Get Social: Leveraging Online Social Networks as Part of Nutrition Interventions

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Overview

- Online social networks used for two remotely-delivered 6-month nutrition weight loss interventions:

  PodStudy

  HER Health

- How can we enhance online social support?
Social Support and Weight Loss

- Chat rooms and discussion forums have been used in prior internet-based weight loss studies.

- Utilization of these features on weight loss websites, however, is often low and receives low ratings of satisfaction from participants.

Mobile Pounds Off Digitally Study (mPOD): Groups

<table>
<thead>
<tr>
<th>Podcast only (n=49)</th>
<th>Podcast + mobile (n=47)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twice weekly podcasts for 0-6 months</td>
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</tr>
<tr>
<td>Monitoring of diet and physical activity using app on mobile device</td>
<td>Group and moderator support via Twitter</td>
</tr>
</tbody>
</table>

Baseline demographics

- 75% white; 20% black
- 75% women
- Mean age 43.1 (± 11.7) years
mPOD Results

P=.88 for time by group interaction

30 minutes of podcasts/week

10 minutes of podcasts/week

J Med Internet Res. 2011;13(4):e120.
Pod
@PODStudy Thanks!!

PODStudy
Saw the lion king tonight!! Just as good as I remembered it!! Ate dinner out but it was low in cals!!

PODStudy
@Pod congrats!!!

edmo
Spent last week in writing workshop. Thought I compensated for the high cal food, apparently not enough. Glad to be back in control.

edmo
@Pod You are such an inspiration!!

Pod
Just had to buy new pants again - 34 waist now and medium shirts! One year ago I was wearing size 48 waist!

podstudy
Looks like some good recipes Brie! Thanks for passing along

Brie_PODStudy
Brie McGrivery

ld_pod
Have a cold which demotivates me to exercise. Trying to be better about recording foods and tweeting.

http://twitter.com/
Mean total posts per participant

* Significantly different from 0-3 months; P<0.01
Twitter and Social Support

- Posts to Twitter were coded for type of support:
  - Informational
  - Tangible assistance
  - Esteem support
  - Network support
  - Emotional support

- Posts to Twitter were coded by 3 raters for type of social support.

# Informational Support

<table>
<thead>
<tr>
<th>Support subtype code</th>
<th>Subtype name</th>
<th>Total Posts 0-6 months</th>
<th>% of Total Posts (75.4%)</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>Suggestion /advice</td>
<td>262</td>
<td>10.0%</td>
<td>@PODStudy12 Got an insulated lunch bag? Sure helps w/ healthy eating at work. Good lunch bags avail. at kitchen store at the mall.</td>
</tr>
<tr>
<td>1B</td>
<td>Referral</td>
<td>82</td>
<td>3.1%</td>
<td>@pod_32 if you scroll to bottom of daily food diary page, click RDI field, then you can calculate your recommended daily goal</td>
</tr>
<tr>
<td>1C</td>
<td>Situation appraisal</td>
<td>5</td>
<td>0.2%</td>
<td>About healthy snacks, usually baby carrots or raw almonds no salt, the stone wheat crackers from Trader Joe’s also satisfy crunchy need</td>
</tr>
<tr>
<td>1D</td>
<td>Teaching</td>
<td>1632</td>
<td>62.1%</td>
<td>Buyer beware: I compared reduced fat &amp; full fat feta (same brand) &amp; the red fat had more cals! I got the fat free. I do love a greek salad.</td>
</tr>
</tbody>
</table>
Support type

10% Emotional: @JanePod Don’t feel bad, tomorrow is another day. Eat healthy and make sure to get some exercise!

0.5% Esteem: @podmember sounds delicious! I just bought some vegan chik tenders from Bjs. Haven't tried them yet, but the picture looks good!! :)

7.4% Request: Guys! Help I fell off the wagon! Too much free food! Bakalava and beer... :( I feel bad.

75% Informational (mainly status updates): I’m at the gym, ready to work out!

Informational
Tangible Assistance
Esteem
Network
Emotional
Request for support
Types of social support exchanges over time

- All categories of social support decreased over time or remained the same except two:
  - Posts categorized under the **Compliment** sub-type of Esteem support increased from 44 posts (3% of total posts) at 0-3 months to 78 posts (7% of total posts) during months 3-6.
  - Posts categorized as the sub-type of **Listening** under Emotional support increased from 70 (5% of total posts during 0-3 months) to 103 (9% of total posts during 3-6 months).
Twitter engagement and weight loss

- Adjusting for demographics, posts to Twitter significantly predicted % weight loss at 6 months ($B = -0.48$, $t(46) = -4.9$, $p < 0.001$).
Engagement

- What predicted use of Twitter over the 6-month study?
  - No
    - Race
    - Gender
    - Baseline Twitter user
  - Yes
    - Initial reported weight loss on the weekly surveys ($B = -18.9, t(31) = -2.9, p < 0.01$).

- So does engagement lead to weight loss or does weight loss lead to engagement?
HER Health: Healthy Eating for Reproductive Health

- Remotely delivered 6-month weight loss intervention comparing low-glycemic index vegan diet to a low calorie dietary approach for women with Polycystic Ovary Syndrome who are trying to conceive:
  - Tailored e-mails (on weight loss and dietary behaviors)
  - Weekly lessons
  - Optional: Facebook group
    - Counselors post 1 message per day (recipes, diet information, etc.)

- n=18
  - 40% African-American
  - Mean BMI of 40.7±6.2 kg/m²
  - Age 27.8 (22-35) years
HER Health: Facebook usage

- 13 signed up for FB, 5 did not

Facebook interaction per person

<table>
<thead>
<tr>
<th></th>
<th>Posts</th>
<th>Responses</th>
<th>Likes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facebook interaction</td>
<td>0.12</td>
<td>4.6</td>
<td>3.8</td>
</tr>
</tbody>
</table>
Social networking in research

- Know what you’re getting into…
Assumptions during your weight loss trials

In trial

Dropped out
Dietary compliance?
What happened to my participant?

“Some of you have asked to see before and after pictures of my weight loss journey so here they are. I’ve lost about 15 pounds so far.”

From a participant who dropped out before the 3-month weight assessment
Future work in social networks and weight loss

- Recommender systems
Future work in social networks and weight loss

- Multiplayer games/incentives
This mobile/social networking research study will allow us to:

- Monitor interactions in real time.
- Capture objective data on utilization of online social networking features.
- Predict the types of help people need and the best times to provide that help.

See? The app uses the motion sensor to detect when my hand stops trembling, and then tells me it's time for my next coffee.
Stay tuned!
Questions

- Collaborators:
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  - Deborah Billings, PhD  University of South Carolina

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