

Case Study

Aspect

**Keeping older people
active and independent**

2021





Venture

Keep-on-Keep-up (KOKU)



Social science discipline

Health Sciences



Aspect Members

Manchester University




Sector

Healthcare



Route-to-market

Licensing



Keep-on-Keep-up is an NHS approved, highly rated digital health system which is helping older adults to age well, reduce their risks of falling and take control of their health.

Falls are the most common cause of death through injury in the over 65s, with one in three people falling each year. They are a leading cause of emergency hospital admissions for older adults, costing the NHS over £2.3 billion a year and rising. As well as physical consequences falls can also have negative psychological consequences. Fear of falling can develop in 39% of older adults who experience a fall, increasing susceptibility to social isolation, dependency on others and care home admission.

Led by Dr Emma Stanmore, Reader in the School of Health Sciences, University of Manchester, the multidisciplinary Healthy Ageing Research Group have made it their mission to tackle this problem. Through advancements in digital technologies and the application of health behaviour change theory, they have co-created the Keep-on-Keep-Up (KOKU) digital health system. The project is a research collaboration between the University of Manchester, Reason Digital Limited (a tech-for-good creative agency) and Central Manchester University Hospitals NHS Foundation Trust. As a technology-based solution KOKU is able to overcome some of the difficulties that traditional fall prevention programmes face, as it is relatively inexpensive, scalable, and can be used safely in the older person's home. It is aimed at anyone aged 65 and over, but could also be used by younger age groups who are digitally literate or can be supported with the download and simple navigation of the app (i.e. by relatives, carers or care home staff).

The free app supports users to increase their exercise, through various methods:

- It comprises (of) a gamified programme of strength and balance exercises with progressive intensity levels, as well as additional games to raise awareness of safety and risk assessment in the home, bone health, diet and hydration.
- The strength and balance exercises are proven methods to reduce falls by a third.
- The app contains an animated character which guides users through the exercise programme,

demonstrating how each exercise should be completed, with feedback, rewards and tracking to encourage engagement and adherence.

The system is an intervention programme underpinned with social sciences and psychology theory; mainly health behaviour change theory. Knowing what affects people's behaviour and the methods to help them change have been key to KOKU's development. Understanding the wider social problem, not just the health challenges associated with older people unable to keep active, the system has been designed through

co-creation, with user participatory another method instilled with social science theory. Whilst the gamification element is built into the system, featuring reward and competition elements, overlaps both social sciences and health psychology research. As a free digital tool, lower income participants who may have not used systems in past are able to access it, ensuring that those who are usually marginalised from accessing these tools or have low health and low digital literacy are included in the user demographics, with a view to creating wider social impact as a result.



The impact

- Trials in Greater Manchester, Nottingham and Texas have found that KOKU is viewed very positively by older adults and objectively found to have high usability with improved outcomes in balance, health status and confidence after 6 weeks independent use.
- Statistically significant improvements were found in exercise frequency, exercise efficacy, and sleep quality. Along with significant decreases in disability and sleep medication frequency. There were also improvements to the users' depressive symptoms, sleep hours, self-rated mental health, fall counts, and fear of falling, although these findings were not statistically significant.

- NHS Digital have approved KOKU as a low-risk device, compliant with regulatory safety standards, and it is GDPR compliant.
- ORCHA – the world's leading health app evaluation and advisor

organisation, has assessed KOKU and been awarded an ORCHA Score of 84% which is the top score for a falls prevention app enabling KOKU to display the ORCHA quality badge.

“

I haven't used my muscles in years and I can stand up now by using just the power of my legs! I wasn't doing anything before. I'm building strength as never before. It's all because of the program. It worked my body, mind and spirit. When I started, my motivation was not completely there. I'm 63 years old but you're never too old. The Coach was so helpful and compassionate .

”

KOKU trial participant



Key Learnings



Dr Stanmore states that the predesign work is really important and integral to the success of the system. Talking to a wide range of stakeholders including potential users, experts and potential collaborators and gathering their input has enabled the researchers to create an app which will achieve real impact as it is based on user need. She strongly believes that the collaboration and team effort has been key to the system's achievements and success and also helped with the seed funding stages of the project, taking the concept through to the prototype.

Dr Stanmore credits the support of the Masood Entrepreneurship Centre (MEC) which has been phenomenal. Through MEC, Tony Walker was particularly instrumental in helping with business development and advice at each stage of the system's development. He didn't overwhelm the team with everything that needed to be done but instead drip-fed advice at each stage which helped. She states that the Centre has a variety of experts and mentors who each offer advice which can help with any problem during the business development journey.

Some key advice:

- Rigorously test the design and keep going back to users/stakeholders to make sure you're on right track.
- At the pre-design stage, think of the long-term objectives and impact – don't just rush ahead with your ideas, as novel as they may be.
- Talk to as many potential users and experts as possible, never assume, find out what people's challenges may be and how your solution will tackle this.
- Be flexible and agile from early on and change as you go along rather than be set in your original assumptions.



Add a quote from
Tony Walker



What's next for KOKU?



Mainly used in the UK and US, KOKU was released for free during the pandemic and is in use in over 15 countries. It has recently been translated into Norwegian and Danish and the plans are to scale the Danish version up, working with researchers from the University of Copenhagen. KOKU is also in the process of piloting a Norwegian version of the system.

The team are continuing to validate the efficacy of the system as a fall prevention technique, and the next stage is to conduct a cost effectiveness trial to gather data on how use of the system could reduce costs for healthcare services.

The system is currently available in the App store **for iPad use only** and can be downloaded for free as long as the user has an iPad. The aim is to roll out an Android version, which will have inbuilt analytics to measure user change and success even further, enabling the team to gather data on the improvement of quality of lives and whether it is achieving wider societal impact.

Background Information



Dr Emma Stanmore



Role

Director KOKU Health and Reader,
DNMSW/School of Health Sciences



Degree

PhD, MRes, BNurs (Hons), DN, RN

Dr Emma Stanmore, Reader in the School of Health Sciences gained her Bachelors, Masters and PhD from the University of Manchester and is the Deputy Lead for the Healthy Ageing Research Group. Emma has over 20 years combined experience in healthcare, research and teaching with a particular focus on health innovation (new ways of delivering care or use of digital health technologies to promote uptake, access to services and avoid hospitalisation) and the promotion of healthy ageing. Before joining the Division of Nursing, Midwifery

and Social Work in 2005, Emma implemented a number of new healthcare schemes as a Clinical Manager in primary care, including hospital at home for patients with COPD, generic healthcare assistants (trained in nursing, physio, OT and SALT), community rapid response schemes and care home training co-ordinators all with the aim of reducing unnecessary hospital admissions and improving the care for older people.

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Transforming Society Through
Social Science Innovation

Aspect (A Social sciences Platform for Entrepreneurship, Commercialisation and Transformation) is a network for organisations looking to make the most of commercial and business opportunities from social sciences research.

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