Supplement

Chapter 3

Study 1: Fit Uni Life to thrive: an online health and wellbeing prototype for young people

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The late adolescent and young adult years are a prime time to promote healthy behaviour and develop wellbeing skills, particularly as young people transition from secondary school to post-school education, training or employment. Entering post-school education requires young people to face multiple new challenges (eg, changes in living arrangements, academic environments, and family, friendship and social networks) while adapting to greater independence and responsibility for their own health and wellbeing. Although most young people negotiate this transition successfully, a significant proportion will experience short or long term physical or mental health problems, misuse alcohol or other substances, or be affected by social isolation.

Concurrently, there is also a high dropout rate for young people from their first year of university (ranging from 10% to 24%) at a significant cost to students, their families and higher education institutions (average cost of $36 million per institution per year). Dropout rates have also been linked to groups of students who are perceived to be less prepared for the challenges of university1 and those with emerging mental health difficulties. The first year of post-school education is therefore a crucial time to provide young people with tools that may assist them to develop personal and social skills to manage their health and wellbeing and social connectedness. The overall goal is ongoing and productive participation in higher education.

Wellbeing and technology

Broadly, wellbeing can be viewed as a construct concerned with optimal experience and functioning.2 Optimal wellbeing can be considered to be in place when an individual has the physical, psychological and social resources to meet their needs and goals.3 Subjective wellbeing is associated with greater success in quality-of-life domains, including health, relationships and work.4,5

Important determinants of wellbeing include good physical health (which has added benefits of reducing mortality risk, and improving mental health and other social outcomes)6,9 and higher levels of social connectedness. An increasing body of review evidence suggests that loneliness predicts higher rates of morbidity and mortality.10-14

With advances in digital technology, and the near universal availability of smartphones, there is great opportunity for personal wellbeing apps and e-tools to provide support for multiple components of wellbeing — including physical, mental and social dimensions.15 Recent research conducted by the Australian Communications and Media Authority and the Office of the Children’s eSafety Commissioner16 highlighted that 99% of young people have access to the internet; 86% of young people aged 14–17 years have a home internet connection; 88% of teen users went online more than once a day; 83% access the internet three or more times a day; 89% have a mobile phone (80% have a smartphone); and 65% use their mobile phone to access the internet.

Core features for inclusion in an online health and wellbeing system

Based on published research findings and commentary, several core features should be considered when developing an online health and wellbeing system for young people. These include:

- A rapid but comprehensive self-rating system that examines a range of health and wellbeing domains. By contrast, most existing systems focus on only one specific health dimension, such as weight loss17 or smoking cessation.18
- Specific goal-setting functions. To establish goals that effectively help an individual alter their behaviour, goals should be personally relevant, challenging but realistic and achievable, and sufficiently specific so that outcomes can be measured.19
- Real-time tracking of actions to achieve self-determined goals. As smartphones can be linked with powerful technology that can track and monitor geographic, personal and social information,15 sensor data can be used individually or triangulated to track user activities and wellbeing. Ideally, individuals would use aggregated behavioural data to improve their habits and behaviour. Behaviour change research has long demonstrated that the combination of goals plus feedback is more effective than goal setting alone.20,21

Most existing systems, however, only focus on one of these features rather than providing a comprehensive and integrated system of support. The objective of this study, therefore, was to co-design an online health and wellbeing system for young people that also included social connectedness, plus participation and engagement in post-school education.

Methods

Using Project Synergy’s research and development cycle, co-design workshops and knowledge translation were carried out at the University of Sydney between July 2014 and January 2015. Participants were recruited using a university-wide multi-pronged approach, which included: posters displayed on student and staff noticeboards; an organic study-specific (snowball) Facebook page; and existing university social media channels.

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The first workshop was held with 18–24-year-olds (different research questions). The workshop had different groups of participants and addressed staff, to ensure the prototype met the aims of improving health, wellbeing, social connectedness, participation and engagement at university, and academic outcomes — all of which were included as workshop topics. Other topics included: developing personalised wellbeing plans; assessing current health and wellbeing online; setting goals; providing results online (summary of results); selecting apps and e-tools; collecting and monitoring personal data (including data from apps and e-tools); opting to share data with the university; and generating progress reports.

**Results**

Through participant idea generation and feedback, the co-design and knowledge translation processes resulted in a unique and integrated solution for the prototype (Box 1). The prototype included three core features: (i) an initial survey to assess current health and wellbeing, and the subsequent development of a personalised plan and selection of goals to achieve this plan; (ii) links to an integrated set of quality assured apps and e-tools that match the chosen goals; and (iii) provision of real-time feedback, permitting young people to monitor their own progress, make changes that suit them best (in line with their goals), and consider what is and isn’t working.

**Assessment of health and wellbeing**

Participants recommended that three broad health and wellbeing domains be assessed: health, social connectedness, and functioning and engagement. Our research group subsequently selected measures that represented these domains:

- Health was measured by items including overall health, overall mental health, overall physical health, resilience, misuse of alcohol or other substances, sleep, somatic concern (Somatic and Psychological Health Report), and physical activity (International Physical Activity Questionnaire).
- Social connectedness was measured by items including time spent socialising, satisfaction with personal relationships, and occupational functioning assessment scale, days out of general functioning (self-rated and adapted from the Social and Occupational Functioning Assessment Scale).
- Functioning and engagement were measured by items including time spent engaged in education, work or volunteering, general functioning (self-rated and adapted from the Social and Occupational Functioning Assessment Scale), days out of role (Brief Disability Questionnaire), and work-life balance.

**Key features of the co-designed online health and wellbeing prototype**

Students and staff participated in the co-design workshops and co-developed user journeys for the prototype (user journeys are diagrams of the steps or processes for a scenario in which a user may interact with the content of an online tool). After each workshop, findings were translated by a knowledge translation team into draft wireframes, which were then refined and used to build the prototype (see Chapter 2 for a detailed description of these phases and explanations of the terminology used in this chapter).

All participants received a voucher to thank them for sharing their knowledge and expertise. The value of the voucher varied depending on the activity type and duration. The study was approved by the University of Sydney Human Research Ethics Committee (Protocol No. 2014/82).

**Co-design workshops**

Three co-design workshops for this prototype were held on campus at the University of Sydney and informed by guidelines created by the Young and Well Cooperative Research Centre. Each workshop had different groups of participants and addressed different research questions.

The first workshop was held with 18–24-year-olds (n = 15; eight women, seven men). The focus of the workshop was to explore internet use and hardware use (eg, smartphone, tablet, PC or laptop). Use (or potential use) of online e-tools to improve general health, wellbeing and social connectedness was also explored.

Participants then helped develop designs for a new e-tool (ie, the prototype), including how it might look and function.

The second workshop was held with first-year university students (n = 16; eight women, eight men) to determine their specific needs and wants for the prototype and further inform the design. The third workshop was held with university staff from a diverse range of faculties (n = 15). These two workshops focused on exploring the requirements of university students and staff, to ensure the prototype met the aims of improving health,
3 Co-designed user journey of “Jake” (a hypothetical first-year university student) using the online health and wellbeing prototype

**FIRST YEAR UNIVERSITY STUDENT USER JOURNEY**

**GOALS:** Improve Mindfulness, Improve Sleep, Improve Mood, Improve Relationships

**DEVICES:** iPhone 7

**BACKGROUND**

Jake has just moved to Sydney from Orange to start his Electrical Engineering degree at University. Jake is living out of his home for the first time with a group of mates he does not know. He has left behind his mum, dad and three younger siblings as well as his long term girlfriend, but plans to drive home every weekend to see them. Jake has great mates in Orange but most of them are staying to work or are attending different universities. Jake has always been pretty level-headed, loves sport and a beer at the pub after a busy game.

**WEEK 1 ORIENTATION WEEK**

Jake attends Orientation Week at University where he learns about FitLife to thrive and what it can do for him in his first year at University. Jake does not really get stressed, and is not too worried about his relationship, but likes the idea of trying mindfulness and especially likes the idea that he can monitor his sleep and physical activity to see what impact they have on his mood.

**WEEK 4 (EASTER BREAK)**

During Easter break, Jake’s girlfriend tells him that she has met a local winemaker through her family’s vineyard and that the long distance has made the relationship too tough to manage. Jake, devastated and heartbroken, returns to Sydney.

**WEEK 5 (BACK TO UNI)**

Jake’s first week back at University after the break up is tough, and he spends most nights touring and turning wondering what he could have done differently. Jake’s mood does not improve and he feels really down, flat and miserable. He is missing more sleep and finding that he cannot concentrate on class during the day. He is so exhausted and cannot find any motivation to exercise. Based on his sudden change in behaviour (poor sleep, low mood, no physical activity, FitLifeLife), his phone sends him a notification checking in. Jake goes back into the system and finds some information on how to manage relationship breakdowns.

**WEEK 7**

Another two weeks pass and Jake is still sad, not sleeping or exercising and feels that it is impossible to get out of bed. FitLifeLife to thrive again sends him a notification and this time suggests that he may be experiencing depression and suggests he visit ReelOut.com, beyondblue or headspace (Project Synergy partner organisation) to learn more. Jake takes the advice and makes an appointment to visit a health professional at the local headspace service.

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* A user journey is a diagram of the steps or processes for a scenario in which a user may interact with the content of an online tool.
Goals, apps and e-tools

To assist young people to achieve their personalised goals, the prototype recommended apps and e-tools that were quality assured using the Mobile App Rating Scale (MARS) (Box 2).26 This is a tool that assesses app and e-tool quality on four key domains: engagement, functionality, aesthetics and information quality. MARS rates these dimensions using a five-point scale: 1 for inadequate, 2 for poor, 3 for acceptable, 4 for good, 5 for excellent.29

The prototype also provided a detailed breakdown of how recommended apps and e-tools can aid a young person’s health and wellbeing based on the PERMA model of flourishing.30 The PERMA model categorises subjective wellbeing into five domains: positive emotions (P), engagement (E), relationships (R), meaning (M) and accomplishment (A). These constructs share multiple elements with other common models of wellbeing.31–34 By highlighting the different subjective wellbeing domains that each recommended app or e-tool promotes, the user gains a greater understanding of the areas of subjective wellbeing they may be improving by using these software programs. This also enables the user to differentiate between various programs that may target the same goal and enable them to decide which apps or e-tools better suit their individual needs and goals.

The prototype was interoperable with real-time tracking wearables and apps, such as Fitbit, Strava, Recharge and UBwell. Using aggregated data from these devices, the prototype was able to generate tailored progress reports for each user. These reports provided a holistic picture of the user and their progress across several health and wellbeing domains (eg, physical activity, sleep, mood, anxiety, energy, substance use, functional engagement, healthy eating and weight). Enabling such diversity of tracking domains has been advocated in research publications.15

Both the co-design and knowledge translation processes acknowledged engagement and user retention problems, which have been increasingly documented.35,36 These problems were addressed by developing a tips-and-advice feature, integrating the prototype with university social media channels and including a 21-day online challenge (Box 1). The ability to tailor the prototype to the context in which it would be used was also considered very important, so the prototype was designed to be configurable (or rebranded). The University of Sydney participants named their version of the prototype “Fit Uni Life to thrive”.

Finally, to contextualise the prototype, participants iteratively developed a hypothetical user journey over the three workshops (Box 3). It was shown on a timeline, as this makes it easier to understand changes in context, and understand user motivations, problems and needs. The user journey helps technology developers understand why and how young people want to use the co-designed prototype. It also guides them in building a user experience that is easy to understand, efficient to use, and will ensure that young people return.

Discussion

An online health and wellbeing system was co-designed for young people within a post-school education setting. The prototype comprised an integrated suite of features, including assessment, planning and goal setting, recommended apps and e-tools, real-time feedback, and functions dedicated to connecting young people to their university community (the tips-and-advice feature, social media channels and 21-day online challenge).

The initial survey to assess current health and wellbeing resulted in a personalised plan, as well as goals to achieve this plan. By personalising goals, it is more likely that young people will view them as relevant and achievable, which are both key features of goal setting.19

The prototype also included an integrated set of quality assured apps and e-tools that were categorised using the PERMA model of flourishing.29 By categorising the apps and e-tools, young people would gain a greater understanding of the areas of subjective wellbeing that they were targeting.

Another important feature of Fit Uni Life to thrive was its whole system focus on social connection, which is critically important to a young person’s health and wellbeing. People aged 16–24 years are particularly vulnerable to loneliness and a lack of social connection,37 and age appropriate co-designed interventions to address this have been called for in the mental health literature.38 We argue that early intervention and preventive digital tools focused on enhancing social connection are therefore vital, particularly as this age group is at the greatest risk of the emergence of mental ill health. Thus, a multifaceted approach to assisting young people with their social connection underpins the entire Fit Uni Life to thrive prototype.

Effective ways for universities to promote and support good mental health within their communities are multifaceted.39 One of the key areas for investment when working towards better health and wellbeing of both students and staff is developing, evaluating and promoting evidence-based health information technologies. Strategically, these are ideal in settings such as universities — they can reach large numbers of staff and students, and they can ultimately form part of a solution to promote good health and wellbeing in the 21st century.


9 Mannen G, Faulkner G. Physical activity and the prevention of depression: a systematic review


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