

# Bits and Bots

## Co-designing eHealth interventions for adolescent emotional wellbeing

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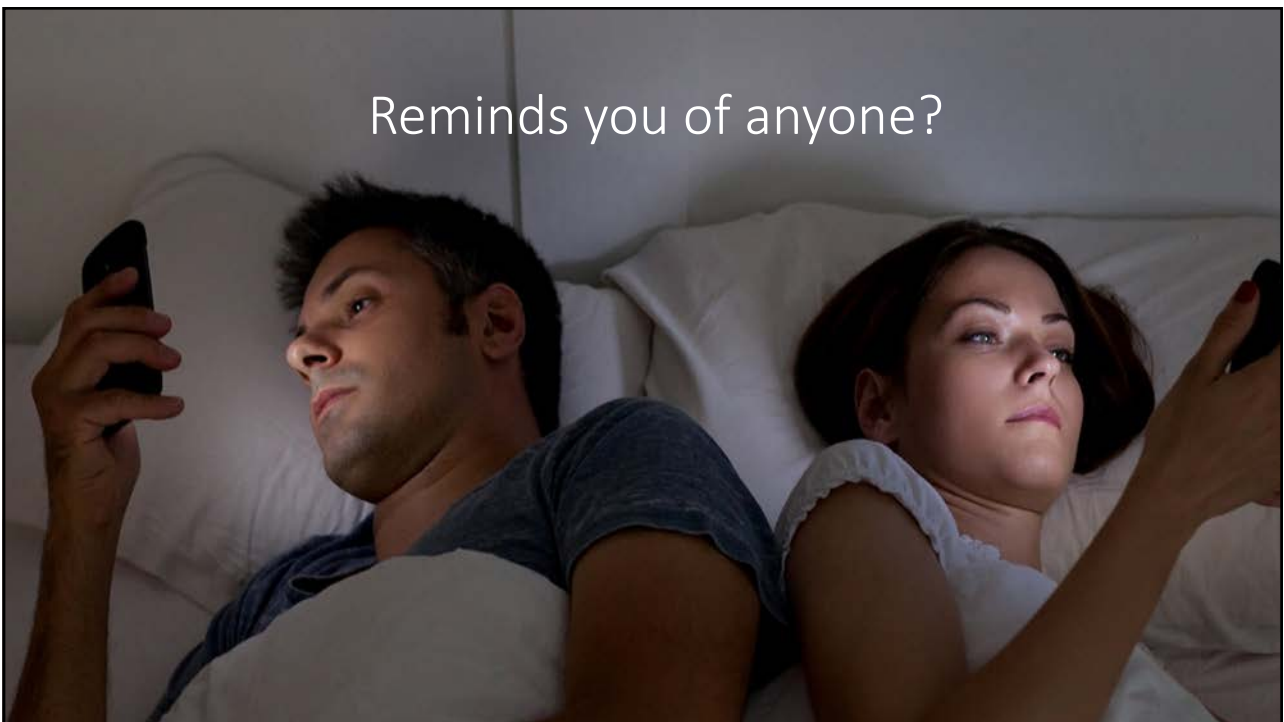
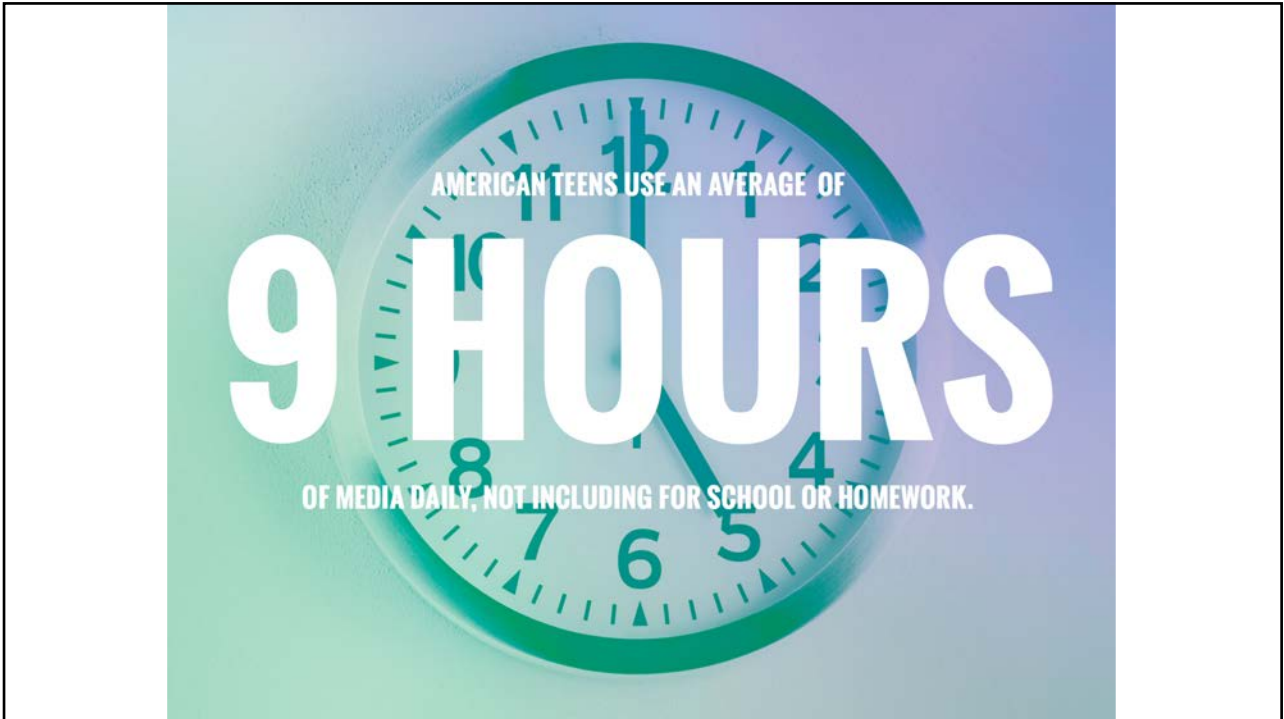


A BETTER  
START

E Tipu e Rea

National  
**SCIENCE**  
Challenges

# Why focus on online/digital approaches?





1/4

experience depression and anxiety

Up to 3/4

never get any help

Psychological  
therapies

should be the **first line of treatment**

Stigma

Privacy

Sensitive topics

Don't know where and how

Talking to a stranger

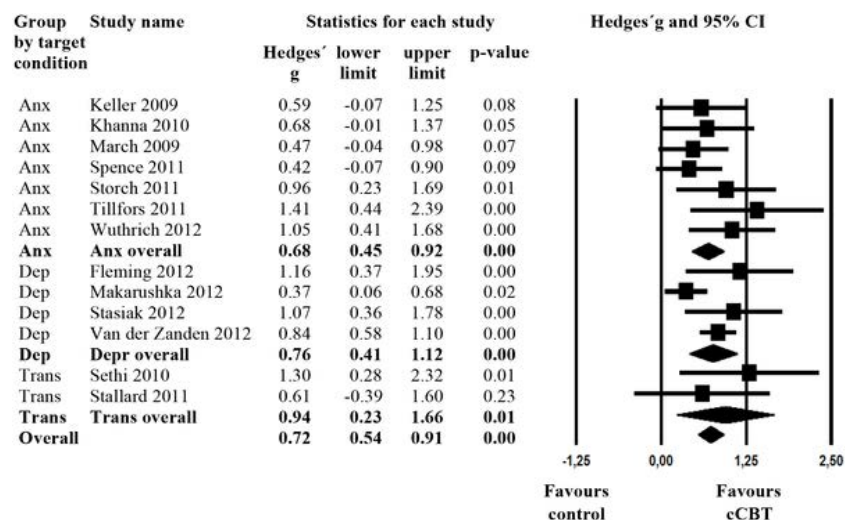
Unevenly distributed resources

The demand

outstrips supply

# Computerised CBT seems effective (over 100 RCTs)

Fig 2. Forest Plot.



Ebert DD, Zarski AC, Christensen H, Stikkelbroek Y, Cuijpers P, et al. (2015) Internet and Computer-Based Cognitive Behavioral Therapy for Anxiety and Depression in Youth: A Meta-Analysis of Randomized Controlled Outcome Trials. PLoS ONE 10(3): e0119895. doi:10.1371/journal.pone.0119895  
<http://dx.doi.org/10.1371/journal.pone.0119895>

## Apps are not the be all....

### Young people need

- **Love**, belonging & identity
- **Purpose** being needed, able to contribute and grow. Both now & future
- **Fun**, excitement and challenge
- **Safety**, protection from harms, internal and external resources when harmed
- **Help** when needed
- Caring staff, positive peer relationships, inclusion
- Learning! Leadership, contribution, participation,
- Safe from bullying & discrimination
- Help in School and beyond





## Review

## Beyond the Trial: Systematic Review of Real-World Uptake and Engagement With Digital Self-Help Interventions for Depression, Low Mood, or Anxiety

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## Abstract

**Background:** Digital self-help interventions (including online or computerized programs and apps) for common mental health issues have been shown to be appealing, engaging, and efficacious in randomized controlled trials. They show potential for improving access to therapy and improving population mental health. However, their use in the real world, ie, as implemented (discontinued) outside of research settings, may differ from that reported in trials, and implementation data are seldom reported.

**Objective:** This study aimed to review peer-reviewed articles reporting user uptake and/or ongoing use, retention, or completion data (hereafter usage data or, for brevity, engagement) from implemented pure self-help (unguided) digital interventions for depression, anxiety, or the enhancement of mood.

**Methods:** We conducted a systematic search of the Scopus, Embase, MEDLINE, and PsycINFO databases for studies reporting user uptake and/or usage data from implemented digital self-help interventions for the treatment or prevention of depression or anxiety, or the enhancement of mood, from 2002 to 2017. Additionally, we screened the reference lists of included articles, citations of these articles, and the titles of articles published in *Internet Interventions*, *Journal of Medical Internet Research* (JMIR), and *JMIR Mental Health* since their inception. We extracted data indicating the number of registrations or downloads and usage of interventions.

**Results:** After the removal of duplicates, 970 papers were identified, of which 10 met the inclusion criteria. Hand searching identified 1 additional article. The included articles reported on 7 publicly available interventions. There was little consistency in the measures reported. The number of registrants or downloads ranged widely, from 8 to over 40,000 per month. From 21% to 88% of users engaged in at least minimal use (eg, used the intervention at least once or completed one module or assessment), whereas 7-42% engaged in moderate use (completing between 40% and 60% of modular fixed-length programs or continuing to use apps after 4 weeks). Indications of completion or sustained use (completion of all modules or the last assessment or continuing to use apps after six weeks or more) varied from 0.5% to 28.6%.

**Conclusions:** Available data suggest that uptake and engagement vary widely among the handful of implemented digital self-help apps and programs that have reported this, and that usage may vary from that reported in trials. Implementation data should be routinely gathered and reported to facilitate improved uptake and engagement, arguably among the major challenges in digital health.

*J Med Internet Res* 2018;20(6):e199 | doi:[10.2196/jmir.9275](https://doi.org/10.2196/jmir.9275)

People don't  
engage well  
with BITS in  
real life

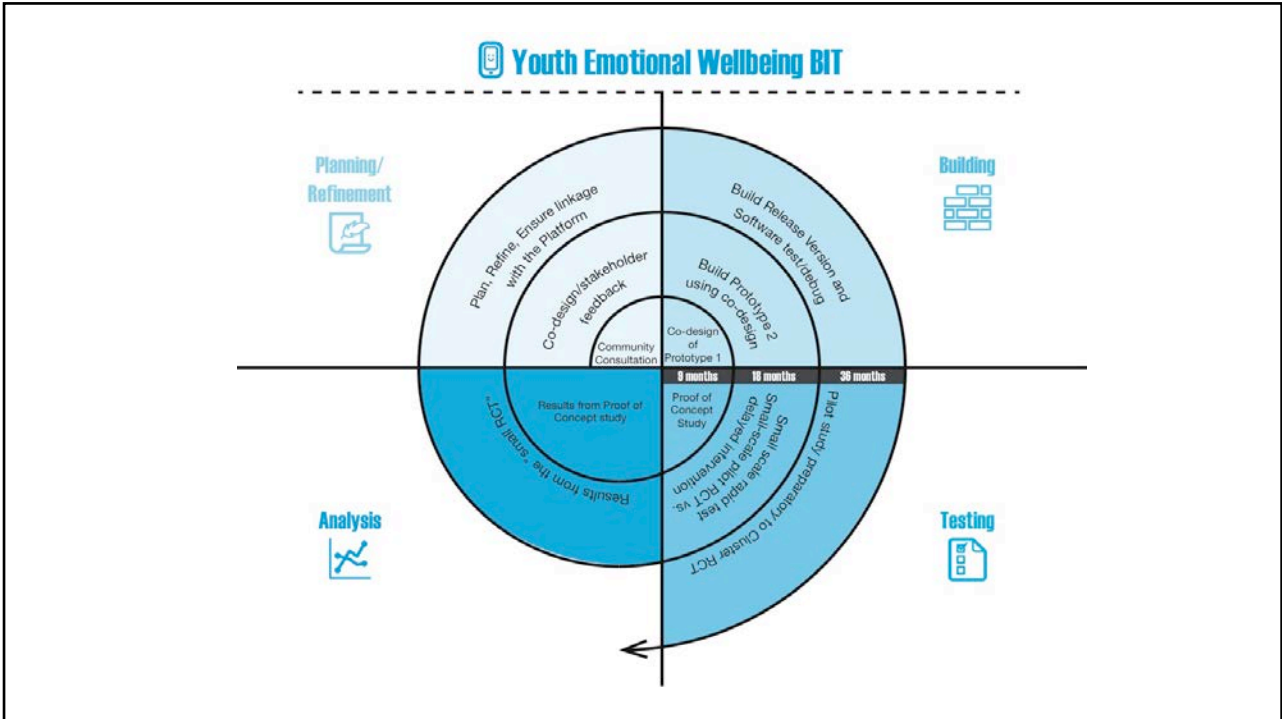
Could  
co-design  
help make  
BITS more  
engaging?



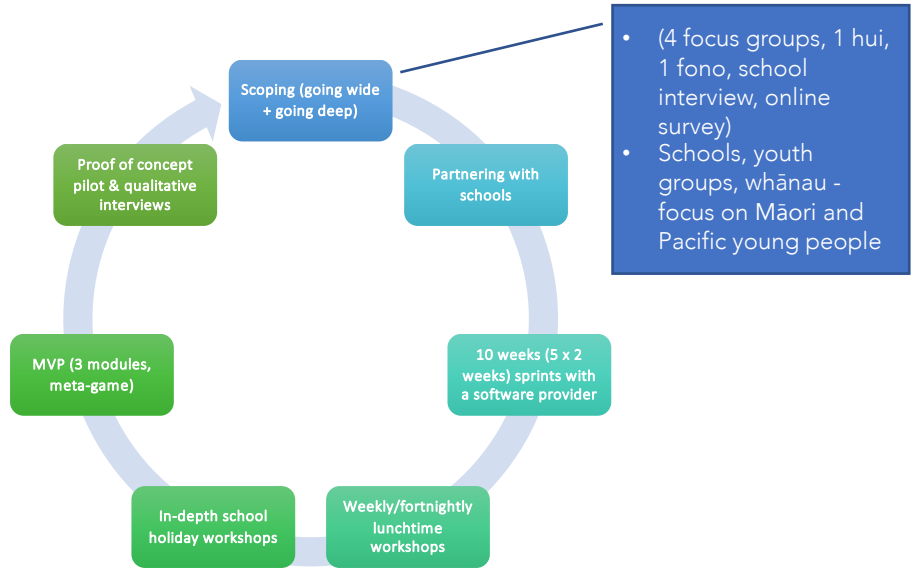


Better Start- E Tipu E Rea - National Science Challenge





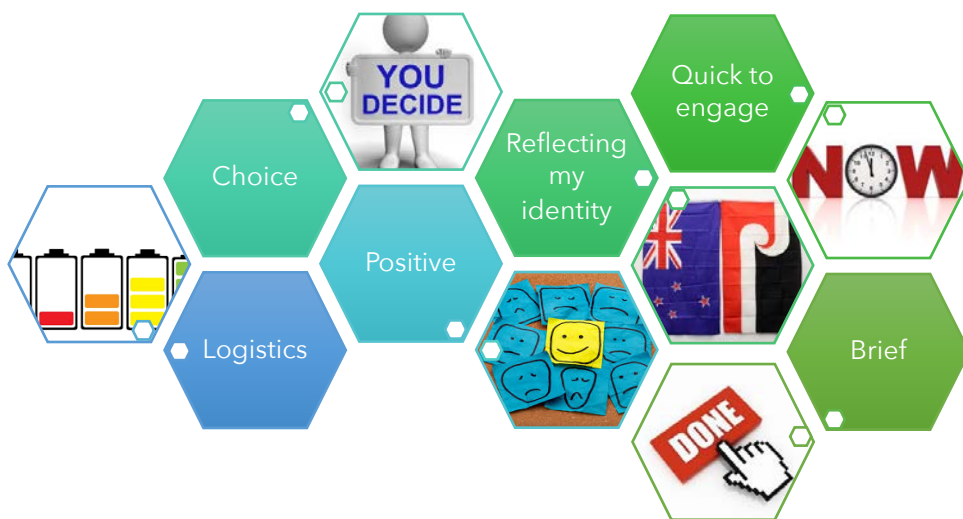
## We scoped, co-designed, sprinted and piloted



## Scoping – Going wide

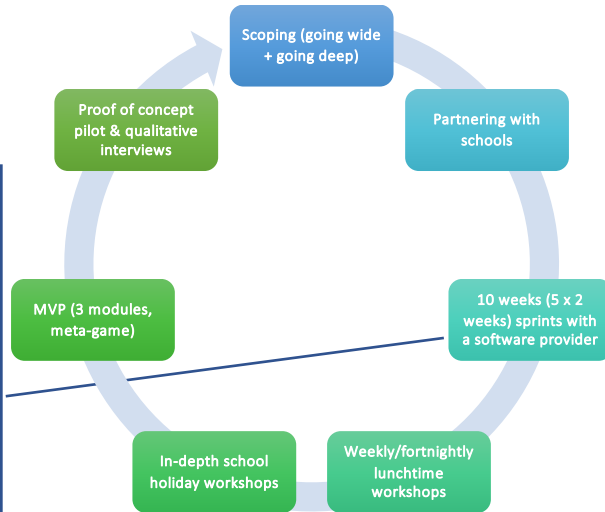


## Young people had a reasonable wish list



# We scoped, co-designed, **sprinted** and piloted

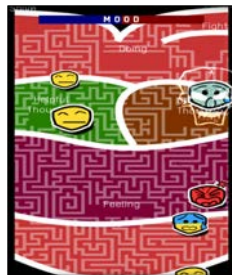
- Sprints – iteration from paper to software
- 15 rapid co-design sessions in two high schools
- 7 in-depth workshops
- Mostly Māori and Pacific youth
- Workshopping of visuals, metaphors, overarching theme + user testing



# We iterated from paper to an MVP



From paper to...



1<sup>st</sup> mock up



2<sup>nd</sup> mock up



Final version



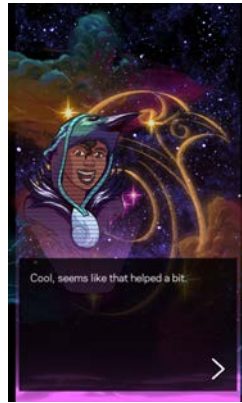




# We created a modular MVP



Remind Me - gratitude journal



Relax Me – mindfulness

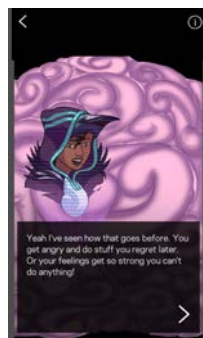


Rewire Me – think-feel-do (mini-game)

# We gamified and 'storyfied' it



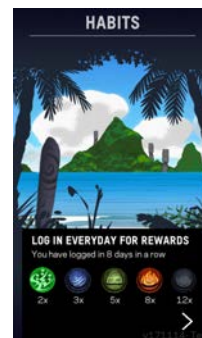
Overarching story  
Daily instalments  
3 weeks of content



Companion character  
Encouragement  
Feedback



Inspirational posters  
Whakatauki



Gamification  
Rewards for daily use  
Badges  
Streaks







### 3) Pilot with high school teens

#### We decided to make changes for Spiral 2

- **Simplify things**
- More modules (but not too many)
- Improve the 'metagame' –more humour, environmental storytelling'
- Keep some gamification (badges, points/\$, sense of levelling up)
- Focus on psychoeducation (rather than daily habit building)
- Ensure better incorporation of Whare Tapa Wha in the overall design
- Target younger adolescents (Year 8/Year 9)
- More customisation and choice (e.g. avatar)
- Android, iOS, Chrome books, tablets

## Spiral 2 app (nearly ready)

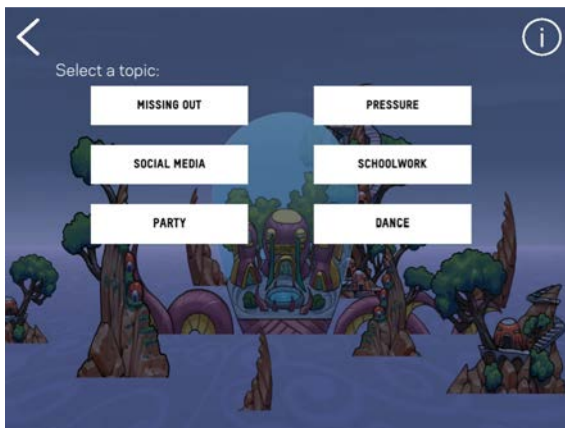
### Draft menu

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- |                  |                                  |   |                                   |                                       |                        |                               |                        |
|------------------|----------------------------------|---|-----------------------------------|---------------------------------------|------------------------|-------------------------------|------------------------|
| Toolbox<br>(Pou) | Interpersonal<br>Skills<br>(Kea) | F-T-D &<br>Cognitive<br>Distortions<br>(Ruru) | Gratitude<br>Diary<br>(Piwaiwaka) | Activity<br>Scheduling<br>(Piwaiwaka) | Relaxation<br>(Tohora) | Problem<br>Solving<br>(Wheke) | Volcano<br>(Black Dog) |
|------------------|----------------------------------|---|-----------------------------------|---------------------------------------|------------------------|-------------------------------|------------------------|

## Wellbeing App: 'The Quest - Te Whitianga'

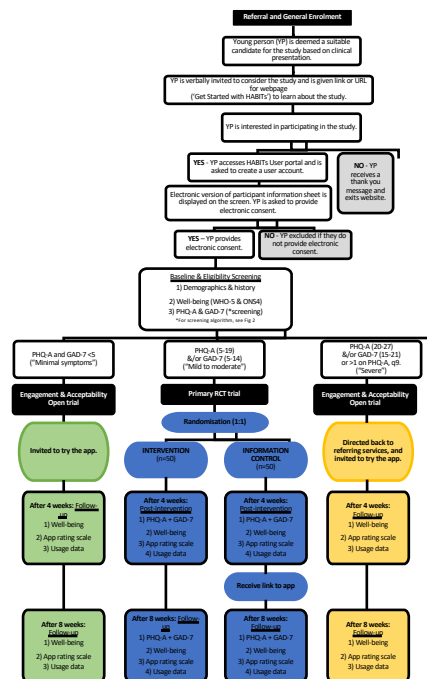


## Next steps

- **"Rapid RCT"** (Jan to June 2019)
- n=100 (50% Maori and Pacifica) adolescents 11-16 year old
- Help seeking or identified as needing extra support
- App vs Attention Control (control get App after 4 weeks)
- Multi-site (schools, youth one stop shops, health organisations)
- Approaching ethics for approval to do a fully ONLINE study (including consent)

Primary RCT designed to assess efficacy in those with mild to moderate symptoms of depression or anxiety at baseline

Parallel open Acceptability and Engagement trial for those without symptoms and those with high scores (who will be referred for extra help)



**Meanwhile....**



**ChatBots**  
the new Apps



## 2<sup>nd</sup> Wellbeing BIT: ChatBot

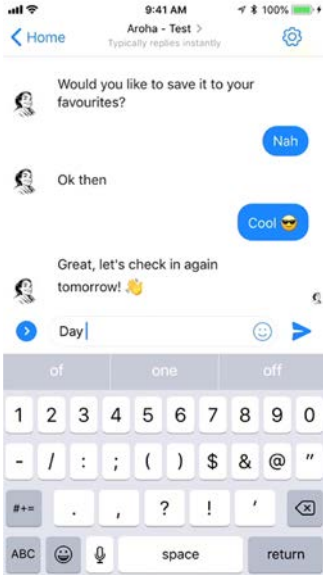
**Headstrong**

Get a personal trainer for your mind.

Available to chat 24/7 on Facebook Messenger to help you have better relationships and lift your mood.



# Headstrong: A sneak peak



Next steps –  
Engagement trial  
early 2019 to test  
'stickiness'



## What we learned along the way

- Co-design is resource & time intensive
- Co-design can give you a 'whip-lash'
- Co-design may NOT give you the best answer
- Young people are a discerning & media savvy audience
- Make some (critical) decisions yourself
- Work closely with a software developer
- Hedge your bets
- Prepare to fail (and if so, do it early)
- Keep iterating
- Keep it simple

Big thank-you to  
our funders and  
partners (schools,  
community  
organisations and  
young people)



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