Debate: Supporting the mental health of school students in the COVID-19 pandemic in New Zealand – a digital ecosystem approach

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Introduction

On 28 February 2020, New Zealand joined the rising number of countries affected by coronavirus disease 2019 (COVID-19). Borders were closed to nonresidents from 19 March, and a four-level response system impacting schools, employers and public movement was implemented. This led to a complete lockdown followed by a stepwise easing to minimal restrictions until a subsequent cluster of COVID infections in August caused an increase in restrictions again. The closure of schools (at Level 3 and 4) impacts students, families and school staff. There is the challenge and stress of online learning, uncertainty about the future, social isolation, loss of routine and being confined to home, at times with stressed family members and at worst being more exposed to an abusive environment. For Māori and Pacific communities, the impacts of COVID-19 are exacerbated because they more often live in large, multigenerational households affected by socioeconomic and health inequities.

In New Zealand, mental health problems are not only prevalent in young people, but also are largely untreated, with limited options particularly for Māori and Pacific young people (Clark et al., 2014) and a reluctance to seek support generally. This treatment gap is likely to be exacerbated by COVID-19, as with other disasters (Holmes et al., 2020). Two years following the 2010 Christchurch earthquakes, over a third of parents reported that their children were distressed and this remained the case four years later. Little is known about the response of children and adolescents to widespread illness and pandemics but early reports suggest there are increasing levels of psychosocial difficulties in young people.

To address challenges such as these, our team has had an ongoing programme of developing, testing and disseminating digital tools to support mental health for many years. Originally, we developed SPARX, an effective treatment for adolescent depression through a fantasy game format (Merry et al., 2012). SPARX is available free of charge nationally (https://www.sparx.org.nz/) and is now listed on the Ministry of Health site as a potentially useful mental health resource during the pandemic (https://www.health.govt.nz/our-work/diseases-and-conditions/covid-19-novel-coronavirus/covid-19-health-advice-public/covid-19-mental-health-and-wellbeing-resources).

The HABITs ecosystem

While SPARX is useful, it is a stand-alone intervention that only addresses depression, and has proved challenging to integrate into existing services and modify in response to changing technology. To address the range of mental health problems in young people, an agile system that allows for rapid development and iteration is required. This system would ideally include a portal to enable rapid deployment of clinical trials, and would provide interventions with different modes of delivery to match the diverse and continually shifting preferences of young people (Fleming et al., 2016).

To address these issues, we have been developing the HABITs (Health Advances through Behavioural Intervention Technologies) ecosystem. Designed for young people, their families and health workers, it seeks to be a trusted, ‘go-to’ place for digital mental health tools in New Zealand. With capacity for integration into schools and healthcare organisations in addition to open to access for all, HABITs is ideally placed to provide readily accessible help in the face of COVID-19. The HABITs ecosystem provides three distinct public health approaches (Warren, Hopkins, Leung, Hetrick, & Merry, 2020).

1. A safe and secure platform to host e-health interventions or behavioural intervention technologies (BITs), monitor their usage, track changes and provide data for future upgrades.
2. The ability to screen and identify users who might benefit from BITs and provide referral support for more urgent services if needed.
3. A digital testing centre to run online clinical trials to assess, randomise and monitor participants, while allowing for agile development and upgrades as new interventions emerge and technology changes.

An implementation trial of the HABITs ecosystem in schools is underway, but in the meantime, it has been
used to respond to the pandemic through rapid iteration and deployment of BITs via online open trials. Chatbot technology has been the most flexible through the authoring and reuse of text. Our content management system and graphical editing tool allows substantial direct content editing to present multimedia content and text (Holt-Quick et al., 2020).

Initially, a chatbot course called Headstrong, designed to increase resilience and emotional well-being in older adolescents, was adapted, then modified as a second efficacious chatbot course called ‘21-Day Stress Detox’, aimed at university students (Williams, 2020). In response to the COVID-19 pandemic, a third chatbot course called ‘Aroha’, addressing challenges young people might experience from the pandemic, was rapidly developed and launched. Iterative updates to Aroha have addressed feedback and included new content dealing with the secondary financial and social effects of the pandemic. In addition, improvements to the natural language understanding and personalisation of the chatbot interaction and the addition of Māori specific content have been possible. Aroha is listed with SPARX among available resources on the Ministry of Health website. As of September, there have been 313 active users with an average total duration of interaction of 14 min.

Another BIT hosted on the HABITs platform is ‘Quest - Te Whitianga’, an app to support emotional well-being. It was co-designed with Māori, Pacific and other young people aged 11-16 years. It uses an interactive, gamified interface with six modules based on evidence-based psychotherapies that incorporate Te Reo Māori language alongside Māori cultural values. The originally planned randomised controlled trial in schools in 2020 has proved impractical in the face of lockdowns so we are now conducting an open online trial to evaluate the app, recruiting from schools, when able, and through social media, online advertising and our community partners.

A parenting app, ‘Kākano’, was developed in response to the need to support parents of distressed 5- to 12-year-old children following the Christchurch earthquakes. The app, co-designed with parents and clinicians, comprises a 4-week programme to facilitate family resilience through goal setting and education via evidence-based parenting strategies. In a study promoted through schools, preliminary data analysis (paper in preparation) has shown a significant increase in parental confidence and well-being. We are exploring ways of making this app available across New Zealand to support parents during the pandemic.

The ‘digital divide’

Ensuring support is provided equitably across New Zealand is challenging, and the ‘digital divide’ threatens to extend the gap between those and those who have access to technology for educational (Hunia et al., 2020), and potentially mental health, outcomes. Easy access to reliable trusted digital mental health tools that can be used purely for self-help or can supplement other approaches provides a way forward but can also increase disparities for those communities already facing socioeconomic disadvantage, such as Māori and Pacific communities.

Conclusions

Although New Zealand has thus far fared better than many countries in the pandemic, children, young people and families are under considerable stress. There have been major impacts on the provision of already-stretched mental health services. Schools play a major supportive role for students but face a multitude of challenges with the pandemic and are increasingly under pressure to meet educational needs while managing online and face-to-face learning. An integrated ecosystem with a trusted online site offering proven tools for different user-groups seems a potentially robust method of delivery, and we have been able to use HABITs in this way despite it being a research tool at present. Our chatbot technology may be particularly well placed for rapid iteration including cultural responsiveness.

Key challenges include providing guidance to help navigate through the plethora of available online resources, which may not be evidence-based, and providing equitable access in the face of an increasing ‘digital divide’, with those families and young people most in need finding it difficult to afford or access useful technology. However, with change comes opportunity. Technology has a place in supporting mental health during the pandemic, but finding the ideal model for delivering digital interventions requires time and work. It is to be hoped that collaboration and sharing internationally will triumph over purely commercial and financial interests as we face this major challenge.

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Ethical approval

No ethical approval was required for this article.

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