Evidence-based ICT tools for weight loss maintenance

Informe

Información del proyecto

NoHoW

Identificador del acuerdo de subvención: 643309

Sitio web del proyecto

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Proyecto cerrado

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Periodic Reporting for period 4 - NoHoW (Evidence-based ICT tools for weight loss maintenance)

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Resumen del contexto y de los objetivos generales del proyecto

More that half of the adult European population has overweight and obesity. Health problems associated with obesity are a major healthcare challenge. Effective interventions and successful commercial weight loss programmes to help people lose weight already exist. However, most people re-gain the weight they lose. Researchers already know that weight loss maintenance (WLM) depends on changing behaviours, but we don't know which behaviour change techniques work best for WLM or why, or the influence of different personal or social contexts. To better tackle obesity and prevent weight regain, we need to learn more about what behaviour change techniques best maintain weight loss in the long term. With the scale of the obesity problem, we also need scalable solutions, such as digital WLM tools for delivering interventions that would otherwise be delivered through resource-intensive, face-to-face services.

The overall objectives of NoHoW were to: gather evidence about how weight is lost and maintained in Europe, develop a personalised Toolkit (TK) of IT tools to help individuals sustain behaviour change and maintain weight loss and evaluate the impact of the TK on WLM in a large trial in the UK, Denmark and Portugal. In particular, the evaluation looked at how motivation, goal setting and coping plans, and tools to improve emotion regulation might support WLM, as well as if predictive signatures could be identified to help sustain weight lost.

Trabajo realizado desde el comienzo del proyecto hasta el final del período abarcado por el informe y los principales resultados hasta la fecha

NoHoW included a European survey to learn about patterns of weight loss, what people do to maintain their weight loss, and where people most often need support in preventing weight regain. The survey targeted people who had previously lost weight, and collected a wide range of information, including weight loss goals, motivation for weight loss, socioeconomic factors, and demographic information. The results of the survey confirmed that people need support with motivation, self-regulating their behaviours and regulating their emotions.

In the UK, Denmark and Portugal, we completed in-depth interviews with people who had recently lost weight to know what motivated them to lose weight, how they managed emotions and stress and regulated their diet. We learned that many different things from the interviews – for example, short- and long-term weight loss maintainers had different strategies to regulate their food intake. Long-term maintainers had formed routines that allowed them to be more flexible, but also provided them with stronger self-control when buying and storing food and eating at social gatherings. Short-term maintainers often displayed a 'weight loss mind-set', had less flexibility, planned more and focused on avoiding certain behaviours.

NoHoW developed an IT-based Toolkit, with a set of mobile apps, web-based tools and inputs from other technologies, such as smart scales and activity and sleep trackers. Through the TK, users learned behaviour change techniques that could help them maintain their weight loss. Users could also access useful information about their own weight, activity levels and sleep, helping them to set

goals and monitor their own progress.

The NoHoW Toolkit was tested through a randomised controlled trial in the United Kingdom, Portugal and Denmark with over 1,600 adult men and women with overweight/obesity who had successfully lost more than 5% of their body weight in the past 12 months, and who wanted to maintain the lost weight in the long term. Participants were randomly allocated to three intervention groups and one control group, and were given different kinds of support, including motivation, goal setting and coping plans, emotion regulation and stress management through the TK. Everyone was asked to weigh themselves regularly and track activity and sleep through an activity tracker. Measures of weight and health were completed at baseline and after 6, 12 and 18 months, as were questionnaires related to psychological measures and the TK itself.

Overall, the trial found that self-management and/or emotion regulation delivered digitally by the TK was not effective in supporting WLM. A clinically small effect was observed in the subgroup of men who received motivational support, and few and inconsistent effects were seen on metabolic biomarkers. Thus, effective scalable methods for sustained WLM are still missing and our knowledge about how to help people prevent weight gain relapse remains insufficient.

If the TK had worked, there were plans to develop commercial services and products. In light of the trial results, commercialisation of the Toolkit as a whole is no longer planned. However, the results of NoHoW will have an impact on future research and have already sparked new research initiatives, such as the development of Energy Balance tracking technology by the University of Leeds and the use of Big Data analysis in person-centred approaches to behaviour change at the University of Lisbon.It will also be possible for researchers to request access to anonymised NoHoW data for future research (https://easo.org/the-nohow-dataset/).

To date, the project has produced eleven open access publications with more submitted and in preparation. NoHoW held project symposia at the European Congress on Obesity in 2017, 2018 and 2019, with a further symposium planned for 2020, and the project was presented at more than 35 scientific conferences and events. The project also co-hosted a Final Workshop with the Portuguese Society for Patients with Obesity to educate healthcare professionals about the management of weight regain and sharing NoHoW results. Videos and other engaging content are available on the project website (http://nohow.eu/media/).

Avances que van más allá del estado de la técnica e impacto potencial esperado (incluida la repercusión socioeconómica y las implicaciones sociales más amplias del proyecto hasta la fecha)

The main expected societal impact of NoHoW was to increase public health and well-being with an effective, digital tool to support sustained WLM. The aim was that healthcare systems tackling the growing obesity epidemic could benefit from a scalable digital tool, that was less costly and resource-intensive than one-to-one clinical approaches. Unfortunately, the TK was not effective. This is similar to results from other recent trials of WLM interventions, highlighting the significant challenges faced in

designing effective supports for WLM. To this end, NoHoW has generated a joint Position Statement on behavioural approaches to longer-term sustained weight management with the EASO Obesity Management Task Force.

While the TK did not support WLM, NoHoW generated new evidence with important impacts for researchers involved in obesity research. Both the benefits and limitations of digital approaches to WLM are important sources of information needed to develop the next generation of personalised behaviour change solutions for self-management of weight and health.

Results have identified new areas for technology development, such as using data from tracking devices to personalise information delivered to users and collecting more detailed information about users to better tailor the content they receive from services. The need to improve how we conduct research for the development of digital health tools was also highlighted, for example, by moving towards SMART trials with several rounds of small-scale evaluations to optimise services before a large trial of effectiveness.

Logo

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