Guidelines for Developing Healthy Living Apps

AKA: How to build things people don't hate

Hugh Stephens, Dialogue Consulting

With thanks to Annemarie Wright[1], Jane Shill[1], Fiona McKay[2] and Mary Uccellini[3]

[1] VicHealth
[2] Deakin University
[3] Dialogue Consulting

What we aimed to do

- Create an evidence-based method to collect, rate and review "healthy living" apps

- Focussed on VicHealth's 5 priority areas:
  - Healthy eating, physical activity, alcohol harm reduction, smoking cessation, mental wellbeing

- Publish a directory of apps recommended for (public) health uses

What we didn't do

- Look at apps for clinical / treatment / diagnostic purposes
- Have a real-time updated directory listing
- Anything 100% perfect – aim was to improve on existing knowledge (approx zero)
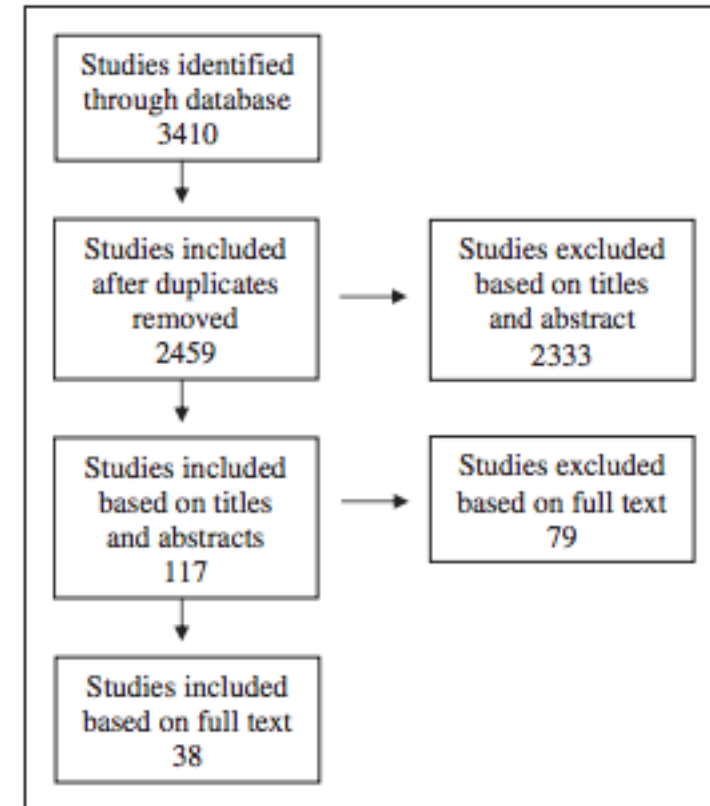
1. Literature

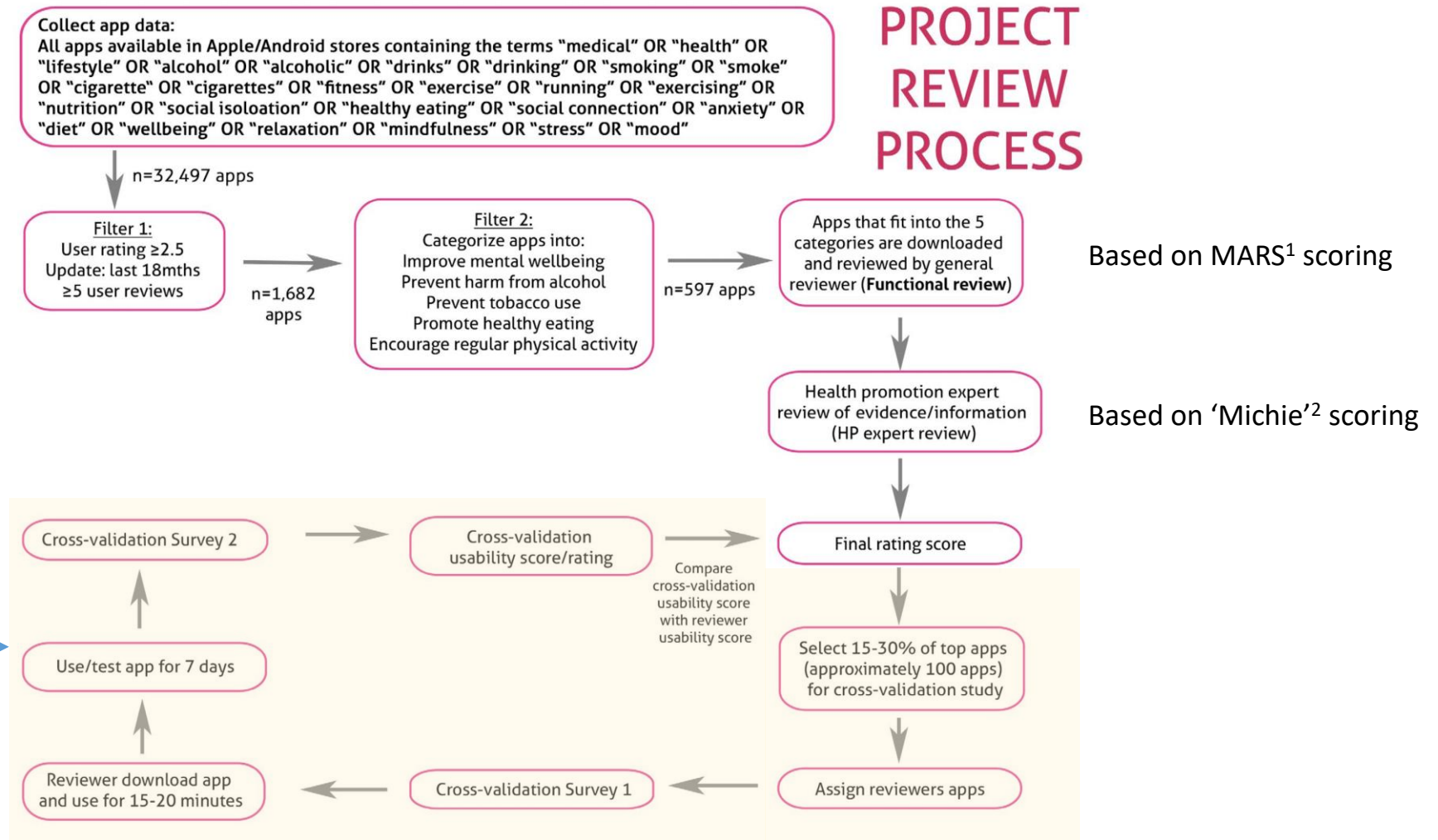## Evaluating mobile phone applications for health behaviour change: A systematic review

Fiona H McKay[1], Christina Cheng[1], Annemarie Wright[2], Jane Shill[2], Hugh Stephens[3] and Mary Uccellini[3]

Studies identified through database: 3410

Studies included after duplicates removed: 2459 → Studies excluded based on titles and abstract: 2333

Studies included based on titles and abstracts: 117 → Studies excluded based on full text: 79

Studies included based on full text: 38

Conclusion: there is no single best practice approach to evaluating mobile health apps

2. Review methodology (2014 data)

PROJECT REVIEW PROCESS

Collect app data:
All apps available in Apple/Android stores containing the terms "medical" OR "health" OR "lifestyle" OR "alcohol" OR "alcoholic" OR "drinks" OR "drinking" OR "smoking" OR "smoke" OR "cigarette" OR "cigarettes" OR "fitness" OR "exercise" OR "running" OR "exercising" OR "nutrition" OR "social isoloation" OR "healthy eating" OR "social connection" OR "anxiety" OR "diet" OR "wellbeing" OR "relaxation" OR "mindfulness" OR "stress" OR "mood"

n=32,497 apps

Filter 1:
User rating ≥2.5
Update: last 18mths
≥5 user reviews

n=1,682 apps

Filter 2:
Categorize apps into:
Improve mental wellbeing
Prevent harm from alcohol
Prevent tobacco use
Promote healthy eating
Encourage regular physical activity

n=597 apps

Apps that fit into the 5 categories are downloaded and reviewed by general reviewer (**Functional review**)

Based on MARS[1] scoring

Health promotion expert review of evidence/information (HP expert review)

Based on 'Michie'[2] scoring

Final rating score

Select 15-30% of top apps (approximately 100 apps) for cross-validation study

Assign reviewers apps

Cross-validation Survey 1

Reviewer download app and use for 15-20 minutes

Use/test app for 7 days

Cross-validation Survey 2

Cross-validation usability score/rating

Compare cross-validation usability score with reviewer usability score

Used in initial 2014/15 review only

[1] Stoyanov SR, Hides L, Kavanagh DJ, et al. Mobile app rating scale: A new tool for assessing the quality of health mobile apps. JMIR Mhealth Uhealth 2015; 3(1): e27–e27.
[2] Abraham C and Michie S. A taxonomy of behavior change techniques used in interventions. Health Psychol 2008; 27(3): 379–387.

3. Collection & review of apps

- 2014: initial corpus 32,497 apps – 2017: 77,617 (!!)
- Data filter for supported (<18mths updated or launched) and not horrible (minimum 2.5 star rating, 5+ reviews)
- Categorised in/out of VicHealth priority areas
- 2014: functional/detailed review of 407 apps (2016: 329 apps)
  - Got better at excluding 'broken' / silly apps
- Health promotion expert review (Michie) conducted on 'promoting' apps but not 'enabling'

4. Results: app types (2016 data)

- 324 Health Promotion Apps + 11 'VIP' Apps (including some promoting and some enabling apps) – eg *Pokémon Go*

- 75 (22%) Healthy Eating Apps
- 266 (79%) Physical Activity Apps
- 7 (2%) Tobacco Cessation Apps
- 5 (1%) Preventing Harm from Alcohol Apps
- 26 (8%) Mental wellbeing apps
- (incl) 41 Cross Category apps

- 150 apps(44%) were rated in both 2014 and 2016 studies
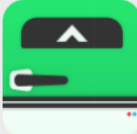
4. Scoring

- Average overall score (MARS+Michie) 2.07, range 0 – 3.76
- Most apps were free (66%, n=218), and 127 (39%) used in app payments (53 one off, 74 subscription based)
- Highest rated paid app was ranked 17th
- Small increase in score between 2014 and 2016 (av +0.14)
- Health promotion expert scoring was typically very low (av 0.88)

5. Example top rated apps

Full directory: https://www.vichealth.vic.gov.au/media-and-resources/vichealth-apps

67 apps available   1 2 3 4 5

Pact: Earn Cash for Exercise, Healthy Living, and Eating Right >
FREE

DietBet - Lose Weight. Make Money. >
FREE

Lose weight with Applause >
FREE

Calorie Counter & Diet Tracker by MyFitnessPal >
FREE

CARROT Hunger - Talking Calorie Counter >
FREE

Record by Under Armour - Exercise Smarter, Feel Better, Live Longer, connects with UA HealthBox >
FREE

5. Example top rated apps

★ ★ ★ ☆ ☆

FREE

Pact: Earn Cash for Exercise, Healthy Living, and Eating Right ›

★ ★ ★ ☆ ☆

FREE

Lose weight with Applause ›

★ ★ ★ ☆ ☆

FREE

FitFox - Exercise rewards, activity tracker, and fitness movement coach ›

★ ★ ★ ☆ ☆

$3.99

Runtastic Squats Workout, Trainer & Counter PRO ›

★ ★ ★ ☆ ☆

FREE

Freeletics Gym ›

★ ★ ⯨ ☆ ☆

FREE

Freeletics Bodyweight - Workouts & Training ›

5. Example top rated apps

3 apps available

$4.49
★★☆☆☆ I Am Sober >

FREE
★★☆☆☆
Australian Drink Scanner &
Alcohol Tracker - Drinkscape >

$1.49
★☆☆☆☆
Alcohol Cutdown Coach >

5. Example top rated apps

7 apps available

Quit Now: My QuitBuddy >
FREE

Quit It - stop smoking today >
$2.99

Kwit - quit smoking for good - smoking cessation app >
FREE

Way of Life - The Ultimate Habit Maker & Breaker >
FREE

Smoke Free - Quit smoking now and stop for good >
FREE

Day Organizer+ Tasks, Reminders & To Do Lists >
FREE

5. Example top rated apps

Extensive 'questionable' apps

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APPLE JUST SAYS YES TO
IPHONE GAME FOR SMOKERS

Read our guidelines

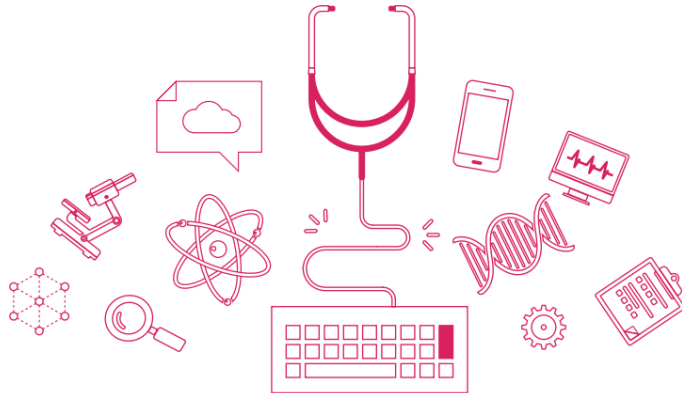Guidelines for creating healthy living apps

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The guide is organised by each stage of the app development process so that you can easily access the most relevant parts.

- **Before you start building your app**
  Identifying what your app will do, who will use it and how.

- **Planning your app**
  Assessing the right team structure, requirements and quality framework for your app.

- **Building and testing your app**
  Selecting the right development and behaviour change frameworks or constructs, and tips for how to create effective healthy living apps.

- **Launching your app**
  Advice on marketing and promoting your app to your target users.

- **Updating your app**
  Information about the importance of keeping your app up-to-date.

The guide also has further resources and references with more information.

So you want to build an app

- ***You probably don't need one***
- Think before code
- Understand some basics of app development
- Distribution and promotion are key to adoption – without, you have an expensive digital paperweight
- It costs money to keep them up to date
- You will not 'go viral'

Questions?

Hugh Stephens
hugh@dialogueconsulting.com.au
0431 304 464