Development of Virtual Metacognitive Training for Substance Use

Marisha Boyd*, Jane J. Kim*, Michael R. Krausz

Department of Psychiatry, Faculty of Medicine, University of British Columbia, Vancouver, Canada

Contact: marisha.boyd07@gmail.com

Background

Metacognitive Training (MCT) is a therapeutic approach that aims to provide insight on dysfunctional thought patterns and coping strategies to help individuals find beneficial alternatives through engagement through media and activities. These programs have been successful in altering negative thought patterns in people with anxiety, schizophrenia, depression and psychosis[1,2,3]. People with substance use disorders (SUD) often present with concurrent psychiatric disorders[2]. However, the unique cognitions and life experiences faced by people with SUD have not yet been addressed by a MCT program.

E-mental healthcare has shown to be effective at reducing symptoms of a range of psychiatric disorders, including SUD[4]. People with SUD often experience unmet healthcare needs and stigma in the healthcare system[5]. Creating a virtual MCT for Substance Use can be a low-barrier support for people who use drugs.

Objectives

- To develop a MCT guide for people with SUD that can be administered online and individually
- The MCT guide will:
  - Create understanding for dysfunctional thought patterns relating to substance use
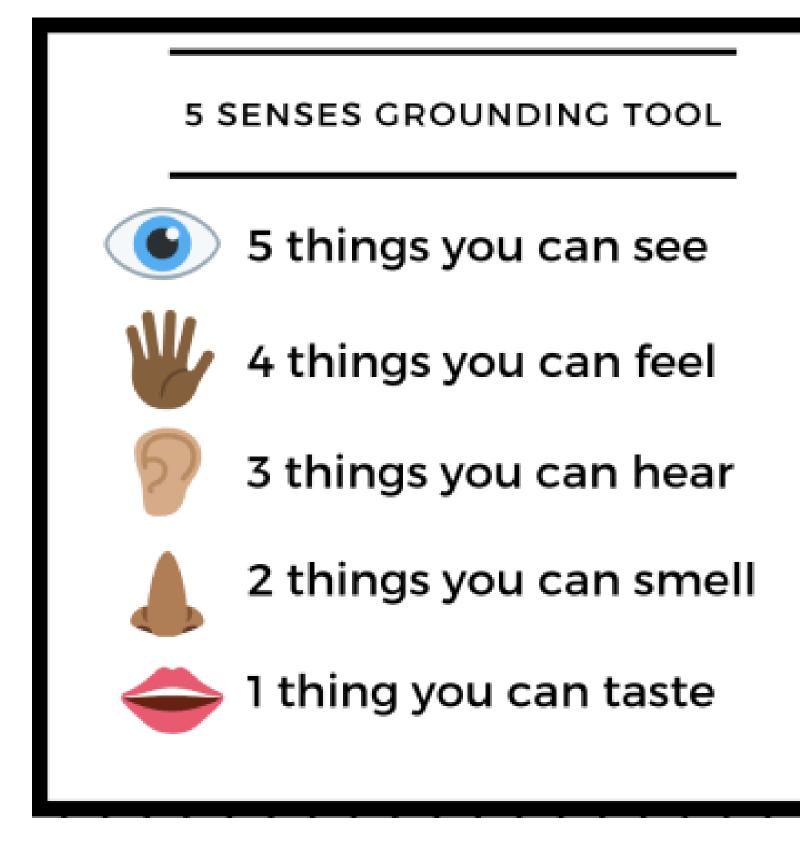 - Be engaging, interactive, and easy to follow

Population

People living with SUD often present with a concurrent disorder, most commonly mood/anxiety disorders[4]. We created content that was relevant to experiences and problems people living with SUD face. For example, they often face stigma from friends, community members and the healthcare system. We focused on creating content that would help people deal with stigma through communication techniques, while also using non-judgemental language. People living with SUD tend to blame themselves for perceived failures, while attributing their successes to outside factors[6]. We tailored the 'Explaining Situations' and 'Relapse' sections to help people understand how to attribute their successes and failures in a less biased manner.

Methods

This guide is being created based on the existing MCT frameworks for other populations and literature reviews. Majority of the content is based on MCT for Pathological Gambling, as these two populations have similar diagnostic features, such as difficulty in controlling their thoughts and altered executive functions. Several activities and psychoeducational sections were also inspired by MCT for Depression, such as those for self-esteem, cognition and attributional style.

Finally, the MCT+ for Psychosis is being used to develop a program for individuals. Existing MCT guides are designed for groups, so this will inform content creation designed for individual completion.

Unique experiences to SUDs are addressed through techniques derived from existing literature. An emphasis is placed on using language that is easily understandable for all levels of literacy and education to promote inclusion and facilitate comprehension.

Media is being developed based on MCT for Pathological Gambling and for Depression, as well as existing literature and e-mental health interventions. The guide will use fillable worksheets, images and videos with the goal of reducing the amount of text and engaging users.

Figure 1: Media example in Rumination section

Development

The MCT for Substance Use will comprise of the following sections:

Self-Esteem & Stigma: Improve self-esteem, understand common stigmas surrounding substance use and why they are unjustified, gain skills to combat stigma and low self-esteem

Explaining Situations: Understand how an individual can have a biased attributional style, how this can impact thought patterns and how attributional styles can be more balanced

Worrying & Strategies: Understand the consequences of rumination, gain control over your thoughts, learn strategies to reduce rumination

Attention & Thinking: Understand how different elements of cognition relate to substance use

Relapse: Understand how relapses occur, how to prevent a relapse and how to deal with triggers

Users will read a brief description of each section and choose to complete the section(s) that are most relevant to them. We are also considering creating a quiz that suggests sections to them based on their strengths and desired areas of improvement, as previous studies have shown benefits to users who complete even one MCT section[2].

Ex. Trigger management activities in Relapse section:
Exercise: Think of 3 triggers that could make you want to use substance(s) and how you can manage them.

Trigger: _____ & Management style: _____

When exposed to a trigger, completing the following functional analysis worksheet is a useful way to help fight cravings. This will help you think about the possible long-term consequences of substance use.

Figure 2: Functional Analysis Chart

Date	Trigger	What strategies did I use to prevent this from affecting my substance use?	Behaviour	Positive consequences	Negative consequences

Each section will include the following components:
- **Learning objectives:** Clearly outline the goals and content of the section
- **Psychoeducation:** Define terminology and introduce new concepts
- **How does this relate to substance use?:** Explain the link between the section topic and substance use
- **Activities:** Short, engaging activities that allow users to put these practices into action. Includes reflections, coping strategies and more

Future Directions

Future work will focus on adapting the MCT for Substance Use to online formats and conducting studies on its efficacy in reducing symptoms of SUD. This content will be integrated into the Risk Assessment and Management Platform, a Health Canada funded e-mental health platform designed for people who use drugs. Moreover, gamification elements, such as reminders and achievement badges, are being developed for the online format to further address patient retention.

References

1. Normann, N. & Morina, N. (2018). *Frontiers Psychology,* **9**:2211.
2. Kowalski, J., Pankowski, D., Lew-Starowicz, M., et al. (2017). *Psychosis,* **9**:3.
3. Naughton, M., Naulty, A., Abidin, Z., et al. (2012). *BMC Res Notes,* **5**:302.
4. Lal, S. & Adair, C. (2014). *Psychiatric Services,* **65**:24.
5. Khan, S. (2017). Statistics Canada Health Reports, Catalogue no. 82-003-X.
6. Heggeness, L.F., Lechner, W.V. & Ciesla, J.A. (2019). *Addictive Behaviours,* **89**:70.

Collaborators

Health Canada / Santé Canada

Clinical Neuropsychology Working Group
University Medical Center Hamburg-Eppendorf

THE UNIVERSITY OF BRITISH COLUMBIA
Addictions & Concurrent Disorders Research Group
Department of Psychiatry

minder
VIGO LAB | UBC