

Paving the way for SMART weight loss in college students

Many established and emerging technologies represent attractive mediums for the implementation of behavioural weight loss interventions in college students due to their widespread reach, familiarity, and appeal among other advantageous characteristics.¹ However, surprisingly few studies have sought to evaluate technology-based behavioural weight loss interventions in college students.²

In *The Lancet Diabetes and Endocrinology*, Job Godino and colleagues³ not only help address this literature gap, but do so using an innovative, ambitious, and timely approach. The authors report a parallel-group, randomised, controlled trial that enrolled 404 overweight or obese college students from three universities in the USA. Participants were assigned to either a multi-component, adaptive, technology-based behavioural weight loss intervention (n=202, the SMART intervention) or general information about health and wellness (n=202, control group). At 24 months, the primary outcome—objectively measured weight at 24 months—was assessed in 341 (84%) participants and was not significantly different between the groups (−0.79 kg [95% CI −2.02 to 0.43], p=0.204).³ However, at earlier timepoints, weight loss was greater in the intervention group compared with controls (6 months −1.33 kg [95% CI −2.36 to −0.30], p=0.011; at 12 months −1.33 kg [−2.30 to −0.35], p=0.008).

Their use of an adaptive intervention and the long duration of the study contrast with previous technology-based weight loss studies in college students, which have employed less adaptable, short-term interventions.^{4,5} They also creatively attempted to leverage the power of existing social ties⁶ by using a popular social networking framework (Facebook) to direct the focus of social support towards participants' weight loss-related behaviours. Additionally, their use of researcher-designed, theory-based, smartphone apps (GoalGetter app for setting, tracking, and sharing progress towards weight-related goals; TrendSetter app for self-monitoring and sharing weight, physical activity, and diet; and BeHealthy app for delivering and sharing weight-related challenges) is a study strength given that many commercially available weight loss apps generally incorporate little or no evidence-based content.⁷ The comprehensive intervention approach

used resulted in a mean 1 year weight reduction of 1 kg and an impressive 2 year retention rate of 80%, especially considering the remote delivery of the intervention and the age group of the sample. The study represented a novel way to engage an age group (young adults aged <40 years) that is typically difficult to retain in weight loss interventions⁸ and was effective in stimulating short-term, modest, weight losses.

In addition to revealing these promising outcomes in an under-researched area, Godino and colleagues' study³ sharpens the focus on several issues inherent to their specific treatment approach as well as the research area. In particular, the combination of the study design and the challenges related to fully understanding participants' level and nature of engagement with the technological modalities makes it difficult to identify the most influential intervention components. Indeed, a science of engagement is emerging alongside research that harnesses technologies for improvements in health-related behaviours and outcomes.⁶ Defining useful engagement metrics, determining how to capture and extract active and passive engagement data from various technological delivery mediums, ascertaining what constitutes meaningful engagement, and finding ways to increase engagement and reengagement after a period of disengagement are all challenges going forward.⁶ The lack of clarity associated with these factors probably helps to explain the conflicting engagement findings between Godino and colleagues' study,³ which found no relation between engagement levels and weight change, and previous technology-based weight control studies in adults that found a favourable relation between engagement and weight loss.⁹

Similarly, additional challenges surface when investigators capitalise on the reach of technology and its ability to cut across geographical boundaries to deliver a behavioural weight control intervention. For example, Godino and colleagues³ aimed to reach college students who varied greatly in terms of age (18–35 years), race, and ethnicity, and thus also might have varied in terms of their motivations for weight loss, as well as current and evolving life circumstances. Although their attempt to tailor the intervention to this diverse group of students via an



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Lancet Diabetes Endocrinol 2016

Published Online

July 14, 2016

[http://dx.doi.org/10.1016/S2213-8587\(16\)30146-2](http://dx.doi.org/10.1016/S2213-8587(16)30146-2)

See Online/Articles

[http://dx.doi.org/10.1016/S2213-8587\(16\)30105-X](http://dx.doi.org/10.1016/S2213-8587(16)30105-X)

adaptive approach was logical, the practicality and complexity of setting up and disseminating this type of intervention needs to be considered.⁶ The use of social networking-based technologies also makes it difficult to prevent contamination between study groups as observed in Godino and colleagues' study³ (at least 30% of the control group were Facebook friends with at least one person in the intervention group) and to determine the full reach of the intervention, given that it could extend far beyond what is captured within the immediate social networks. As investigators continue to use technology to tap into the power of existing social ties, it will be important to determine how to best capture the most relevant data to understand the full intervention impact.

Furthermore, the inability of the intervention to facilitate sustained weight losses at 2 years and prevent weight gain during a time period when individuals are highly susceptible to experiencing weight increases highlights additional future research avenues. There is clearly a need to better understand how to harness traditional intervention models for delivery through technologies to elicit weight losses that will be maintained over time.⁶ Likewise, the value of and need for evaluating technology-based weight gain prevention interventions is evident, and research focused on this area is just beginning to emerge.¹⁰ Although Godino and colleagues' study³ was not designed to target weight gain prevention, it is worth noting that their intervention group gained slightly less weight on average at 2 years compared with their control group (0.3 kg vs 1.1 kg). It is not possible to formulate any concrete conclusions based on these data, but this finding naturally generates a heightened interest in exploring technology-based approaches for preventing weight increases.

Godino and colleagues' study³ is at the forefront of a burgeoning research area focused on technology-based weight control in young adults. The potential ways in which technology can be employed to favourably impact a vast and diverse group of college students' weight control efforts and associated health outcomes are numerous and constantly evolving. Although this task might seem daunting, the insights gleaned from this study will help direct the path forward for this type of research.

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We declare no competing interests.

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