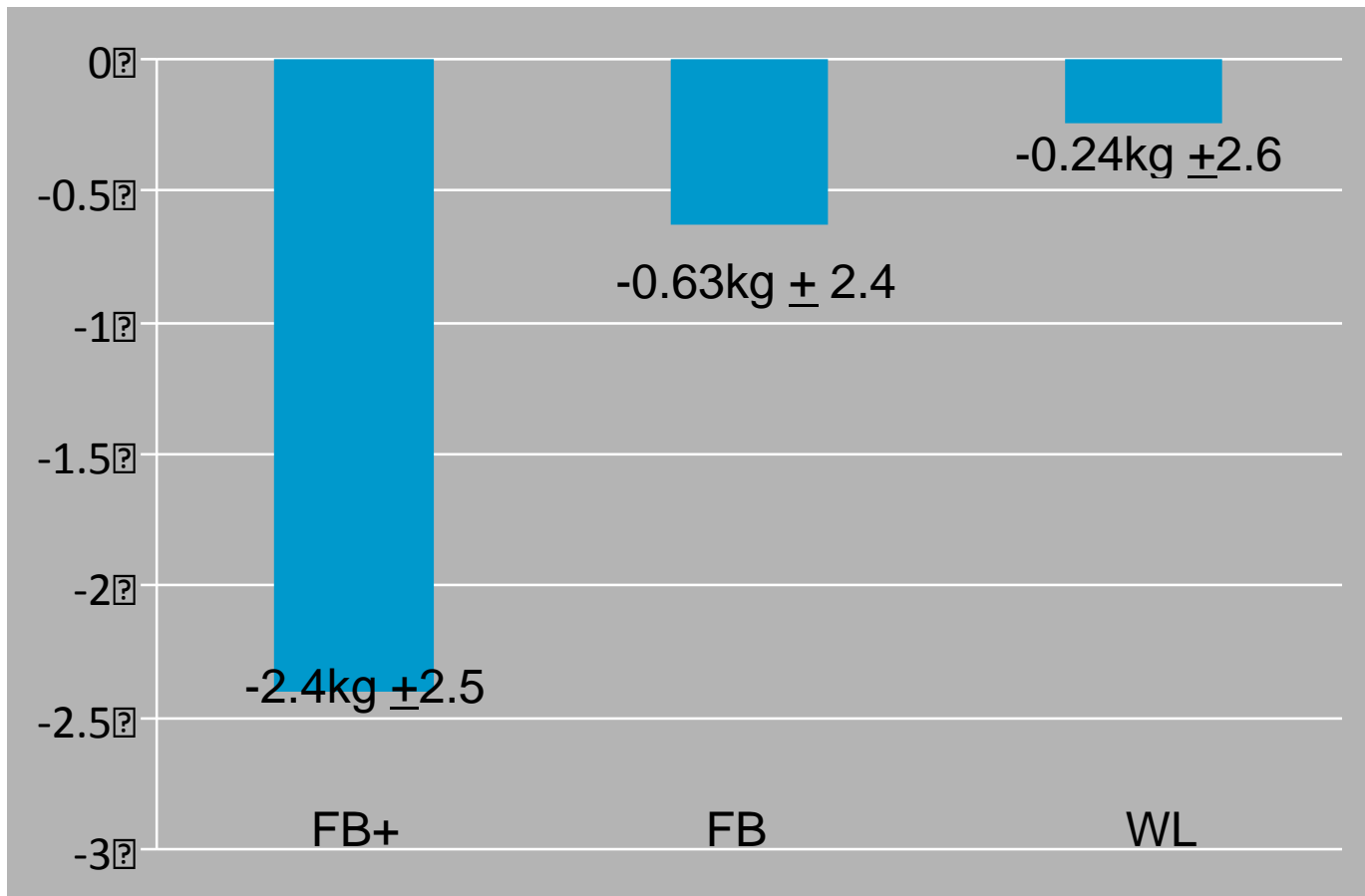
- Mirror face-to-face group by enrolling into online group community (Pros/Cons)
- Condense and adapt evidence-based content in form of videos and handouts
- Address: support, structure, self-monitoring/feedback
- Automate delivery for consistency and staff efficiency



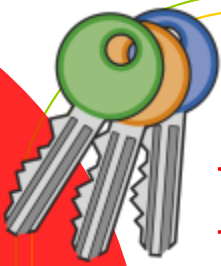
# Results

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# 8 Week Weight Loss



$F(3, 46) = 2.81; p < .05$ ; FB+ vs. FB  $p < .05$ ; FB+ vs. WL  $p < .05$



## Key Points: Evaluation metrics

- Pilot: assess primary outcome in gold standard manner
- Anticipate future analyses to understand results (e.g., FB likes, comments)

# Facebook engagement

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	Facebook	Facebook Plus
“Like” study-related posts	23.5%	22.2%
Post or comment on the study related-content at least once	41.2%	77.8%
Respond to our event invitations	88.2%	72.2%





## Take Home Messages

- Be creative in translating didactic information from in-person to online delivery
- Integrate programming into platforms already accessed and used by target population
- Unknowns: amount and frequency of texts, duration



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*Translation of a social media  
obesity treatment into two  
college campus communities*

R01 DK100916

Investigators: DiPietro, Hayman, Simmens,  
Whiteley (site PI)

## Purpose

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- Larger, two site R01 trial (n=450) building upon initial pilot
- Design changes: 18 month duration, 6 months of weekly contact similar to evidence-based programs
- Examine metabolic risk factors
- Future Implementation Metrics: Sustainability and Cost

# Treatment Groups

**facebook**

**Green**

- Through Georgie's **Green** group, you will receive weight loss materials (print and video) via Facebook during the course of an 18-month program.
- The topics will include ones about behavioral and lifestyle changes related to weight loss (e.g. nutrition, exercise, social support, and self-monitoring).
- If you are in the **Green** program, you also will receive information about setting calorie and exercise goals.
- You will receive daily text messages, reports summarizing the information for the week and reminders to check out George's latest postings on Facebook.
- You will also be encouraged to think about the new skills and how you can incorporate these new ideas into your daily life.

**facebook**

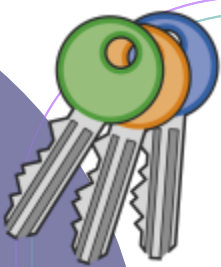


**Purple**

- In Georgie's **Purple** group, you will get everything described above for the **Green** group, but the text messages and weekly Facebook reports will be more personalized to help you keep track of your diet, physical activity, and weight. You will also be encouraged to think about the new skills and how you can incorporate these new ideas into your daily life.

**Blue**

- In Georgie's **Blue** group, you will receive a program focusing on the Three Pillars of Health -with the three pillars being healthy: mind, energy, body attitude.
- The topics will include: stress management, the importance of sleep, and the importance of having a positive body attitude... among others!
- All of these things can provide you with information in order to have a healthy body weight during your college years.
- Similar to the **Green** and **Purple** programs, you will receive daily texts, reports summarizing the weekly content, and reminders to check out Georgie's latest postings on Facebook.
- You will also be encouraged to think about the new skills and how you can incorporate these new ideas into your daily life, including how to track certain healthy behaviors.



# Key Points: Content

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- Plan ahead
- Automation helps in long term sustainability, prepopulating content and uploading can be time consuming
  - For example, we have entered 2836 texts, and edited 228 videos
- Use existing software/platforms
  - Cost, efficiency

# Sample texts from 2836

< Messages HBHU Details

Fri, Mar 18, 8:59 AM

Morning! Please remember to self monitor today- we will ask for ur results tonight :)

Fri, Mar 18, 8:59 PM

Please text today's: [weight], [calories],[PA]. Separate with commas (ex: 168,1500,50). Use NA if u did not monitor!

130, 2000, 25

Thank u for sending ur info! Try to keep responding for the rest of the week :)

Verizon 5:23 PM 63%

< Messages HBHU Details

Tue, Dec 22, 7:59 PM

Learn how to use Social Support to ur advantage this week! Check out FB for the new handouts & video :)

Verizon 5:22 PM 63%

< Messages HBHU Details

Thu, Mar 17, 8:59 AM

Don't stock ur fridge with sugar-sweetened drinks. Instead, keep a jug or bottles of cold water!

Thu, Mar 17, 10:59 AM



**Georgie Beacon**

September 15, 2015 · hbhu.net

When you feel stressed do you notice you sometimes feel more tired, and then that makes you feel more stressed? This week we'll talk about "Sleep & Stress" and give you information on the sleep-stress cycle. If you need us, you know where to find us - on Facebook chat 10am-noon Thursdays, or just send us a message. Wishing you a well-rested and stress-free week!

To access the video, use password: b

Handout 1: <http://bit.ly/1L6SAnh>

Handout 2: <http://bit.ly/1Q7fNW2>

4Me: <http://bit.ly/1i4oaX2>

Three Pillar Check-Out: <http://bit.ly/1VS2CMg>



<https://vimeo.com/121266485>

# Sample FB Content Posts



**Georgie Beacon**

March 1 at 8:00pm · hbhu.net

You've almost completed 11 months of HBHU! Remember talking about how beverages are a big source of hidden calories? This week's topic, "Liquid Calories" will go over recognizing the number of calories in common drinks and tips on alternative options. Take a look at the handouts and videos! To access the video, use the password: p

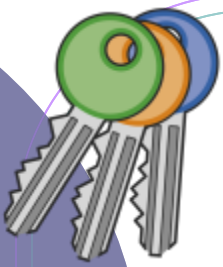
Handout 1: <http://bit.ly/1UViRHd> | Handout 2: <http://bit.ly/1RqtC65>

Handout 3: <http://bit.ly/1n1586q> | 4Me: <http://bit.ly/1NbOUwC>

ABC'S: <http://bit.ly/1J7hrZw>

We're around on Thursdays from 10:00AM-12:00PM if you need anything. Feel free to message us and we'll get back to you as soon as we can, or post your thoughts and comments to the group!





# Key Points: Implementation

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- Know limitation of your platform (FB)
  - Update privacy settings
- Be clear in expectations (FAQs)
- Ensure engagement early



Welcome to the Healthy Body Healthy U Program! We are excited to get to know you over the next 18 months! We'll be texting you to give you some tips and to find out how you're doing with your goals. We'll use this information to give you feedback each week so you can track your progress. But remember, you have to text us back!

1. I just got a text from a number I don't know. What is the study number again?

202-999-3285

2. I received my first text and I need to send a response, what should I do next?

It's very easy – just follow these examples below!

- a. One reply message you will need to send us is your physical activity (PA), weight, and calories results from that day. On these days, please respond in this format:

Weight, Calories, PA

Example: If your weight was 185 lbs, you ate 1550 calories, and you exercised for 30 minutes that day, your reply message should look exactly like this (make sure you include the commas!):

185,1550,30

- b. Another reply message you will need to send us is also about your self-monitoring, but this time we will ask you a question and provide the required response format.

Example: Our message to you will be something like "Did u self-monitor today? Text back using the following letters separated w/ commas: W (Weight), C (Calories), P (PA). Ex: W,C,P".

You should reply with **only the letters for what you monitored**. For example, if you only tracked your weight, you would simply text: **W**. Similarly, if you monitored your weight and physical activity, but forgot to monitor your calories, then you reply with: **W,P**



Search for people, places and things

## Facebook Group Privacy Settings

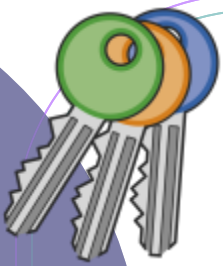
**Important: Please keep in mind that Facebook periodically updates their settings, including their group settings. While the study team will work to keep this document updated, make sure to check and read any emails regarding privacy settings from Facebook.**

To access group settings within Facebook:

1. Find the name of the appropriate HBHU group you are in, located on the left side of the screen.



2. Click on "Notifications" on the right hand side and a drop-down menu will appear.
3. Select "All Posts", which will ensure that you receive notifications for all posts regarding weekly content and comments from other members.



# Key Points: Recruitment

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- Availability and ubiquity of wearables, online trackers, other digital communities.
  - Need to distinguish program
- Messaging to reach target population...simplify
- Build in adaptability

# Flyers



**LOOKING FOR A WAY TO  
STAY HEALTHY IN COLLEGE?**

**Are you:**

- ✓ Between 18 and 26 years old?
- ✓ Enrolled as an undergraduate student at GW?
- ✓ Between 10 - 75 pounds overweight\*?
- ✓ Willing to come for 5 checkpoints visits over the next 18 months?

\*As determined by your BMI



Scan to access the  
online  
screening  
questionnaire!

Or visit our website!



**Contact Us:**  
**HBHU@gwu.edu**  
**202-994-4353**  
**go.gwu.edu/HBHU**

**If eligible, you could:**

- Earn up to \$150 over 18 months
- Receive healthy body weight information via Facebook and text messaging



**A healthier lifestyle starts with**



**and the Healthy Body Healthy U research project!**

Healthy Body Healthy U, or HBHU for short, is a healthy lifestyle research study that is done on your time – that means HBHU works with your busy schedule to help you attain a healthier lifestyle.

You may be eligible to participate if you are:

- Between 10 – 100lbs overweight
- 18 to 29 years old
- A busy college student looking to lose weight in a healthy way
- Planning to be in the Boston area for the next 18 months
- Able to attend 5 in-person visits at UMass Boston

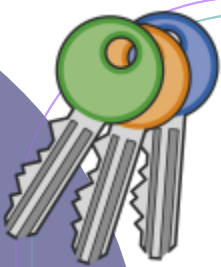
**You may earn up to \$150!**

**Interested?**

Give us a call: 617-287-7498

Shoot us an email:

Check out our website: [umb.edu/hbhu](http://umb.edu/hbhu)



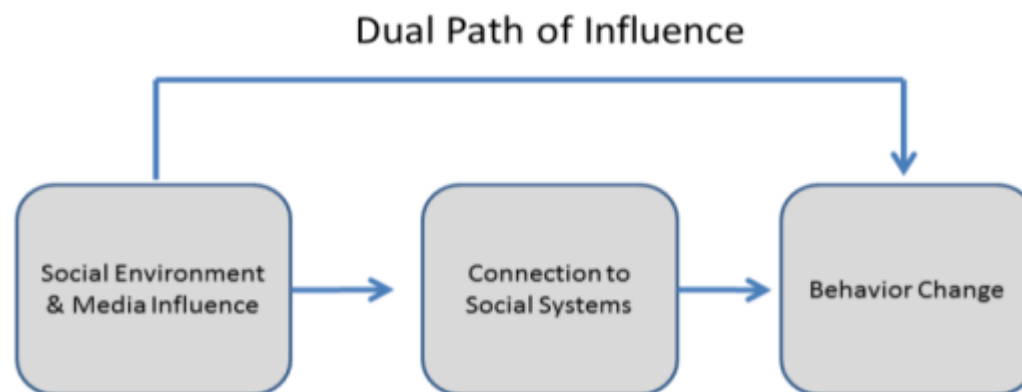
# Key Points: Evaluation and Dissemination

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- Match measurement to platform and rationale
- Think about dissemination as part of the aims.
  - Key leaders: Understand facilitators and barriers
  - Cost analyses

# Theoretical Model and Measures



- Sample measurement tools
  - Weight Management Social Support
  - Social media/texting engagement
  - Social network
  - Role modeling for weight and PA behaviors



## Final take home messages

- Keep type of response required simple
- Online community and support can variable by cohort
- Automation and currently available software can help streamline...but plan ahead
- Diversity digital components: some might prefer one digital strategy vs. another



# Questions?



n/