Entry Title: ‘Inroads’ and ‘Re-Train Your Brain’: Innovative internet-delivered interventions to help young people who drink to cope with anxiety.

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TheMHS Early Career Research Award: Innovation

Part A

‘Inroads’ and ‘Re-Train Your Brain’: Innovative internet-delivered interventions to help young people who drink to cope with anxiety

Summary of entry (max. 150 words)
In consultation with young people, my early postdoctoral work focused on co-developing and trialling the ‘Inroads’ program; an internet-delivered Cognitive Behavioural Therapy-based early intervention for youth who drink to cope with anxiety. I have since conceptualised and led the development of the ‘Re-Train Your Brain’ intervention (with input from young people/clinicians); an online brain training program which targets subconscious mental habits known to contribute to the development and escalation of anxiety and alcohol use problems in young people. The intervention is currently being piloted as an adjunct to treatment as usual. These programs are innovative in that they i) are world-first integrated treatments for co-occurring disorders; ii) are delivered via the internet to overcome barriers to seeking help e.g. stigma, cost; iii) offer engaging, interactive features; and iv) target young people when symptoms first emerge to equip them with skills and strategies to prevent the trajectory into chronic, life-long disorders.

Organisation summary (max. 150 words)
The Matilda Centre for Research in Mental Health and Substance Use is a multidisciplinary research centre committed to improving the health and wellbeing of people affected by co-occurring substance use and mental disorders. Established in 2018 and based at the University of Sydney, the Matilda Centre aims to generate knowledge and innovative, evidence-based prevention, early intervention and treatment solutions to address substance use and mental disorders, which are currently the leading global causes of burden and disease. While the Matilda Centre covers the whole life course, a key focus of our research is on youth. The Centre works closely with research collaborators to share skills, synergise data and harness new technologies to develop and trial innovative interventions that will build the evidence-base for a thriving and empowered younger generation. The Centre also strives to engage with decision-makers and people with lived experience to enact real change and have long-lasting impact.
Part B

‘Inroads’ and ‘Re-Train Your Brain’: Innovative internet-delivered interventions to help young people who drink to cope with anxiety

Summary: Describe your research (max. 400 words)

Anxiety and alcohol use disorders are among the leading causes of death, disability, and injury during young adulthood, and concerningly, they frequently co-occur. When these problems co-exist, they fuel each other in a vicious cycle, resulting in more severe symptoms. Despite the profound impact of their co-occurrence, standard treatments typically address anxiety and alcohol use problems in isolation of one another, which hinders treatment effectiveness.

In response to this, I have been at the forefront of research developments to integrate evidence-based treatments for both anxiety and alcohol use problems among young adults, to maximise clinical outcomes and prevent symptoms from becoming chronic and entrenched disorder-level conditions later in life.

Making ‘Inroads’: A co-designed early intervention to interrupt the cycle of anxiety and alcohol use.

In consultation with young people and clinicians, my early postdoctoral work focused on co-developing and trialling the ‘Inroads’ program; an innovative, evidence-based Cognitive Behavioural Therapy-based intervention, to help young people who drink to cope with anxiety. Internet-delivery was adopted to enhance accessibility and circumvent common barriers to treatment seeking, such as perceived stigma, privacy concerns, time and cost constraints. Results indicated that the Inroads program significantly reduced harmful drinking (by ~62 standard drinks per month), binge-drinking (by ~4 sessions per month), and severity of anxiety over 6-months, compared to psychoeducation control condition. A freely accessible version of the effective program is now available: www.inroads.org.au

‘Re-Train Your Brain’: Enhancing treatment outcomes through Cognitive Bias Modification.

Concerningly, approximately 1 in 2 people who receive alcohol treatment relapse to heavy drinking within a year, and these rates are even higher for people with co-occurring anxiety. High relapse rates may in part be attributable to the effects that implicit cognitive biases (i.e., subconscious mental habits) have on anxious thoughts and the tendency to drink; factors not adequately addressed in current treatments. There are new cutting-edge treatment approaches known as Cognitive Bias Modification (i.e., brain training) that can dramatically reduce these rates, with only a few brief training sessions. While the evidence-base for the efficacy of this brain training is accumulating for singular disorders, its efficacy when delivered to people with co-occurring disorders is unknown. To address this, I co-developed the ‘Re-Train Your Brain’ program (with input from clinicians and youth with lived experience) for young people who experience anxiety and alcohol use problems. The program is currently being piloted as an adjunct to treatment as usual (e.g., Cognitive Behavioural Therapy).
Focus: Describe how your research illustrates Innovation (max. 200 words)

‘Inroads’ and ‘Re-Train Your Brain’ are innovative because they:

- **Are world-first integrated treatments:** Too often anxiety and alcohol use disorders are considered separate issues and are treated in isolation of one another. These world-first, integrated interventions sit at the cutting-edge of treatment development by addressing both anxiety and alcohol use, as well as the interconnections between them (e.g., drinking to cope), to improve youth wellbeing.

- **Utilise Internet delivery:** While integrated treatments are effective among people who make it to treatment, many people do not seek face-to-face help or experience long delays to doing so (up to 18 years). The Internet-delivered format of these programs overcomes some of the barriers to seeking help (e.g., stigma, privacy concerns, cost/time constraints), making them particularly appealing for youth. Internet-delivery also enables wide dissemination at minimal cost, including in rural/remote areas where support services are lacking.

- **Are focused on early intervention:** These programs provide a unique opportunity to intervene earlier, when symptoms are first emerging, to provide coping strategies and prevent anxiety and alcohol use from progressing into chronic, entrenched disorders in adulthood.

- **Offer engaging eHealth features:** To maximise engagement, the programs incorporate eHealth and gamification features, such as animations, sounds, point-scoring, videos/audio, and personalised feedback.

Potential Impact: Summarise the potential contribution to and/or implications for society (max. 200 words)

The ‘Inroads’ and ‘Re-Train Your Brain’ interventions capitalise on a limited window of opportunity to intervene early in young adulthood, during a high-risk developmental stage when symptoms first appear and begin to escalate. As such, they have potential to mitigate the short and long-term consequences of co-occurring anxiety and alcohol use problems, and prevent them from becoming deeply intertwined disorders later in life.

These interventions are also particularly timely and important at this current moment; in the wake of the COVID-19 pandemic (along with the bushfires, droughts, and floods), effective and broad-reaching interventions are critical to help overcome the increased incidence and severity of both anxiety and alcohol use problems. These novel, innovative, and evidence-based early interventions will play an important role in helping young people manage the increased stress, nervousness, and worry during these uncertain times, rather than turning to alcohol as a coping strategy.

Rigorously evaluated internet-delivered interventions, such as these, hold significant potential as cost-effective and scalable models of care, with no practical limit to the number of people who might benefit, including those in rural/remote areas. This will ensure maximum impact on mental health and alcohol use outcomes, while being easily accessible at a population level.
Consumers’ Contribution: Describe any contribution by Mental Health consumers/person with lived experience other than as subjects, e.g. reference group, researcher (max. 200 words)

To facilitate new discoveries and more effective treatments for anxiety and alcohol use problems, I have consulted extensively with young people who have lived experience of these issues. Both the ‘Inroads’ and ‘Re-Train Your Brain’ interventions were designed in consultation with their target age groups to maximise relevance and engagement. The co-design processes were iterative, with consultations for feedback at the design stage and then again for feedback on the prototype/beta versions of the programs. Additionally, health professionals with experience working with youth who experience anxiety and/or problematic alcohol use were consulted to assess barriers/enablers to real-world implementation, inform development considerations, and ensure the programs can eventually be successfully integrated into routine practice as either adjunct treatments or as part of stepped-care models.

The Inroads program was also recently updated to include content-related to COVID-19 and its associated changes in anxiety and drinking behaviours. To gain perspectives on youth-specific concerns related to the pandemic, a meeting was held with the Youth Advisory Board (YAB) of the PREMISE Research Centre of Excellence. The YAB members engaged in open-ended discussions around their concerns and also reviewed draft content to provide age-appropriate feedback and suggestions, which have since been incorporated into the program.
Supporting material

‘Inroads’ internet-delivered Cognitive Behavioural Therapy intervention for anxiety and alcohol use

Below are some screenshots from the Inroads program, depicting its contemporary web design, interactive features (e.g., quizzes, cartoon-style videos, audio), age-appropriate case vignettes, youth-focused illustrations, and online symptom monitoring to track progress.

![Inroads program homepage](image)

The Inroads program homepage, which use a journey theme, bright colours, point scoring and progress information to engage users.

![Anxiety and drinking levels](image)

A daily tracker of anxiety symptoms and drinking over the course of the program, to demonstrate how these problems are interlinked and allow clients to better ‘see’ their progress as they work through the online modules.

![Brief cartoon-style videos](image)

Brief cartoon-style videos to illustrate key skills that are taught over the 5 weeks.

Below is a visual depiction of the positive results of the Inroads intervention and the impact the program had on hazardous alcohol use, binge drinking and social anxiety over a 6-month period.

![Inroads trial results](image)

Inroads trial results at baseline, 2-month, and 6-month follow-up across outcomes
‘Re-Train Your Brain’ brain training intervention for anxiety and alcohol use

Below are several screenshots from the Re-Train Your Brain program, showing the appealing study website, elements of the psychoeducational module that is provided prior to brain training to increase motivation to train, and the online brain training tasks (which are repetitive reaction time-based cognitive tasks).

The Re-Train Your Brain homepage, which is visually engaging and age appropriate.

Interactive, goal-based & motivational questions to help young people identify what they hope to achieve by completing the program, to increase self-efficacy and reduce ambivalence about change.

Screenshot of the anxiety brain training component and point-scoring system to motivate more accurate responses with the completion of each subsequent training session.