Reducing health inequalities: exploring the potential of social groups and mobile technologies to deliver sustained positive lifestyle change

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Lifestyle and non-communicable disease (NCD)

Non-communicable disease

- In 2008, 36 million deaths globally (63%), were due to NCDs
- Cardiovascular diseases, diabetes, cancers and chronic respiratory diseases account for 80% of NCD-related mortality
- As the population ages, annual NCD deaths are projected to continue to rise worldwide

[WHO Global Status Report on NCDs 2010]
Lifestyle and (ill)-health

- Globally, physical inactivity, obesity and poor diet cause 19% of NCD-related mortality
- In high income countries 25%

Health behaviour change interventions

Aim: to engage and support all people in making SUSTAINED positive changes to their lifestyles
Engagement in lifestyle change

- Behaviour change interventions often have limited reach among people from ‘disadvantaged’ backgrounds (Bernal, Harron-del-Rio-Calt Divers Eth Minority Psychol 2001, 7:129-43)

Public health impact

- Dimensions of advantage/disadvantage:
  - SES
  - Gender
  - Age
  - Ethnicity / Migrant status
  - Physical / Mental health status

Socio-ecological model of health behaviour

Aims of LKAS Fellowship
- To use a co-design approach with target populations to develop weight loss, physical activity and dietary interventions to maximise potential for initial engagement and long term maintenance
- To explore the mechanisms of action through existing social and community networks

Sallis, Owen & Fisher 2008 in Health Behaviour and Health Education: Theory, Research, and Practice
Case Study
Social / community networks

FOOTBALL FANS IN TRAINING
Can our top football clubs help Scottish men lose weight and become more active?

Obesity prevalence among UK men (2008)

Social Disadvantage
In Scotland, around 44% of men aged 35-65 years are overweight (34% women)
A further 34% are obese (29% women)
(Scottish Health Survey 2010)

BUT men
• tend to avoid existing NHS / commercial weight management programmes
  (Wolfe & Smith 2002; Bye et al 2005)
• think slimming and dieting are ‘female’ activities – ‘real men’ don’t diet
  (Gough 2007)
• may prefer to control their weight through exercise
  (Keifer et al 2005; Haslam & James 2005)

Partner with local organisation(s)

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• A 12 week programme of weight management, physical activity and healthy eating for men aged 35-65 years with BMI ≥28kg/m² (Gray et al. J Mens Health Genit 2009)

• Evidence-based: draws on range of behaviour change techniques based on control theory (e.g. self-monitoring of weight and physical activity, SMART goal setting and feedback) (Michie et al Health Psychol 2009)

• Socially accessible: delivered by trained SPL community coaches at SPL club stadia to groups of male supporters; gender-sensitised

Pilot study and feasibility trial

Funded by Chief Scientist Office and SPL Trust
A high risk population

- 355 men enrolled across all SPL clubs in Sept 2010
- Mean age 45.1 years, mean BMI 34.5 kg/m²
- 68% of men measured had high blood pressure

Using social allegiances to facilitate engagement

FFIT participant: I had started to put on a bit of weight and I was getting lazy, and I thought “Right, I need to do something”. And when this came up I thought, “ideal”. Because of the link to [the football club], obviously I knew the other guys would be in the same sort of position as me. So that was probably one of the biggest selling points of it

Primary outcome weight loss

Also sustained improvements (to 12 months) in:
- Physical activity
- Eating habits
- Psychological outcomes

Intervention vs comparison p<.001. Error bars show standard error of mean
Full scale RCT
13 clubs
(Funded by NIHR)

![Diagram of study timeline]

- **May-Sept 11** - recruitment
- **Aug-Sept 2011** - baseline measures
- Randomisation
- Intervention group: Target N=360, 374
  - 12 week measures: Retention 87%
  - 12 month measures: Retention 89%
- Non-Trial group: Target N=360, 374
  - 12 week measures: Retention 87%
  - 12 month measures: Retention 89%
- Comparison group: Target N=360, 374
  - 12 week measures: Retention 92%
  - 12 month measures: Retention 99%

The views and opinions expressed herein are those of the authors and do not necessarily reflect those of the NIHR PHR programme or the Department of Health.

Other related network projects

RuFIT

- Partner: Sale Sharks – English Premier league
- Programme development and pilot evaluation

Target group: middle-aged male rugby supporters

- Participatory approach to answer two research questions:
  1) how can FFIT be developed for delivery in other sports settings;
  2) what components can be introduced to enhance maintenance of positive lifestyle change over 9 months?

Funded by BUPA Foundation
FFIT Secure Institutions

Partners: Perth Prison Carstairs State Hospital

Three target groups:
1) Male prisoners (low SES, addiction and other mental health issues);
2) Male patients (most with psychosis);
3) Male shift workers (at increased risk of obesity and work patterns make it hard to access weekly group-based programmes like FFIT)

Funded by the Chief Scientist Office

Socio-ecological model of health behaviour

Sallis, Owen & Fisher 2008 in Health Behaviour and Education: Theory, Research, and Practice

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Mobile technologies and health behaviour change

- Over 50% of the UK population own a smartphone, and more than 70% of mobile phones sold in the UK are smartphones\(^1\)
- Opportunity for real-time monitoring of behaviour and instantaneous feedback
- Range of different sensors (accelerometers, magnetometers, gyroscopes, barometers), GPS, camera, etc.

\(^{1}\)www.kantarworldpanel.com/K/News/news-list/The-smartest-way-to-communicate-over-half-of-the-UK-population-owns-a-smartphone

Proliferation of healthy lifestyle apps

BUT

- Evidence-base is lacking
- How do traditional behaviour change theories need adapted for mobile apps
- Urgent need to develop new understandings of processes of initiation and maintenance of behaviour change using mobile apps

To emerging projects with colleagues in School of Computing Science
MatchFIT

Aim: To use the current SPL football league structure to initiate and maintain socially-supported increases in physical activity

My City

Aims: To use the ‘community’ of the 2014 Commonwealth Games to encourage people in Glasgow to be more active and engage with the city. To explore the potential of mobile technologies to support a physical activity legacy

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