Knowledge Synthesis: COVID-19 Mental Health and Substance Use

*DRAFT*

Synthesis Title: Digital Health Solutions to Support Women with Addiction During COVID-19: Applying a Gender- and Trauma-Informed Lens

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Background and Rationale

Even prior to the declaration of the COVID-19 pandemic, evidence suggested that substance use and associated harms have been increasing in women. For example, alcohol and cannabis use have increased in women over the past decade (1), and most recent estimates suggest that 10% of women in Canada report dependence to illicit drugs (2). Substance use in women is strongly linked to mental health and physical health concerns (3-6). Societal costs associated with substance use in women are widespread, illustrated by growing hospitalizations due to substance use (7) and escalating loss in productivity, now estimated to be >$15 billion (8).

Despite these trends, women are generally underrepresented in treatment settings (9-10). Research has demonstrated that women experience specific barriers to care, from psychological barriers such as stigma and discrimination to practical barriers linked to caregiving roles and responsibilities, relationship abuse and violence, and more. Best practice guidelines have therefore supported gender- and trauma-informed treatment of addiction in women. Gender-informed practices include integrated approaches addressing a wide range of women's needs and are associated with improved recovery, parenting skills, and emotional health (11). Trauma-informed practices follow principles of trauma awareness/acknowledgment and are also associated with improved user experiences and clinical outcomes (12).

Notably, the gender- and trauma-informed practices that are most appropriate to women with substance use difficulties comprise integrated psychosocial interventions – a format of care that is limited during the COVID-19 pandemic. Similar to other healthcare settings, clinical settings serving women are increasingly turning to digital health solutions to provide support while physical distancing measures are in place. Digital health solutions may overcome several barriers to care experienced by women (13), and effectiveness studies have demonstrated greater engagement of women in digital health compared to in-person services (14).
In response to clinical promise and need, digital health solutions have been implemented rapidly since the onset of the COVID-19 pandemic. To date, most settings have yet to integrate digital health resources to facilitate the provision of gender- and trauma-informed care. Yet, digital health resources for women with addiction have been developed (15-16), and have been effective due to their unique ability to attend to gender-specific issues (17-18). Other resources appear promising and may be readily adapted to include gender- and trauma-informed content. As recently highlighted (19), there is no one digital health resource that is best for those seeking support – rather, the best resources are those that are best matched to specific settings, clinicians, patients, and their needs. The current synthesis therefore aimed to produce the following:

1. A rapid review of digital health resources for addiction in Canada, including their efficacy in patients who identify as women and/or who disclose a history of trauma

2. A rating of digital health resources for addiction in Canada, including the degree to which they incorporate principles of gender- and trauma-informed care

3. A series of recommendations for service development and implementation

**Approach**

This synthesis consisted of two components:

1. **Rapid Review:** The Rapid Review was conducted, informed by the recommendations of the Cochrane Rapid Reviews Methods Group as well as Arksey & O'Malley (2005), with modifications informed by the review of Tricco and colleagues (2015). More specifically, we conducted this Rapid Review by implementing the following steps:

   a) **Identifying research question(s)**
   
   The present review examined the evidence for the following research questions:
   
   1. What is the efficacy or effectiveness of web-based interventions for substance misuse (excluding caffeine and nicotine) for adults who identify as a female or woman?
   
   2. What is the efficacy or effectiveness of web-based interventions for substance misuse (excluding caffeine and nicotine) for adults who report a history of trauma?

   b) **Identifying relevant studies**
   
   The present review identified records with the following design features from PsycInfo and Grey Matters:
   
   1. Publication Language: English
   2. Publication Date: January 1, 2014 to present (date of initial extraction June 8, 2020)
   3. Publication Type: Original research only
      
      NOT dissertation, commentary, conference proceeding, letter, editorial)
   4. Study Sample:
      
      a. Adults ≥ 18 years of age or older
      
      b. Risky or harmful substance use (except nicotine or caffeine)
      
      c. Minimum 20% identify as female and/or woman OR

      d. Minimum 20% report a trauma history
   5. Intervention format: Web- or mobile-based; All durations and approaches included
   6. Intervention target: Substance use or substance use disorder symptoms
      
      NOT telephone, video, or text-based psychosocial intervention with health professional or peer
      
      NOT social networking/platform (e.g., discussion boards)
   7. Comparison/control: A comparison or control group was not required.
   8. Setting: All (e.g., healthcare, forensic, educational)
9. Design: All prospective designs (e.g., single vs. multiple arms; augmentation vs. stand-alone intervention)
10. Outcomes: Substance use or substance use disorder symptoms

c) Study selection
Three research team members carried out the following steps:
   1. Identified all possible records
   2. Screened titles and abstracts of all unique records
   3. Conducted full text reviews for all records not excluded during Step 2, applying a checklist of eligibility criteria

Note: Three team members completed title and abstract screening independently for 50 articles to ensure agreement in application of eligibility criteria.

d) Data charting
The following data are summarized in the Figures below:
   • Target addiction (e.g., substance category)
   • Sample features (e.g., age, sex, nature)
   • Design features (e.g., setting, practitioner type)
   • Intervention (e.g., name of intervention, nature of intervention/control, duration)
   • Outcomes (e.g., intervention effective, sex/gender-based analyses conducted)

Future Directions: To increase the comprehensiveness and rigor of this review, this initial Rapid Review will be expanded to a Scoping Review, including at least 2 further databases and additional grey literature; two independent team members selecting records and extracting data; and full rating of study risk of bias.

2. Resource Rating: The rating of digital health resources was conducted following a series of steps.
   a) Resource Identification
Research team members identified digital health resources from the following resources:
   • Rapid Review
   • Hospital websites (e.g., www.camh.ca)
   • Professional, not-for-profit, and other websites (e.g., www.cmha.ca, www.otn.ca, www.amho.ca)
   • Government websites
   • Curated app libraries

Digital health resources were required to meet the following criteria:
   • Web- or mobile-based
   • Available in Canada
   • Comprise 2 or more psychological and educational components including:
     o Self-assessment
     o Monitoring
     o Psychoeducation
     o Personalized Feedback
     o Motivational enhancement
     o Goal setting
o Cognitive interventions
o Behavioural interventions

Note: Stand-alone psychoeducational materials with no active engagement or interactivity (e.g., information sheets, infographics, videos) were not rated at this time.

b) Rating Scale Development
Research Team members identified 36 items to assess whether digital health resources were characterized by the following principles of gender- and trauma-informed care:

**Gender Informed Care Principles**
- Consider different roles, responsibilities, and needs of gender groups
- Recognize gender fluidity
- Incorporate intersectionality
- Challenge gender power imbalances and negative stereotypes
- Include sex-informed and gender-specific information and approaches
- Support empowerment
- Improve gender equity

**Trauma Informed Care Principles**
- Trauma awareness and acknowledgement
- Safety & trustworthiness
- Choice, control, & collaboration
- Strengths-based and skills-building care & empowerment
- Cultural, historical, and gender issues

c) Rating Scale Implementation
Research team members independently responded to rating questions, and rated each resource. Question responses and ratings will be reviewed by the investigator team; discrepancies will be resolved by consensus. All resources will be finally provided overall ratings for the presence of both evidence of effectiveness or efficacy in adults who identify as female or woman, or who endorse a history of trauma, and consistency with principles of gender- and trauma-informed care.

Future Directions: Additional resources will be identified during our Knowledge User Needs Assessment. To increase the comprehensiveness and rigor of this review, this rating scheme will be independently reviewed, and all resources will be rated independently by two members. Knowledge User Needs Assessment feedback will inform the communication of qualitative and quantitative components of this review.

Initial Findings
- See Figures 1-3 for Rapid Review Initial Findings. The majority of digital health resources for addiction identified in the academic literature were in one of three formats: mobile monitoring applications, web-based or mobile screening and brief interventions, and web-based multimedia and multi-module intervention platforms.
- Empirical investigations including adults who identified as female or women generally revealed positive effects. Specifically, monitoring applications and web-based platforms consistently demonstrated therapeutic benefits; more mixed results were found for the efficacy of web-based or mobile-based brief interventions.
• A substantial proportion of investigations did not conduct sex- or gender-based analyses, precluding inferences about the evidence for the efficacy or effectiveness of these interventions in females or women specifically.
• Some promising interventions were designed specifically for women, although these have limited evaluation in Canada specifically. Indeed, of the 91 records identified, only two were conducted in Canada.
• Empirical investigations including adults who identified a history of trauma were more limited (8% of identified records), and generally focussed upon special populations.
• See Tables 1 and 2 for Resource Rating Initial Findings. The majority of digital health resources for addiction identified in Canadian resources reflected the same formats.
• Preliminary resource ratings suggested that these resources provide sex or gender specific information, and support empowerment at least to some degree; however, the majority of the principles of gender-informed care are not evident in these resources. Preliminary resource ratings suggested that these resources uphold several principles of trauma informed care (relevant to safety and trustworthiness, choice, control, and collaboration, and strength-based and skills-building care and empowerment). However, other principles of trauma-informed care were less robustly represented.

Conclusion
The current project represents a rapid synthesis of available evidence for digital health resources for women with addiction in Canada. This synthesis simultaneously provides promising initial support for the therapeutic benefit of digital health resources for addiction in adults who identify as female or woman, while also highlighting the following critical clinical and research priorities:
(1) Increased sex- and gender-based analysis in empirical investigations of digital health resources
(2) Further research on the efficacy and effectiveness of digital health resources for addiction in women in Canada specifically
(3) Innovative digital health solutions incorporating the principles of gender- and trauma-informed care that are not represented in currently available resources
References


Figure 1. PRISMA 2009 Flow Diagram

**PRISMA 2009 Flow Diagram**

- Records identified through database searching (n = 1895)
- Additional records identified through other sources (n = 0)
- Records after duplicates removed (n = 1895)
- Records screened (n = 1895)
- Records excluded (n = 1675)
- Full-text articles assessed for eligibility (n = 220)
  - Full-text articles excluded (n = 129)
    - 10 Design not prospective
    - 5 Not published in English
    - 3 Not original research
    - 12 Sample not adults
    - 7 Sample not women/female/trauma
    - 44 Intervention not web-based
    - 18 Intervention target not substance use/harms
    - 20 Outcomes not substance use/harms
    - 10 Other
- Studies included in qualitative synthesis (n=91)
Figure 2. Rapid Review: Preliminary Results

a) Study Origin & Design

**Country of Study**
- USA: 67%
- EU: 18%
- Australia & NZ: 7%
- UK: 3%
- Asia: 2%
- Canada: 1%
- South America: 2%

**Nature of Sample**
- University/College: 41%
- Community: 25%
- Clinical: 20%
- Veterans: 4%
- Forensic: 3%
- Other: 7%
b) Intervention Features

**Intervention: Language**
- 81% English
- 5% Swedish
- 3% German
- 2% Dutch
- 2% Norwegian
- 2% French
- 2% Not stated
- 3% Other

**Intervention: Nature**
- 41% Web-based Platforms
- 41% Brief Interventions
- 14% Mobile Applications
- 4% Web-based Platforms + Mobile

**Intervention: Target Substance**
- 63% Alcohol
- 16% All Substances
- 11% Cannabis
- 2% Opioid
- 1% Cocaine
- 4% Amphetamine
- 1% Heroin
c) Investigations Incorporating Trauma

- >20% women only: 92%
- >20% trauma only: 3%
- >20% women & >20% trauma both: 5%

Effectiveness of Intervention in Females/Women

- Yes: 41%
- No: 37%
- unknown: 22%
Table 1. Resources Identified

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<thead>
<tr>
<th>Resource Name</th>
<th>Resource Type</th>
<th>Platform</th>
<th>Status</th>
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<td>Intervention</td>
<td>Web-based</td>
<td>Rating #1 Complete</td>
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<td>Monitoring</td>
<td>Mobile app</td>
<td>Rating #1 Complete</td>
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<td>Daybreak</td>
<td>Intervention</td>
<td>Mobile app</td>
<td>Rating #1 Complete</td>
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<td>CheckUp &amp; Choices</td>
<td>Intervention</td>
<td>Mobile app</td>
<td>Rating #1 Complete</td>
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<td>SoberTool</td>
<td>Intervention</td>
<td>Web-based; mobile app</td>
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Table 2. Resource Rating

**Gender Informed-Care Principles:**

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<th>Consider roles, responsibilities &amp; needs of gender groups</th>
<th>Recognize gender fluidity</th>
<th>Incorporate Intersectionality</th>
<th>Challenge gender imbalances &amp; stereotypes</th>
<th>Include sex- &amp; gender-specific information &amp; approaches</th>
<th>Support empowerment</th>
<th>Improve gender equity</th>
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### Trauma Informed-Care Principles:

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**Rating Scale:**
- Very Strong
- Strong
- Somewhat strong
- Not very strong
- Not strong at all
- N/A

BFO – Breaking Free Online
CBT4CBT – Computer Based Training for Cognitive Behavioural Therapy
E-CHUG – Alcohol eCheckUp To Go
E-TOKE – Electronic THC Online Knowledge Experience
GIC – Gender-Informed Care
TIC – Trauma-Informed Care