User Engagement with Technology-Mediated Self-guided Interventions for Addictions Preregistered Scoping Review Protocol

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Timeline

- Start date: March 2022
- End date (approx.): February 2023

State of review

The search strategy and review manual were developed in March 2022, and the search was conducted on March 19, 2022. Title and abstract screening began in May 2022. The full text review eligibility criteria will be piloted following title and abstract screening to test criteria and reviewer agreement on the first 20 articles. The protocol manuscript was submitted for publication in May 2022 and is currently undergoing revisions.

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Aims

The primary objective of the current scoping review is to explore how technology-mediated self-guided interventions (TMSGIs) for addictions have been used with an emphasis on technical and logistical features that facilitate treatment engagement or adherence. The findings will be synthesized and used to guide recommendations for the development of TMSGIs for addictive disorders.

Research questions

- What types of TMSGIs for addiction-related concerns exist?
- What impact do various technical and logistical features of TMSGIs have on user engagement?

Seed papers

- Gustafson et al. (2014): Alcohol
- Merkouris et al. (2020): Gambling
- Free et al. (2009): Smoking
- Dulin & Gonzalez (2017): Alcohol
- Hodgins et al. (2019): Gambling

Search strategy

The following search terms were selected for PsycINFO and adapted as appropriate to other databases (Embase, MEDLINE, and CINAHL).

Addictive substances and behaviours:
(addicti* or substance or drug* or prescription drug* or opioid* or opiate* or narcotic* or heroin or morphine or alcohol* or drink* or cannabis or marijuana or tobacco or nicotine or cigar* or smok* or vap* or cocaine or crack or crack-cocaine or meth or methamphetamine* or amphetamine* or crystal meth* or stimulant* or caffeine or LSD or hallucinogen* or psilocybin or phencyclidine or inhalant* or gaming or video gam* or gambl* or eat* or overeat* or food or sedative* or anxiolytic* or hypnotic* or benzo* or ketamine or overwork* or sex* or internet or Internet or porn* or social media or Facebook) adj2 (addict* or dependen* or behav* or consum* or abus* or misus* or use* or using or inject* or heavy or compuls* or impuls* or bing* or excess* or frequen* or sever* or daily or risky or cessat* or reduc* or abstain* or abstin* or quit* or recover* or disorder* or urge* or crav* or problem* or patholog* or comorbid* or subthreshold or subclinical or concurrent)

Technology-mediated interventions:
(interven* or assess* or prevent* or treat* or therap* or self-help or self-direct* or self-guide* or workbook* or program* or support or guided) adj2 (technolog* or internet* or Internet* or computer* or online* or virtual* or digital* or mobile* or smartphone* or phone* or app or apps or text* or e-health or m-health or eHealth or mHealth or ecological or ambulatory or just-in-time or adaptive or naturalistic or handheld or web*)

Search results

The following search was conducted by author BWB in PsycINFO (Ovid) on March 19, 2022.

Search number	Concept	Number of hits
1	Addictive substances and behaviours	420,142
2	Technology-mediated interventions	42,036
3	1 and 2	6,476

The following search was conducted by author BWB in Embase (Ovid) on March 19, 2022.

Search number	Concept	Number of hits
1	Addictive substances and behaviours	1,136,571
2	Technology-mediated interventions	135,104
3	1 and 2	11,906

The following search was conducted by author BWB in MEDLINE (Ovid) on March 19, 2022.

Search number	Concept	Number of hits
1	Addictive substances and behaviours	842,291
2	Technology-mediated interventions	104,342
3	1 and 2	9,225

The following search was conducted by author BWB in CINAHL (EBSCO) on March 19, 2022.

Search number	Concept	Number of hits
1	Addictive substances and behaviours and technology-mediated interventions	6,562

The articles from each database were imported to Covidence and duplicates were automatically removed. In total, 34,169 articles were imported, 16,111 duplicates were removed, and 18,058 articles were yielded for title and abstract screening. Additional manual searches were conducted on April 5, 2022, and 4 articles were added for screening to yield a total of 18,062 articles.

Screening and review procedures

Two independent reviewers (volunteers NS and CP) will screen article titles and abstracts during the initial screening phase for eligibility. No reason for exclusion at this stage will need to be indicated as only the clearly irrelevant articles will be removed. After this stage, the same two reviewers will conduct full text reviews of the remaining articles. Reasons for exclusion will be selected in accordance with the "eligibility criteria for full text review" as defined below. Only the first listed reason will be indicated for each excluded article during this stage even when multiple reasons could be selected. Disagreements during screening and full text review will be resolved by consulting a third reviewer (author BWB) until consensus is achieved. Articles will be screened using the program Covidence. The review manual contains specific instructions to be provided to independent reviewers for the purposes of screening and full text review.

Eligibility criteria: Title and abstract screening

- There must be some reference to one or more problems with substance use (e.g., smoking), behavioural addictions (e.g., gambling), excessive behaviours (e.g., overeating), or aspects thereof (e.g., cravings, triggers, coping skills, mindfulness); other mental/physical health problems may be targeted as well but not be the primary focus.
- There must be some reference to technology as a means to provide non-pharmaceutical support, education, prevention, assessment, or intervention for the problem as defined above. The hardware should be such that it could be privately owned, accessed, or operated (e.g., phone, watch, tablet, sensor, computer, laptop, handheld device) and not something exclusive to professional settings (e.g., fMRI, other medical equipment).
- The study should focus on human behaviour, cognition, emotion, motivation, or other psychological construct (i.e., not animal studies, genetic studies, pharmaceutical drug development, cardiac health, etc.).
- The study should be reported in English.

Eligibility criteria: Full text review

- <u>Study 1:</u> The article is not an evidence synthesis (i.e., scoping review, systematic review, meta-analysis).
- <u>Study 2:</u> The article is based on more than one or few individuals (i.e., not a case study, case report, case series, N=1 study, etc.).
- <u>Study 3:</u> The article is based on an original empirical study or existing empirical data.
- <u>Study 4:</u> The article is not solely qualitative in its approach and analysis.
- <u>Sample 1:</u> The sample contains mostly adults or adolescents aged 16 or greater.
- <u>Sample 2:</u> The sample presents with one or more problems with addiction, substance use, excessive behaviour, or aspect thereof (e.g., cravings, urges).
- <u>Intervention 1:</u> The intervention is at least partially delivered via technology (e.g., smartphone application, automated text message, internet workbook, digital diary).
- <u>Intervention 2:</u> The intervention is at least partially delivered without professional, clinical, social, or technical support.
- <u>Intervention 3:</u> The intervention is primarily non-pharmaceutical in approach (i.e., focus on cognitive, behavioural, emotional, or other non-medical changes).
- <u>Outcome 1:</u> The study measures and reports on at least one measure of the problem as defined above (e.g., frequency, severity, amount of use/consumption) with respect to intervention outcomes.
- <u>Outcome 2:</u> The study measures and reports findings related to participant engagement, adherence, or subjective experience (e.g., quality ratings, time spent with intervention, number of logins, number of modules completed, proportion of participants that completed treatment).
- <u>Duplication 1:</u> If not a unique sample, the article reports the version of the study with the longest follow-up time period.

Data extraction

The following data will be extracted from each eligible article:
- Reference type (e.g., peer-reviewed article, preprint)
- Year of publication
- Country or location
- Research objectives defined by the authors
- Research design (e.g., two-arm randomized controlled trial)
- Sample information (i.e., sample size, eligibility criteria, mean age, proportion female, mode ethnicity, proportion mode ethnicity, addictions/behaviours of interest, and treatment status)
- Intervention context/setting, independence/augmentation, theoretical orientation, content, features, software, and operating system
- Addiction-related measures, outcomes, and results.
- Engagement-related measures, outcomes, and results.
- Reported study limitations, conclusions, and recommendations.
- Additional study limitations and conclusions.

Data synthesis

A descriptive overview of the review findings will be provided in tabular and graphical forms as appropriate with an emphasis on intervention features that facilitate engagement and adherence. Narrative summaries will be provided alongside tables and graphics and directly reflect the information extracted from eligible articles. Important discrepancies in operational definitions will be highlighted (e.g., differences in conceptualization of ecological interventions or addictions) and a concept map will be proposed. Recommendations will be derived based on the review findings to guide future research on the development and provision of technology-mediated ecological momentary interventions for addictions.

References

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