Mobilising social support: insights from the development of a web and app based intervention.

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Background
Aim

- to develop and test the feasibility of a web, app and text based intervention to promote weight related health behaviour change employing:
  - goal setting
  - monitoring
  - social support via ‘helpers’
Design and Method

Stage 1:
• development and co-design of the intervention. N=40

Stage 2:
• 2 arm RCT to test whether the intervention improves diet, increases physical activity or aids weight loss.
• Intervention = the HelpMeDoIt! intervention
• Control = a leaflet on healthy diet and lifestyle.
• 12 month follow-up.
• N = 120 adults
• Inclusion criteria: aged 18-70 years whose BMI is 30 or over and who are trying to lose weight.
Outcomes

Key outcomes = **feasibility, acceptability, recruitment and retention.**

Stage 1:
• App/website
• Focus groups, interviews and ‘think aloud’ sessions.

Stage 2:
• Physical activity, diet, BMI, weight, waist circumference, health related QoL, social support, self-efficacy, motivation, mental health, smoking and alcohol use.
• Identify key cost drivers
• Participant and helper interviews at 6m and more participant interviews at 12 months
• Social network analysis
Stage 1 – Co-production of the intervention.

- To develop and refine the intervention with users and to explore its implementation and acceptability
- A secondary aim was to develop and test the intervention logic model.
- Developed iteratively over 10 months with a software company and researchers experienced in web-based health behaviour change projects.
- User input was gained via focus groups and user testing
Development Panel

• 10 user representatives to a development panel.
• Recruitment via: posters in large organisations, adverts e.g. Gumtree, frequent tweets and posts to our HMDI Facebook page
• Purposively sampled.
• 4 focus groups and interviews (4) and feedback over email.
• Individuals not selected for the development panel were invited to join the testing group.
• The role of the development panel was to contribute to the concept, design and development of HMDI, as well as testing the different elements and the different versions of the app and website.
Testing Group

- 28 participants tested the app and website.
- Feedback collected at each stage.
- Individual semi-structured interviews conducted.
- Think-aloud interviews.
Results: helper (social support) elements

‘[I like] having other people helping you. No one pats you on your back unless you go around [saying] “I reached my target weight”. (DP04, Female, 34yrs).

- Helpers should receive **notifications** of new goals, goal progress and lapses
- **Frequency** of notifications should be limited to avoid their helper(s) becoming annoyed and disengaged with the app.
- Agreed that in order for their helper to support them they needed to **share** information with them, however, many participants were reluctant to share their actual **weight**.

‘It’s just this thing about the information a helper gets. I mean I don’t mind them to know how many steps I am doing and (...) how much weight loss is it. But just what the loss was rather than [actual weight] (...)’ (DP07, Female, 50yrs).
Helper elements

• guidance on what to do if their friend is struggling
• things **not** to say to their friend
• an online quiz, badges gamification to engage and motivate helpers.
• rewarding the helpers
• example conversations between helpers and their friend

‘When mentoring at my work it’s about trying to be encouraging so maybe some examples of encouraging dialogue’ (TG08, Female, 33yrs).
Goal setting

- SMART
- Editable
- small number of goals
- **sustainable lifestyle change**

“I think the more goals you’ve got the more likely you are going to fail. You should really stick to one or two things until they are done. If you start to put too much you are going to tumble” (DP10, Male, 51yrs).

*I am looking to generally improve my lifestyle (...) drinking water rather than IronBru. Rather than actual 18, 15, 10 stone. The rest of it is no target for me (...) ideally I would like to be sustainable for the rest of my life (DP08, Male, 35yrs).*
Self monitoring

- Graphs
- They understood that monitoring their progress could help them ‘learn to succeed.’

‘... I think the issue is to learn to be successful. You do need to learn to succeed. If you can demonstrate to yourself that you can do it then…’ (DP05, Female, 68yrs).

‘... you are proving to the app like I can do this. Not saying something like ‘I am going to change the world’ but at least like ‘to walk more’, ‘take one bus stop less.’ Yes, more like lifestyle changes (DP08, Male, 51yrs).
Engagement

- Gamification
- daily tips
- daily messages
- instant feedback
- an animated ‘high five’ from participants to their helper(s) to say thank you.

‘I like the badges idea … I do TripAdvisor. If you have so many badges you become a professional adviser (DP04, Female, 34yrs).

‘If the app gives you a reminder [to say thanks to the helper] and if you send them virtual flowers or a hug’ (DP10, Male, 51yrs).
Context, barriers and facilitators

The development panel also provided useful insights into:

- contextual factors that might encourage use - e.g. being able to personalise the time and frequency of notifications to match their work schedule
- barriers to using the app - trouble with the login process; no in-app rewards; app shows adverts or asks for money; lack of engagement by the nominated helper; difficult to use interface; or they find another app that performs better.
- Facilitators - easy to use interface, personalisation, helper engagement
Summary of the Developed Intervention

• A website and app to set behaviour change goals and sign up helpers.
• Helpers prompted to appropriately engage with the person.
• Helpers choose how they provide support (SMS, face to face etc).
• Allow goal updates, monitoring of progress and celebration of goals achieved.
• Information providing on physical activity, healthy eating, top tips for goal setting.
• Motivational interviewing advice for helpers.
A novel approach to losing weight with help from family & friends

A healthier lifestyle in 5 steps

Step 1: Nominating Helpers
Step 2: Setting Up Goals

Info & Tips: Food

Making changes to your eating doesn't have to be daunting. Simply follow these easy steps to make better choices in what you buy and eat.

Arm yourself with the info

Losing 5-10% of your body weight leads to fantastic health benefits such as lower blood pressure and a reduced risk of cardiovascular disease. The best way to achieve this is by:

1. Aiming for a safe weight loss of 1-2lbs per week.
2. Reducing your calorie intake by 500 calories per day. If you find this difficult, include it gradually over the course of a few days to avoid managing your appetite.

Physical Activity

Be In Control

Top 10 Tips

Helpful Links
APP SCREENS FOR GOAL SETTING AND MONITORING

1. **Add A New Goal**
   - Physical Activity
   - Healthy Eating
   - Wellbeing

2. **All Goals**
   - I will go for a 15-minute walk after dinner
     - Complete?
   - I will drink a large glass of water before every meal
     - Complete?
   - I will eat a large portion of veg at dinner
     - Complete?

3. **Today’s Goals**
   - I will go for a 15-minute walk after dinner
     - Complete?

Additional features:
- All Goals
- Today’s Smiles
- Send A Messages
- Progress
- Badges
Reflections …..

• Incredibly helpful process
• Helped identify key design elements, look and feel
• Provided support for some of our thinking and challenged others
• Helped the team ‘see the wood from the trees’
• The ‘think aloud’ enabled us to have insights into e.g. where the navigation wasn’t logical, where more help was needed etc
• The ‘in the wild’ use was really important to help us understand how people would use the app/website
• Importance of a multidisciplinary team = working with the software and design company
Research Team

Lynsay Matthews
Juliana Pugmire
Olga Utkina-MacAskill
Laurence Moore
Mark Kelson
Emma McIntosh
Alex McConnachie
Elinor Coulman
Kathy O’Brien
Simon Murphy
Sarah Morgan-Trimmer
Heuristic Evaluation

- majority of website criteria good or excellent (87%: n=27 of 31 criteria) and the app (63%: n=10 of 16)
- Eight issues needed improvement most minor
- Two issues rated ‘poor’:
- Unclear method for returning to 
  (i) the main navigation menu; and (ii) the main dashboard.
• Developed logic model
• Mapped logic model elements onto the features of the website and app
• Mapping the elements of the logic model and behaviour change techniques against behaviour change theories.
Logic Model

• We used the stage 1 development phase as an opportunity to refine our logic model.
• We used formal development methods, including the 6SQUID approach and the Person-Centred Approach to develop the intervention, logic model and the programme theory.
• This helped to identify needs, targets and processes of change, in addition to possible barriers and facilitators that influence people’s ability to perform the target behaviours.
**Inputs**
- Website and app
- Support from helpers

**Intervention**
- Facilitate and encourage social support
- Provide evidence-based advice for physical activity, healthy eating and wellbeing
- Promote physical activity, healthy eating and wellbeing
- Promote autonomy via autonomy supportive content
- Facilitate and encourage self-monitoring
- Share tips
  - Opportunities for social comparison and learning from peers
- Facilitate and encourage self-monitoring
  - Facilitate encouragement, feedback and reinforcement
  - Boost motivation via motivational messages, animations and rewards
- Provide social support (instrumental and emotional)
  - Share tips
  - Opportunities for social comparison and learning from peers
- Boost self-efficacy via positive feedback
  - Boost motivation via animations and rewards
  - Share tips
- Encourage goal setting, action planning and problem solving
  - Support ongoing goals around physical activity, healthy eating and wellbeing
- Give feedback and reinforcement
  - Encourage self-monitoring
  - Promote autonomy via autonomy supportive content

**Mediators of change**
- Increased social support generally including increased emotional support and increased instrumental support
- Reflect and set ongoing goals
- Increased action planning
- Increased problem solving
- Increased self-monitoring
- Increased skills and knowledge
- Increased self-efficacy
- Increased motivation
- Increased autonomy

**Intermediate outcomes**
- Healthy habit formation
- Improved self-efficacy
- Improved self-image/self-esteem

**Outcomes**
- Weight loss
- Improved health
- Improved quality of life
- Improved mental health
- General improvement in other lifestyle factors

**Contextual factors:**
- Participant/helper availability of smartphone
- Availability of friends to act as nominated helper(s)
- Characteristics of nominated helper(s) e.g., encouraging, engaged with participant’s goals
- Understanding and knowledge of how apps and internet work
- Quality and design of the app/website
- Quality of intervention content
- Ease of use and acceptability of the app/website
- Privacy and security of app/website data
- Other apps are more appealing
- Everyday barriers and facilitators
- Integration with public health policy
- Integration with social networks
## Characteristics of participants

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