Professor Anna Cox – Written evidence (NPS0045)

Written evidence submitted by Professor Anna L Cox (University College London)

The GetAMoveOn Network+ is an interdisciplinary network of researchers and practitioners, led by Professor Anna Cox (UCL) funded by an EPSRC grant (EP/N027299/1). Our aim is to enhance understanding of how digital technologies and technology-based interventions can help people to lead more active lives.

As a 'Network Plus' part of our role is to fund other research groups to carry out research that furthers our aims. The findings of some of the research we have funded are particularly relevant to the Committee's desire to understand how adults of all ages and background can be encouraged to lead more active lifestyles, and provide examples of success stories and good practice. **We are therefore responding to Question 3 in the Committee's Call for Written Evidence: How can adults of all ages and backgrounds, particularly those from under-represented groups, including women and girls, ethnic minorities, disabled people, older people, and those from less affluent backgrounds, be encouraged to lead more active lifestyles? If possible, share examples of success stories and good practice, and challenges faced.**

A. Executive summary

A.1. Policymakers should consider the potential role of programmes that engage middle aged men in physical activity through their identity as football fans. Funding is required for further research to define the features necessary for a mobile app to scale these programmes.

A.2. The accuracy of existing data about older adults' physical activity levels is likely to be unreliable. Further funding is needed to develop appropriate digital tools to improve the accuracy of measurement.

A.3. Guidance should be produced for clinicians and practitioners on the use of appropriate and meaningful language to assess and advise older adults on physical activity.

A.4. Employers should be encouraged to consistently communicate to workers that they should take regular movement breaks. The government may need to mandate more frequent breaks, to protect workers from negative health and productivity effects of extended sitting.

A.5. Funding is required for further research to understand how behaviour change techniques can best be incorporated into physical activity apps, and which features lead to high user ratings.

A.6. Policymakers should consider how to accelerate evaluation of physical activity apps for inclusion in the NHS Apps Library. There is a need to improve usability, functionality and awareness of the Library.

B. A mobile app for middle-aged football fans to promote physical activity

GetAMoveOn Network+ funded project: A collaborative project[1] between Northumbria University, the University of Glasgow, and Healthy Stadia. This

study explored how mobile health technology might be designed to engage and encourage middle aged men in physical activity via their connections with football, and be used to augment, extend and scale community programs.

Introduction

B.1.

Many men, particularly those with more traditional masculine identities, stop playing sport and exercising as they get older. They are generally hard to reach for community health interventions and are underrepresented as participants. However, football themed healthy lifestyle programmes run at football clubs in the UK, such as FFIT, EuroFIT, Premier League Health, and Imagine Your Goals, have successfully engaged men and have led to positive health outcomes, including increased physical activity. They may be particularly important for engaging working class men for whom connections to their local football club are particularly strong[2]. Such programmes are run face-to-face at stadia. They do not currently make extensive use of digital technology.

Research findings

B.3.

A very important reason for choosing to attend the face-to-face programmes run by the football club they supported was because they would be with like-minded others. The social aspect, peer support and friendship were extremely important and absent from gyms and activities perceived as individual such as walking.

B.4.

The 'carnival' dimension of football makes hugging and crying acceptable within the context of conventional masculine identities. Similarly, football-themed health promotion programmes enable men to form caring, supportive groups and create an atmosphere in which being active, regardless of ability and performance is acceptable.

B.5.

Communications technologies, such as WhatsApp, even more than fitness technologies like wearable trackers, play a core role for participants involved in the face-to-face programmes, particularly for arranging to play sports and to maintain the social relationships formed through participation in the programme.

B.6.

Participants were interested in the possibility of digitising existing face-to-face programmes, or extending them to provide support for follow-on activities and friendships based around activities.

Recommendations

B.7.

The government should set out a plan to engage middle aged men in healthy lifestyle programmes, which gives consideration both to persuasive strategies,

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[1] John Rooksby, Marta E. Cecchinato, Parvin Asadzadeh, Matthew Philpott, Christopher Bunn (2020) Design Opportunities for Digital Men's Health: An Exploratory Study Focusing on Football Fandom *IS '20: Proceedings of the 2020 ACM Designing Interactive Systems Conference* July 2020 Pages 1565–1577

[2] Garry Robson. 2000. Millwall Football Club: Masculinity, Race and Belonging. In *Cultural studies and the working class: Subject to change*. Cassell, 219–234.

and how suitable, practical support may be provided in a way that this target population finds engaging.

B.8.

Policymakers should consider the potential role of programmes that engage middle aged men through their identity as football fans, and how such programmes might be encouraged, extended and scaled.

B.9.

Policymakers should consider the development of an evidence-based app to support face-to-face programmes and/or deliver a digital, football-focused programme at scale. An effective app would go beyond simply applying football branding and should include features that promote caring masculine relationships, co-operation and group activities.

B.10.

Further funding is needed to verify these findings and develop guidance for how digital technology could be designed to capitalise on the success of existing football-based healthy lifestyle programmes.

C. Development of the Digital Assessment of Precise Physical Activity (DAPPA) Tool for Older Adults

GetAMoveOn Network+ funded project: A project[3] led by Dr Max Western at Bath University, which sought to develop and evaluate a new digital tool to overcome the particular challenges of measuring physical activity in older people. Improving measurement accuracy is necessary to provide the foundations for developing effective interventions and to provide feedback to support older adults to make positive behavioural changes.

Introduction

C.1.

Older adults are the least active group in the population. Precise measurement of physical activity is necessary for designing effective interventions and evaluating behaviour change. Currently available tools do not accurately measure older people's physical activity. Wearable activity trackers are not good at detecting certain types of activity that are particularly relevant and beneficial for older adults. Validated paper-based self-report questionnaires are also not fit for purpose for use with older adults. The DAPPA study developed and trialled a new digital self-report tool (a form of online diary), with the close involvement of older people, to more accurately measure physical activity in older adults.

Findings

C.2.

Physical activity is thought of in very broad terms by older adults and is frequently embedded in daily activities. Older adults do not find terms such as 'moderate' or 'vigorous' exercise meaningful or useful. They are therefore of doubtful value in helping older adults to understand, report, or increase their physical activity.

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[3] Essery R, Denison-Day J, Grey E, Priestley E, Bradbury K, Mutrie N, Western MJ. Development of the Digital Assessment of Precise Physical Activity (DAPPA) Tool for Older Adults. *International Journal of Environmental Research and Public Health*. 2020; 17(21):7949. https://www.mdpi.com/1660-4601/17/21/7949. See als

C.3.

ONS statistics show older adults are rapidly increasing users and owners of digital technologies and services. The DAPPA study found that many older adults are relatively willing and able to use these on at least a basic level and therefore appropriately designed digital measurement tools should be accessible to many older adults.

C.4.

The DAPPA tool was found to be usable, acceptable and engaging. The activity diary captures more than 80 activities across different domains ('home and garden', 'out and about', 'sport and exercise' and 'social and leisure') and dimensions (frequency, duration, type and intensity) of physical activity as well as sedentary behaviour. There is scope for further optimisation of the activity diary and feedback component, so that it could potentially act as a 'light-touch' physical activity intervention through offering a means of self-monitoring behaviour and receiving personalised feedback.

Recommendations

C.5.

Policymakers and practitioners should be aware of that the accuracy of existing data about older adults' physical activity levels is likely to be unreliable due to the limitations of existing measurement tools.

C.6.

To more accurately assess physical activity levels in older adults, measurement should be framed in terms of the context in which activities occur (such 'home and garden, 'out and about', 'sport and exercise'), not just the intensity of physical activity.

C.7.

Guidance should be produced for clinicians and practitioners on the use of appropriate and meaningful language and terminology, which reflects the ways in which older adults think about physical activity.

C.8.

Further funding is needed to develop and validate appropriate digital tools to improve the accuracy of measurement of older adults' physical activity. More accurate data can act as a basis for the development of policies, programmes and public health communications to encourage older adults to be more active.

D. An app for sedentary office workers to reduce sitting time

GetAMoveOn Network+ fundedproject: A project[4] led by Dr Melitta McNarry at Swansea University, on the role for digital technology to address extended sitting time in office workers.

Other research: A project[5] by the eWorkLife group, a collaboration between UCL, Birmingham University and Northumbria University, led by Prof Anna Cox, which

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[4] Morris, A.S.; Mackintosh, K.A.; Dunstan, D.; Owen, N.; Dempsey, P.; Pennington, T.; McNarry, M.A. Rise and Recharge: Effects on Activity Outcomes of an e-Health Smartphone Intervention to Reduce Office Workers' Sitting Time. *Int. J. Environ. Res. Public Health* 2020, *17*, 9300. https://doi.org/10.3390/ijerph17249300 https://www.mdpi.com/1660-4601/17/24/9300

[5] Reported in written evidence to the COVID-19 Committee Inquiry, "Living online: the long-term

examined the impact of the shift to home working by many office workers as a result of the Covid-19 pandemic.

Introduction

D.1.

Office and desk-based workers in the UK spend 60–80% of their working hours sitting, 52% in bouts over 30 minutes; 25% over 55 minutes. This pattern is particularly associated with negative health effects and lower productivity. This study aimed to understand whether a smartphone app can be used to reduce and break up this sitting time by issuing prompts to stand up.

Findings

D.2.

Prompts at 30- and 60-minute intervals both led to a meaningful reduction in sitting time. 60-minute prompts were more effective and reduced sitting time almost twice as much (by 69.6 mins/day). 30-minute prompts were more intrusive so were more likely to be ignored.

D.3.

Using smartphone apps to deliver prompts to stand could be an effective, cost-effective, and widely accessible strategy to support office workers to reduce sitting time.

D.4.

Encouragement from colleagues helped participants to stay responsive to the prompts. High workload, sedentary job tasks, and perceived organisational expectations such as productivity targets, made participants less responsive to prompts.

D.5.

Participants suggested elements such as gamification (the inclusion of game-like elements), workplace challenges, and demonstrable management support would make them more responsive.

D.6.

In a separate study by eWorkLife, participants who had shifted to home working due to the Covid-19 lockdown, reported the loss of many opportunities for short, active breaks previously provided by the office environment (e.g. walking to a meeting or to the photocopier). Remote workers often feared that if they were not always at their desks, they would be perceived as unproductive. This led to fewer breaks, prolonged sedentary time and fatigue (which could mitigate against physical activity outside work).

Recommendations

D.7

Employers should be made aware of the health risks and productivity losses associated with sitting time and encouraged to take action to address this amongst their employees e.g. by encouraging them to use apps to set prompts to stand and move.

D.8.

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impact on wellbeing" in December 2020 https://www.eworklife.co.uk/parliamentary-evidence-living-online-the-long-term-impact-on-wellbeing/

Employers should be encouraged to consistently communicate to workers that they should take regular movement breaks. Employers should also create opportunities for workers to undertake these e.g. by switching from video-calls to phone calls that can be taken while walking.

D.9.

The government may need to mandate in law more frequent breaks, to protect the workforce from negative health and productivity outcomes associated with high levels of sitting.

D.10.

Further funding is needed for research to better understand the optimum frequency for movement prompts, and the factors which may influence whether people respond to a prompt. This would enable app designs and workplace 'sit less, move more' initiatives to be optimised.

E. Enabling access to high quality, effective physical activity apps

Research[6] carried out by GetAMoveOn Fellow, Dr Paulina Bondaronek, evaluated whether high ratings for physical activity apps in the app stores are an indicator of how effective they are likely to be in helping people to increase physical activity. Likely efficacy was assessed by considering whether, and how many, proven Behaviour Change Techniques were incorporated into the app.

Introduction

E.1.

Despite millions of downloads of health apps, 28.7% of adults were found to be inactive (less than 30 minutes of moderate physical activity such as walking per week). This suggests that the apps are not as effective as they might be in helping people to improve their physical activity levels.

Findings

E.2.

There was no evidence of an association between popularity and likely efficacy. This suggests that the popularity of these apps is not a sufficient filter to distinguish those that might have higher potential to help users improve their physical activity levels.

E.3.

Allowing the commercial market to determine which physical activity apps are more likely to be downloaded is unlikely to maximise health impacts in terms of increasing physical activity. Although the NHS Apps Library has been established to help people identify high-quality apps, it contains only two physical activity apps[7] compared to around 325,000[8] in the iTunes and Google Play app stores.

E.4.

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[6] Bondaronek P, Slee A, Hamilton FL, et al (2019) Relationship between popularity and the likely efficacy: an observational study based on a random selection on top-ranked physical activity apps BMJ Open 2019;9:e027536. doi: 10.1136/bmjopen-2018-027536

[7] As at 22nd January 2021

[8] Bondaronek P, Slee A, Hamilton FL, et al (2019) Relationship between popularity and the likely efficacy: an observational study based on a random selection on top-ranked physical activity apps BMJ Open 2019;9:e027536. doi: 10.1136/bmjopen-2018-027536

Little is known currently about what app features lead to high ratings, or which behaviour change techniques, and in what combination, are most effective in increasing physical activity.

E.5.

Anecdotal evidence indicates there are opportunities to make better use of existing assets in the NHS Apps Library. For example, it is not currently possible to filter on 'exercise' or 'physical activity' to find suitable apps. There is currently no 'cross selling' of apps: for example, physical activity is proven to be beneficial for mental health, so users searching for mental health support could be encouraged to download physical activity apps as well as apps to support mental wellbeing.

Recommendations

E.6

Funds should be made available for further research to understand how behaviour change techniques can best be incorporated into physical activity apps, and how to combine features that are effective with those that lead to high ratings. Policymakers should develop and disseminate guidance for developers and commissioners based on the findings.

E.7.

Policymakers should consider how best to accelerate the evaluation of physical activity apps so that the public can judge which of them in the major app stores are likely to be effective, and to increase the number available in the NHS Library.

E.8.

The NHS Apps library should adopt a user-centred approach to ongoing development of the Library to improve the functionality and usability, and incorporate more commercial techniques such as cross-selling of different apps.

E.9

Funding is required for a communications campaign to raise awareness of the NHS Apps Library amongst the general public.

Acknowledgments

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