

Evaluating the Safety and Efficacy of Mental Health Apps for Patients on Waiting Lists

Prepared for
Suicide Prevention Community Council of
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Introduction

Context

This report has been prepared by Research Associates from the McMaster Research Shop at the request of the Suicide Prevention Community Council of Hamilton (SPCCH). The SPCCH is exploring interventions to support those in acute mental health crises often on long waiting lists for mental health treatment. They see the potential for mental health apps on smartphones to provide accessible and effective support, but it's unclear which smartphone apps (if any) are considered safe and effective, as judged by mental health professionals. As such, this research intended to evaluate existing (and prominent) mental health apps to propose a shortlist of apps to patients at risk of suicide and waiting to be seen clinically.

Scope

This report draws on academic and grey literature about existing mental health apps and evaluative frameworks from largely Canadian and American contexts to offer an evidence-based starting point for app evaluation. It also draws on the clinical expertise of two key informants to support the development of evaluation criteria and an overall understanding of both the opportunities and challenges for mental health apps in the treatment and management of diverse mental health concerns.

Report Structure

The report is organized in the following way:

- **Background**: This section summarizes our review of literature around the case for smartphone mental health apps and the purported gaps in what they offer.
- **Phase 1 Findings**: This section summarizes the insights provided by experts in the field and peer-reviewed literature concerning mental health app effectiveness and evaluation.
- **Phase 2 Findings**: This section includes our selected assessment criteria, methodology for evaluation and a list of apps meeting a threshold of evaluative criteria.
- **Discussion**: This section summarizes our approach, findings, and potential ways to mobilize the report knowledge.

Background

Why Smartphone Mental Health Apps?

A recent market report highlights the increased uptake and projected future growth of the mental health app market (Grand View Research, Inc, 2023), tied to the COVID-19 pandemic and increased awareness of mental health issues. For instance, mental health app downloads in the UK increased by around 200% from the summer of 2019 to summer of 2020. The growing popularity of smartphone mental health apps is attributed to their ability to address several critical needs in mental health care. One of the appeals of mental health apps is their accessibility, allowing users to access mental health resources anytime and anywhere, which is particularly beneficial for those living in rural areas (far away from most mental health offices) or busy schedules (Torous et al., 2019). Another appeal is that users can access treatment anonymously, which, for some, circumvents the stigma associated with seeking help for mental health issues (Bakker et al., 2018). Additionally, many of these apps are low-cost or free, making them more financially viable than traditional therapy, especially for those lacking comprehensive coverage (Hwang & Jo, 2019). These apps often include self-management tools like mood tracking and stress management techniques, empowering users to actively manage their mental health and promoting self-awareness (Donker et al., 2013). Furthermore, they can serve as valuable supplements to traditional therapy¹, providing additional self-guided resources and support. The potential integration of emerging technologies such as artificial intelligence into mental apps offers personalized and adaptive support, enhancing the user experience by tailoring interventions to individual needs (Weisel et al., 2019).

The Current Gap in Smartphone Mental Health App Service Offerings

Despite the growing popularity of smartphone mental health apps, healthcare professionals and researchers have identified significant gaps in the service offerings and support capacities of mental health apps (Kahane, François, & Torous, 2021). One of the primary concerns is the lack of evidence-based content in many of these apps. A substantial number of smartphone mental health apps have never been scientifically evaluated to determine their effectiveness (Donker et al., 2013; Weisel et al., 2019). For instance, a recent large-scale review study highlights that, despite there being hundreds of mental health apps on the market, only 19 had high-quality clinical trials evaluating their effectiveness (Weisel et al., 2019). Moreover, while the studies showed significant improvements for certain mental health conditions like depression and smoking addiction when pooled together, the individual effectiveness of apps varied greatly. The same study additionally found no significant effect among apps targeting suicide ideation or self-injury.

Another significant gap is the limited regulatory oversight in the digital health app market. This lack of oversight leads to concerns regarding privacy, data security, and the overall quality of the apps (Grist, Porter, & Stallard, 2017). This concern is echoed in

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Melcher and Torous's study, which highlights substantial gaps in privacy protection and a lack of evidence-based effectiveness in mental health apps, particularly in college settings, emphasizing the need for improved quality assurance (Melcher & Torous, 2020). Furthermore, while mental health apps are generally accessible, issues related to usability, such as user-friendly interfaces and language barriers, can limit their effectiveness for diverse populations.

Do Apps Have the Capacity for Crisis Support?

While many apps offer tools for self-management of chronic mental health conditions, such as mood tracking and stress management techniques, Weisel et al. (2019) suggests their ability to provide adequate crisis intervention resources is limited, which is crucial for individuals at risk of suicide. The integration of professional guidance in mental health apps is also limited, which is a significant gap for those requiring expert intervention (Hwang & Jo, 2019).

Ultimately, while mental health apps offer significant theoretical benefits, significant gaps in evidence-based content, personalization, regulatory oversight, and integration with healthcare systems means they cannot *in general* be recommended for treating mental health conditions, let alone for those in acute crises/ at risk of suicide. This led us to research further into clinical and literary insights around the effectiveness of individual apps, the criteria for evaluating individual apps, as well as general key informant perspectives on the use of mental health apps in healthcare settings.

Phase 1: Setting the Stage for App Evaluation

Overview

In Phase 1 of our research, we reviewed scientific literature relating to smartphone mental health apps and evaluation criteria. Our review was driven by two questions: 1) Are there any previously studied smartphone mental health apps potentially suitable for crisis intervention? 2) Are there any relevant and evidence-based evaluation criteria used to evaluate mental health apps? For question 1, we consulted academic databases, mental health organizational websites and the resource sections of community health websites. We also consulted a webinar and handout resource shared by one of our key informants on the topic of mental health app evaluation (Appendix C). We searched apps that were: free (or had free versions), apps suitable/developed for a Canadian jurisdiction, exclusively phone apps, apps developed within the past 5 years or that have been updated consistently and apps with treatment capabilities for those at risk of suicide. For question 2, we consulted academic journals and publications, as well as peer-reviewed sources. Our search was not fully comprehensive and was only meant as a starting point for our app evaluation process.

To supplement the literature review, we also consulted with experts in mental health and psychiatry. The interviews with two key informants offered a valuable clinical perspective on the utilization of mental health apps by individuals on waiting lists. Our aim was to synthesize these insights to understand better the opportunities and limitations of smartphone apps in the context of acute mental health crisis care and to understand how these insights could inform our mental health app evaluation.

Literature Review Findings

Previously Studied Mental Health Apps

Searching the literature, we found several apps for crisis support that had been independently evaluated. However, These apps include: “Hope” by the Canadian Association of Mental Health (CAMH) (Hope, n.d.), “Virtual Hope Box” (Virtual, 2018), “Suicide Safety Plan,” (Dealing, n.d.) and the “LifeLine App,” (Bos, n.d.) which is referred to as Canada’s app for the awareness national suicide prevention (Lifeline Canada Foundation, n.d.). While some of these apps were highlighted as having extensive evidence, most were evaluated with different methods, making them difficult to compare. LifeLine App lacked a working version of an app and therefore was excluded from evaluation. Suicide Safety Plan was not suitable for a Canadian jurisdiction and was also excluded from evaluation. Finally, Virtual Hope Box was excluded from our evaluation as it was developed more than 5 years ago.

Moreover, we came across a large mental health app database known as “MIND,” which uses the American Psychological Association’s (APA) app evaluation model to critically appraise and organize apps based on their promoted features (Mobile, 2020). We found one unique app, “Better Stop Suicide,” to add to our list of promising apps for crisis intervention.

Finally, reviewing the presentation handout from one of our key informants (Appendix C “Mental Health: Is there an app for that?”, March 2023), we found additional apps for consideration. These apps did not strictly align with our predefined inclusion/exclusion criteria, particularly apps designed exclusively for crisis intervention. In discussion with our community partner, we chose to include these apps in our evaluation given that they have already undergone vetting by one of our key informants and because they may still contain features useful for those at-risk of suicide. Some of the apps we included were: MindBeacon, MindShift CBT, MoodMission, Headspace, Calm, Bearable, Telus Health CBT, BeSafe and PocketWell.

Existing Evidence-Based Criteria for Mental Health App Evaluation

To inform our app evaluation, we performed a brief review of evaluation approaches.

The most effective evaluation approach is experimental. For instance, one way to evaluate mental health app effectiveness is to compare pre- and post- measurements of mental health symptoms. This means that researchers assess user symptoms and experiences before using the application and then assess them again after using the app for a prescribed time. To do this, surveys and scales like the State-Trait Anxiety inventory and the Pittsburgh Sleep Quality Index have been used (Lee et al., 2018).

We did not have the time or resources to evaluate apps using an experimental design. Rather, we looked for evaluation frameworks that use pre-existing information about the apps. On digging into the literature, we were able to identify a few promising evaluation frameworks. One such framework was the American Psychiatric Association's Mental Health Evaluation Framework. This framework was developed by an expert panel and consists of five general levels that assess an application's efficacy. These levels include the accessibility and background, privacy and security, clinical foundation, engagement style, and therapeutic goal of the application (Lagan et al., 2021). Separate from this framework, the Mobile App Rating Scale (MARS) also proved to be a common evaluation tool (Wu et al., 2022). MARS is a validated scale that works to assess the engagement, functionality, aesthetics, information quality, and subjective quality of an application. Our issue with these frameworks is that they were developed with an international and American lens in place. So, our team searched for evaluation frameworks with a Canadian lens.

On further review, our team discovered the Mental Health Commission of Canada and Canadian Institutes of Health Research's Mental Health Application Framework (Mental Health Commission of Canada, 2016). This framework was developed with a diverse group of stakeholders and employs a range of criteria that addresses major concerns with mental health apps, such as their user-friendliness, effectiveness, and data sharing/security. We ended up using this framework in our app evaluation.

It is important to note that at the time of our research we were made aware of and used the 2016 version of this framework to complete our evaluation of apps. However, toward the end of our project, we were made aware of an updated 2023 version of the Mental Health Commission of Canada's framework. The 2023 version of the framework is similar, though goes above and beyond the 2016 version to include standards (a specific, focused area or topic), criteria (carefully chosen principles within each topic that apps are assessed against), and criteria questions (questions evaluating each principle). Although comprehensive, standards such as Clinical Safety and Technical Security included technical criteria and questions that appear to be suited for a specialized audience in evaluating mental health apps (such as clinicians or software developers). Therefore, we chose to use the 2016 version of the evaluation framework as it included the same key elements but did not require a technical or expert level

understanding of topics within each criterion. We recognize that this work represents a point-in-time assessment, and that apps & frameworks will inevitably change. The purpose of our evaluation was to shed light on the existence of such frameworks and demonstrating how to use them such that they can be mobilized by practitioners and mental health advocates to help people select the best apps for their situation or level of mental health distress.

Key Informant Interviews

We conducted interviews with two key informants in the field of mental health and psychiatric evaluation for a clinical perspective on mental health app evaluation. Our questions largely focused on the appropriateness of using the technology in mental health treatment (see Appendix A for our interview guide). Key informant A is a professor of Psychiatry and Behavioural Neurosciences within the Faculty of Health Sciences at McMaster University. They are also a Consultation-Liaison Psychiatrist within the Hamilton Health Sciences and is an expert in the design, implementation and evaluation of technology-enhanced learning and performance. Key informant B is another professor of Psychiatry and Behavioural Neurosciences within the Faculty of Health Sciences at McMaster University. Overall, the interviews featured diverging perspectives – both opportunities and challenges/ limitations with using mental health apps for certain groups.

Opportunities

Immediate Support

Key informant A emphasized that mental health apps can offer immediate support to those struggling with a mental health condition. They suggest that these apps provide on-demand access to mental health resources, a feature he finds particularly valuable for individuals on waiting lists for professional care. According to key informant A, this immediacy can be lifesaving in situations where delayed access to mental health services poses a significant risk. Key informant B, while not specifically addressing this point, also acknowledges the overall benefits of mental health apps in a similar context. Key informant B observed, "The evidence is mixed, especially for suicide prevention ... what would be useful for people when they couldn't access care".

Diverse Functionalities

Key informant A and B both highlight the diverse functionalities of mental health apps as a significant advantage. Key informant A points out that features like mood tracking and crisis management cater to a broad range of mental health needs. He emphasizes that these functionalities are not solely for providing immediate relief but also for

empowering users to actively engage in their mental health management. They also believe this engagement is essential in fostering a sense of control and resilience among users, potentially leading to long-term positive impacts on their mental well-being. Similarly, key informant B acknowledges the value of these apps in offering coping skills strategies and wellness resources, contributing to overall mental health management. Key informant B mentioned, "Preventative linking supports crisis resources ... basic strategies like soothing/distracting techniques" are important in mental health apps.

Customization and Personalization

Key informant B recognizes the customization and personalization capabilities of mental health apps as essential features, although his emphasis is on different aspects of these tools. The ability to tailor the app experience to individual user needs and preferences is seen as a key strength, offering more targeted and effective support. This is crucial in mental health care, given the significant variation in individual experiences and needs. While key informant B did not specifically address the adaptation of apps to symptoms or user feedback, he acknowledges the overall benefits of mental health apps. Key informant A also shares this view, highlighting the importance of customization and personalization in enhancing the effectiveness of these apps, thereby complementing traditional care methods.

Continuous Care

Lastly, both key informant A and B note the potential of mental health apps in providing continuous care. Key informant A emphasizes that by offering ongoing support and resources, these apps can effectively bridge the gap between sporadic professional consultations. They highlight the importance of ensuring that individuals have access to mental health support whenever they need it. Similarly, key informant B acknowledges the benefits of continuous care, emphasizing its role in maintaining and enhancing mental health over time. According to both informants, this model provides a stable and accessible resource for users, which is particularly beneficial in the context of mental health care.

Challenges and Limitations

Suitability for Crisis Intervention

A primary concern, highlighted by key informant A, is the suitability of apps for various mental health situations. Key informant A highlighted that app recommendations must consider a patient's *risk level*. For example, a mindfulness app or app offering meditative tools may not be appropriate for individuals experiencing suicidal ideation or who are in acute crisis. This key informant suggested there's likely a subset of patients where mental health apps are not a suitable intervention or would otherwise play a very

small role in their support. Similarly, there exists individuals who would benefit greatly from a mental health app as a preventative measure, and it could mitigate a future crisis.

In this vein, key informant A highlighted that mental health apps should be “used as a tool, and not a standalone solution or replacement for clinical guidance”. They also discussed the role of mental health apps in a continuum of care according to the severity of a patient’s symptoms. The key informant mentioned that the model used to represent this continuum is called a “stepped-care model,” which requires clinical judgement and monitoring. We ended up incorporating this model into our investigation, which we’ll review later.

App Quality and Evidence

Key informant A points out that the variability in the quality of mental health apps is a significant issue. He observes that the market is saturated with numerous apps, each claiming various benefits, but the quality, effectiveness, and user-friendliness of these apps can vary dramatically. This, according to key informant A, poses a challenge for healthcare providers and users in identifying and choosing the most suitable apps. He also notes that the lack of standardization in app development and evaluation exacerbates this problem, leading to a fragmented landscape where the efficacy of many apps remains unverified. Key informant B echoes these concerns, emphasizing the difficulty in applying a single, standardized evaluative framework for all apps due to the broad spectrum of mental health conditions and diagnoses, and the consequent challenge in ensuring effective selection and use.

Privacy and Data Security

Both key informant A and B have expressed major concerns regarding user privacy and data security in the context of mental health apps. They emphasize the critical importance of robust privacy policies and secure data handling practices, especially considering the sensitive nature of personal information inputted into these apps. This concern is underscored by the increasing awareness and regulation surrounding digital privacy. Key informant A and B both stress that ensuring the confidentiality and security of user data is paramount in the development and implementation of these apps. Key informant B stated, "Adequate policy around patient data and storing...hard to actually get information regarding privacy and data protection".

Digital Literacy and Accessibility

Key informant B mentioned the issue of digital literacy and accessibility in relation to mental health apps. He pointed out that not all potential users have the necessary skills or resources to effectively utilize these apps, leading to a digital divide. This divide, according to key informant B, can limit the reach and impact of these mental health

tools, especially among populations that might benefit the most from such resources. They emphasized that considerations regarding ease of use, accessibility features, and outreach efforts are crucial in ensuring that these apps can truly serve a wide and diverse user base. While key informant A did not explicitly discuss this aspect, the concerns raised by key informant B align with the overall challenges identified in the implementation and utilization of mental health apps.

Cost and Accessibility

Both key informants stressed the importance of aligning mental health apps with patient needs and preferences. They particularly emphasized the need for cost-effective and accessible solutions. Key informant A noted that many patients on waiting lists for mental health services are also navigating financial constraints, making free or low-cost apps essential. He highlighted that the high cost of some mental health apps can be a significant barrier, denying access to those who may need these resources the most. Key informant B concurred with this viewpoint, acknowledging the critical need for affordability and accessibility in mental health apps to ensure they are beneficial to a broad range of users, especially those facing financial challenges.

Cultural and Linguistic Inclusivity

Key informant B particularly emphasizes the importance of cultural and linguistic inclusivity in the design of mental health apps. They point out that mental health challenges and treatments are deeply influenced by cultural contexts. They also note that apps which fail to consider diverse cultural backgrounds and language preferences may not be effective for a significant portion of the population. Overall, they underscored that inclusivity is not just about translation into different languages but also about integrating cultural sensitivities and norms into the app's content and user interface. Key informant A shares this view, acknowledging the critical need for apps to be culturally sensitive and accessible to a diverse user base. Key informant B remarked, "Critiquing apps in terms of cultural context...how well do they address cultural sensitivities" is crucial.

User-Friendly Design

Both informants highlighted the necessity of user-friendly design and easy navigation in mental health apps. Key informant A points out that the effectiveness of a mental health app is heavily dependent on its usability, emphasizing that complex or unintuitive interfaces can deter users, especially those who are not tech-savvy. They advocate for ensuring that apps are straightforward and easy to use as a crucial factor in maximizing their reach and impact. Similarly, key informant B underscores the importance of user-friendly design, agreeing that ease of use is essential for the widespread adoption and effectiveness of mental health apps.

Functionalities

Finally, both informants pointed out the need for mental health apps to offer a range of functionalities that cater to diverse mental health needs. Key informant A specifically mentions the importance of including features from basic soothing techniques and mood tracking to more complex interventions like cognitive behavioral therapy tools. He believes that the range of features should be broad enough to address different aspects of mental health care. They emphasize that this diversity in functionalities allows users to find the tools that best suit their individual needs and preferences, thus enhancing the overall effectiveness of the app. Key informant B concurs with this view, acknowledging the importance of a broad spectrum of functionalities to meet the varying needs of users and to ensure that the apps can provide comprehensive support in mental health care.

Takeaways from Phase 1

Phase 1 of this research involved diverse data from both published literature and key informants. In this section, we summarize the key takeaways that set the foundation for the second phase of our research.

1. We identified opportunities and challenges/ limitations of mental health apps via overlapping perspectives from the key informants and literature:
 - a. Opportunities include the potential to provide immediate support, diverse functionalities such as mood tracking and crisis management, customization/ personalization capabilities, and the ability of these apps to provide continuous care.
 - b. Challenges/ limitations include the suitability of mental health apps for crisis intervention, variability in app quality and evidence, privacy and data security issues, digital literacy and accessibility barriers, cost-related challenges, and the importance of cultural and linguistic inclusivity in the design.
2. We discovered 11 mental health apps to consider in our evaluation:
 - a. These include Hope by CAMH, Better Stop Suicide, MindBeacon, MindShift CBT, MoodMission, Headspace, Calm, Bearable, Telus Health CBT, Be Safe, and Pocketwell.
 - b. Each of these apps have been differentially evaluated or proposed based on expert opinion, and as such are candidates for further evaluation using a consistent approach/framework.
3. We discovered the Mental Health Commission of Canada's 2016 framework to evaluate the *quality* of the apps we identified.

- a. This appears to be a robust Canadian framework that addresses many of the concerns about apps identified in the literature review and key informant interviews, including useability, effectiveness, functionality, and transparency/ privacy.
4. Through our key informant interviews, we also determined the *suitability* of an app is an additional consideration in our evaluation.
 - a. One of our key informants discussed the usefulness of a “stepped-care” model to understanding the suitability of mental health apps for different mental health conditions and the severity of symptoms.
5. Taking points 3 and 4 together suggested our evaluation in Phase Two should consider both the *quality* of apps and their *suitability* for different mental health conditions.

Phase 2: Evaluation of Selected Mental Health Apps

Evaluation Approach

As mentioned, in Phase One we determined that evaluating both the *quality* and *suitability* of apps for different mental health conditions is important. In this section, we review the frameworks and criteria we used to evaluate these two aspects.

App Quality – the Mental Health Commission of Canada’s Framework

From Phase One, we identified the 2016 framework published by the Mental Health Commission of Canada as suitable for evaluating the quality of individual apps. This framework (see Figure 1) includes data collection encompassing:

- 1) Informative elements: These informative elements include things like app functions (e.g., journaling, mood tracking), supported platforms, price, etc. that could inform whether apps are suitable for particular users (e.g., low-income).
- 2) Evaluative criteria: This involves gathering information pertaining to app effectiveness, clinical claims, usability, user desirability, and the security and privacy of applications. App effectiveness refers to the evidence suggesting that the app achieves its intended purpose. Clinical claims evaluate whether an app makes specific clinical assertions (e.g., reducing stress or anxiety) and provides proof of those claims. User desirability assesses whether the application maintains user engagement and encourages prolonged use. Usability focuses on whether the app is designed with the intended audience in mind. Lastly, security and privacy concentrate on whether the application discloses how information is collected, stored, used, and protected.

We used this framework to evaluate the mental health apps for this research project. It is worth noting that there are no objective indicators or measures provided for each criterion. Instead, the user of the framework is required to exercise judgment in determining whether an app rates highly according to these criteria.

EVALUATIVE CRITERIA		
<p>Effectiveness What is the app's intended purpose? Can it actually do what it says it will? Is there proof?</p>	<p>Clinical claims If the app makes certain clinical claims (e.g., reducing stress or anxiety), does it give proof of its efficacy?</p>	<p>Usability Is the app user-friendly and engaging enough to make people want to keep using it?</p>
<p>User desirability Will the people the app is designed for actually want (or be able) to use it?</p>	<p>Security and privacy Does the app clearly state how it will collect, store, use and protect personal health information? Is this information easy to find or hidden deep within the app? Does the app meet all applicable federal and provincial/territorial legislative standards and requirements regarding personal health information?</p>	
INFORMATIVE CRITERIA		
<p>Functionality What functions does the app offer (e.g., journaling, mood tracking, guided exercises)?</p>	<p>Interoperability Does the app use open standards allowing it to exchange data with other health apps or tools (if applicable)?</p>	<p>Supported platforms Is the app exclusive to one platform, which may create accessibility barriers? Or is it available to many users across Android, iOS and other devices?</p>
<p>Target users Who is the intended audience for the app? Is it clear who should or should not be using it?</p>	<p>Price Is the app upfront about its cost or are there hidden/extra fees? Will the price create accessibility barriers for the intended users?</p>	<p>Transparency Does the app clearly state the individuals or organizations involved in its development? Does it clearly state who provided the funding for its development?</p>
<p>Inclusion Were the target users involved in the development and testing of the app to ensure it responds to their needs and expectations? How diverse was the user input? Were people from a variety of populations with unique mental health challenges involved (e.g., immigrant, refugee, ethnocultural and racialized communities, First Nations, Inuit, Métis, LGBTQ2+, people who are homeless, seniors, youth)?</p>		

Figure 1 - Guiding Principles and Criteria in Canadian Framework for Assessing Mental Health Apps, MHCC (2016)

App Suitability – a Stepped-Care Framework

Following its discussion in our key informant interviews, we did further research on using a stepped-care approach to evaluate the suitability of mental health apps for different mental health conditions. Rivero-Santana et al. (2021) describe a stepped care model for depression as “provid[ing] a framework in which to organize service delivery and help patients, caregivers and professionals identify and access the most effective interventions” (Rivero-Santana et al., 2021). The model uses a sequential approach to treatment and relies on the severity of a patient’s symptoms and history of treatment to determine the best support (Rivero-Santana et al., 2021).

Drawing on insights from key informants and our comprehension of stepped-care methodologies, we formulated our own framework to recommend mental health apps to patients, spanning from those suitable for individuals with preventive to mild mental health concerns, to those addressing severe concerns, such as suicide risk. Table 1

outlines this framework. It is important to note that our framework does not purport to represent an expert or scientific consensus but reflects our current understanding and perspective on app suitability relative to abstract mental health circumstances.

Table 1 – Stepped care model developed by our team for mental health app recommendation.

Tier	Description
1. Preventative to Mild Mental Health Concerns	<ul style="list-style-type: none"> • Low risk • Best candidate for mental health apps • Supporting overall wellness • Sample functionalities of a suitable app: symptom tracking, meditative strategies, coping skills
2. Moderate Mental Health Concerns	<ul style="list-style-type: none"> • Medium risk • Could benefit from a mental health app but in conjunction with primary care provider or other practitioner • Sample functionalities: CBT tools, live connect with a practitioner
3. Severe Mental Health Concerns or Crisis	<ul style="list-style-type: none"> • High risk • May not be able to benefit from mental health app other than providing immediate, direct crisis supports (e.g. emergency help line) • Sample functionalities: crisis line, safety plan

Note that the tiers are not exclusive. Individuals may benefit from resources in all three categories or tiers, dependent on physician evaluation.

Putting it all Together – a Two-Tiered Evaluation

We completed a two-tiered evaluation of mental health apps. First, we assessed the quality and functionality of individual apps against the MHCC evaluative criteria. Then, we used the stepped-care model to assess the appropriateness of each app for different mental health circumstances. We present results from our two-tiered evaluation below.

Evaluation Results – App Quality

We started by assessing the quality of the 11 apps identified in Phase One using the Mental Health Commission of Canada’s 2016 criteria. To do this, members of our research team reviewed each app and answered the questions and prompts provided in the evaluation framework. Though this was overall a subjective process, we had

multiple team members review each app and the associated criteria to reduce bias. Complete results from this process can be found in Table 2 below.

After reviewing each app, we decided that 10 out of the 11 apps were of sufficient quality. In other words, there was sufficient evidence to suggest they attained the evaluative benchmarks (effectiveness, clinical claims, usability, user desirability and security and privacy) as per the 2016 Mental Health Commission of Canada framework. We were not surprised that most of the apps met the standards outlined by the Mental Health Commission of Canada's framework as these were apps already recommended by experts and the scientific literature, but note that this framework could be useful for evaluating future lists of apps that haven't been pre-screened by experts.

Of final note – in Appendix D we provide a table with the “informative elements” of each app. These informative elements did not contribute to our evaluative decision-making about the “quality” of an app, and rather contains information that can help determine suitability for users (e.g., price, platform, etc.).

Table 2 - App Quality Evaluation using 2016 MHCC Framework

	Evaluative Criteria (MHCC 2016)					Judgement – is the app of sufficient quality? (Yes/No)
App Name	Effectiveness a. What is the app’s intended purpose? b. Can it actually do what it says it will? c. Is there proof?	Clinical Claims a. If the app makes certain clinical claims (e.g. reducing stress or anxiety), does it give proof of its efficacy?	Usability a. Is the app user-friendly and engaging enough to make people want to keep using it?	User Desirability a. Will the people the app is designed for actually want (or be able to use it)	Security and Privacy a. Does the app clearly state how it will collect, store, use and protect personal health information? b. Is this information easy to find or hidden deep within the app? Does the app meet all applicable federal and provincial/territorial legislative standards and requirements regarding personal health information?	
1. Mindshift CBT	MindShift CBT is designed to help manage anxiety by teaching relaxation, mindfulness, and developing effective ways of thinking using CBT strategies . The app is based on Cognitive Behavioral Therapy, a well-researched treatment for anxiety. However, the app itself hasn’t been studied in clinical trials .	The app’s content and tools are grounded in CBT principles. It offers a variety of exercises and information but has not been validated through independent clinical trials. Multiple studies published by MindShift CBT have been conducted on its effectiveness compared to other apps.	The app is visually appealing and user-friendly, though its primarily text-based content might be less engaging for some users.	MindShift CBT is designed to appeal to adolescents with anxiety. Its interface and content might have limited appeal to older individuals .	Upon registration, users are provided with the terms and conditions, as well as the privacy policy of the app. MindShift CBT clearly outlines how it handles user data, including collection, storage, and protection practices. Also, there are the privacy policies, which individuals can open and read on their own accord. It is not blatantly obvious, but individuals have the ability to read about how their data will be collected, stored, used, and protected	Yes
2. MoodMission	MoodMission is designed to help adults and older adolescents	The app primarily addresses the behavioral part of CBT,	The app is reported to be easy to	The app is appealing with an attractive	Upon signing up, users are presented with the app’s terms and conditions as well as its	Yes

	cope with low moods and anxious feelings by suggesting various activities (Missions) in response to users' reported moods . The effectiveness of the missions is recorded by users' feedback after completing each mission, although there is no mention of external validation or research studies supporting its efficacy .	with less emphasis on cognitive aspects. It includes behavioral activation techniques and psychoeducation about CBT, but lacks components like recognizing and naming automatic thoughts or cognitive distortions . While it references psychological research, it may lack extensive clinical validation compared to other more thoroughly researched mental health apps.	navigate and learn to use, with comprehensive and well-written information about each mission. However, the mission log's use for tracking mood trends over time could be improved .	design and a variety of activities. However, it might require a higher level of motivation for more intensive activities, and some missions may be impractical in certain settings .	privacy policy. MoodMission's policy outlines how user data is collected, stored, and used. Also, there are the privacy policies, which individuals can open and read on their own accord. It is not blatantly obvious, but individuals have the ability to read about how their data will be collected, stored, used, and protected	
3. Headspace	This app's purpose is to provide every person access to lifelong mental health support. This app hopes to do so by providing evidence-based meditation, mindfulness tools, mental health coaching, therapy, psychiatry. According to a randomized control trial, those using Headspace reported feeling less stress, anxiety, and improved productivity and depression symptoms	It does. Multiple studies have discussed the efficacy of this tool	The app is graphically aesthetic and has individuals wanting to use it again. It is fairly easy to use.	The app is designed to promote mental health support. This app is intriguing based on its bright colors and easy usability.	Upon signing up for the app, there are the terms and conditions of the application. Also, there are the privacy policies, which individuals can open and read on their own accord. It is not blatantly obvious, but individuals have the ability to read about how their data will be collected, stored, used, and protected. The privacy policy discusses federal and legislative standards.	Yes

4. Calm	The app is meant to make the world happier and healthier. There is proof on the effectiveness of the app, but this data isn't easily accessible.	It doesn't outwardly discuss its clinical impacts. However, there are some and there is proof of it. However, the results that prove this are hard to find.	The app is user friendly. Its colors aren't super engaging, but they are calming which may be more effective.	Yes, the app is designed to be simple and effective. It is not incredibly exciting to look at, but it gets the job done.	Upon signing up for the app, there are the terms and conditions of the application. Also, there are the privacy policies, which individuals can open and read on their own accord. It is not blatantly obvious, but individuals have the ability to read about how their data will be collected, stored, used, and protected. The privacy policy discusses federal and legislative standards.	Yes
5. Bearable	Bearable is a highly customizable app that allows you to track mood, medication, pain, hydration, menstrual cycle, and much more.	Reviewed by scientists at Cedar Sinai.	The app is user friendly. It is engaging and easy to use.	Yes, the app is designed to be simple and effective.	Upon signing up for the app, there are the terms and conditions of the application. Also, there are the privacy policies, which individuals can open and read on their own accord. Their website explicitly states that data will not be sold, and that data is encrypted.	Yes
6. BeSafe App	The BeSafe mobile app, created by a partnership between CAMH and mindyourmind, is designed for young individuals, acting as a digital outlet for crisis support available on both IOS and Android operating systems.	The effectiveness of the app is backed by evidence in action through briefings on their website. However, the developers clearly state that BeSafe does not replace professional clinical advice or emergency services but is rather	The app is desirable and usable as youth were involved in every step of BeSafe's development.	Provided youth were involved in the design process, the app is desirable for the intended audience.	There is a transparent, easily accessible policy privacy document on their website.	Yes

		a bridge towards appropriate treatment.				
7. MindBeacon	MindBeacon works to provide a private space where individuals can access a wide range of mental health supports.	MindBeacon makes no claims. It links individuals to professionals who provide mental health care.	Yes it is	Yes it is	The app links you to individuals, so information isn't necessarily held.	Yes
8. TELUS Health CBT	TELUS Health CBT works to combat mental health concerns by connecting folks with therapy and modules.	TELUS Health provides resources that are evidence-based.	Yes it is	Yes it is	The app links you to individuals, so information isn't necessarily held.	Yes
9. Hope by CAMH	HOPE is a mobile-based app focusing on providing suicide prevention information, tools, and crisis resources for users experiencing suicide. It is available on both IOS and Android operating systems.	The safety plan can be constructed alongside a health professional, loved one, or anyone by which a trusting relationship is present. A unique feature of this app is its integration into the clinical landscape through the 'Care Toolkit.' The 'Care Toolkit' provides healthcare providers with the information and tools necessary to fuse HOPE into their clinical practice. Moreover, evidence	Yes, it is.	It offers a high level of individuality, allowing users to construct a personalized safety plan.	A privacy and confidentiality statement for HOPE is listed in their guidebook, highlighting that anonymity will be maintained as the app does not collect and store personal information.	Yes

		backs the usability and usefulness of HOPE as CAMH conducts continuous research on the application with target users.				
10. PocketWell Canada	PocketWell intends to be the companion app to Wellness Together Canada services. It allows users to complete self-assessments, access WTC resources and has daily log features for mood, to track well being changes over time.	This resource makes no clinical claims other than helping to be present with yourself, notice mood changes over time and reflecting on well-being. This tool claims to self-manage low mood and worry through active reflection and tracking, though it does not make any claims that these tools will alleviate low mood or worry.	Yes, it is (convenient reminders, clean readable dashboard, engaging colours and low-effort tracking features)	Yes it is	The app is transparent about security and privacy as data is not shared and collection of sensitive data is minimal. The privacy policy is easily accessible, compliant with provincial/federal laws and is aggregated to prevent individual identification.	Yes
11. Better Stop Suicide	Better Stop Suicide intends to help individuals stop suicidal ideation by calming and slowing the mind through tasks and restful sleep.	It makes claims of reducing suicidal thoughts, but there is no proof of efficacy or evidence underscoring the practices used in the app. It also relies on the inputting of information by the individuals in crisis,	It is visually appealing but lacks extensive features and prompts to keep people using it.	No, it is designed for people in crisis but does not account for personalized crisis support. The prompts are extremely generic and	There is no findable privacy policy or information regarding data protection. The app developer website is not functional to provide additional information about the app.	No

		which may not be effective for individuals in crisis.		might hinder use.		
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Evaluation Results – App Suitability

Of the 10 apps we deemed to meet the quality standards outlined in the MCHH framework, we then assessed their suitability for individual needs based on the stepped care framework outlined in Table 1. This was done according to the specific functionalities and tools offered by each app.

For example, apps featuring symptom tracking and meditative strategies were categorized in the preventative to mild tier. These apps provide tools suitable for individuals seeking overall wellness strategies and self-management of mild symptoms. In the moderate mental health concerns tier, we placed apps offering functions such as CBT/DBT tools, live psychotherapy, and connection to a practitioner. These apps are well-suited for users intending to utilize an app alongside a mental health provider, requiring more intensive support.

We placed apps with functions like access to a personal safety plan and links to immediate resources in the user's area in the severe mental health concerns tier. These apps aim to offer more substantial assessments and treatments for individuals experiencing crisis or acute mental health conditions, linking them to direct supports within their community.

It is important to note that certain mental health apps provide functionalities beneficial across multiple tiers, while others are specifically suitable for one or two tiers based on their features and capabilities.

Complete results are in Table 3, below.

Table 3 - Adapted Stepped-Care Model Evaluation Table

App Name	Stepped-Care Model Category		
	Preventative to Mild Mental Health Concerns Functionalities: Symptom tracking, meditative strategies, coping skills	Moderate Mental Health Concerns Functionalities: CBT/DBT tools, live psychotherapy, live connect with a practitioner	Severe Mental Health Concerns or Crisis Functionalities: Access to personal safety plan, crisis hotline numbers or push to dial, links to immediate direct resources in their area
1. MindShift CBT	X	X	
2. MoodMission	X		
3. Headspace	X		
4. Calm	X		
5. Bearable	X		
6. BeSafe App	X	X	X
7. MindBeacon		X	
8. TELUS Health CBT		X	
9. Hope By CAMH	X	X	X
10. PocketWell Canada	X		

Discussion

In this study, we explored the potential of providing mental health smartphone apps to patients at risk of suicide and awaiting clinical assessment. Through Phase One, encompassing a literature review and key informant interviews, we identified the promising aspects of mental health apps, driven by their accessibility, affordability, and ability to address diverse needs. Despite their popularity, significant gaps in evidence-based content, regulatory oversight, and crisis support underscore the need for further exploration into their efficacy and safety, posing a critical question for stakeholders: how can practitioners recommend the right apps for patients?

A valuable outcome of our research was the identification of two assessment frameworks to help answer this question:

1. The Mental Health Commission of Canada's 2016 guidelines, which assists with the selection of apps that are safe, effective, and accessible, and
2. A stepped-care framework, which helps assess the suitability of apps according to the intensity or complexity of a patient's mental health concern.

These frameworks guided our two-tiered evaluation process, leading us to pinpoint apps suitable for severe mental health concerns or acute crises (BeSafe App and Hope by CAMH) and others for moderate (MindShift CBT, MindBeacon, and TELUS Health CBT) or mild (MoodMission, Headspace, Calm, Bearable, PocketWell Canada) concerns. While our research aimed to pinpoint apps for patients at risk of suicide on waiting lists, recommending specific apps is challenging without a comprehensive understanding of the nature and severity of individual patients' mental health concerns. This underscores a core finding from our report: app recommendations should be tailored on a case-by-case basis, using a stepped-care approach by considering the unique concerns and risk profiles of individual patients. Moreover, we emphasize the tentative nature of these findings, urging caution and recognizing that, especially in acute crisis situations, these apps may not be appropriate or effective interventions.

With direct input from our community partner on this project, we highlight three potential avenues for mobilizing this knowledge:

1. **Low involvement from SPCCH:** Distribute this research and the associated assessment frameworks to community stakeholders, encompassing primary care physicians, psychiatrists, mental health associations, and community services. The objective is for these stakeholders to incorporate and apply this knowledge within their practices and services.
2. **Medium involvement from SPCCH:** Collaborate with primary care health teams and community groups, briefing influential figures like mental health leaders about this work. They will engage directly with patients and clients, offering recommendations on the appropriateness of apps. This approach involves a more proactive implementation, fostering engagement with groups and enabling them to lead in knowledge brokering.
3. **High involvement from SPCCH:** Establish a service involving knowledge brokers dedicated to aiding individuals on waiting lists. These brokers will assist in identifying additional supports, including apps, guiding users in selecting ones that align with their needs. Physicians and practitioners can also consult these knowledge brokers for insights into the suitability and identification of specific apps for their patients.

The work presented in this report offers an approach to enhancing the use of apps for mental health support for those on waiting lists. Central to this endeavor is the

importance of knowledge mobilization, highlighting the role of a knowledgeable intermediary or knowledge broker. This intermediary would guide the recommendation process, ensuring alignment with established criteria, and facilitating effective communication with users, clinicians, and communities.

In closing remark, we feel it's important to place this research within the broader healthcare system context. While we recognize potential advantages of mental health apps relative to clinical support (e.g., convenience, anonymity/privacy), we strongly believe that, in many cases, apps should not be viewed as a replacement for clinical judgment or direct care from medical professionals. The mental healthcare landscape is confronted with significant challenges, including a growing crisis and insufficient funding. Cognizant of the factors contributing to waitlists, our position is that mental health smartphone apps should be reinforced as a supplement to direct care from a trained professional. We also caution against their potential role in easing pressure on policymakers to invest more substantially in comprehensive mental health care and should only be considered as an adjunct to traditional care.

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Appendices

Appendix A Key Informant Interview Questions

1. What is your perspective of the use of technology/apps in the treatment of mental health?
2. At what point would an app be a suitable intervention in a patient's mental health journey? Is there a limit to when they can no longer be recommended or be effective?
3. What do you look for in a mental health app? Can you think of any suitable apps/ones that you already recommend?
4. What is unique about patients on waiting lists and their treatment?
5. What are the pressing mental health concerns that you see from patients on waiting lists that would be the focal point of an app (anxiety, depression, etc)?
6. What are the key clinical functionalities you as a clinician would want prioritized or offered in the app (CBT, connect with a practitioner, AI chat bot)?
7. Is there a willingness to pay/subscribe to these apps by patients on waiting lists?
8. Which framework of app evaluation (APA, MARS..etc.) would be the most appropriate to use given this specific project and the patients you are looking to recommend these to?
9. What technological considerations should be prioritized from a patient's POV? Should the app collect patient data?

Appendix B Assessment Criteria



Mental Health Apps: How to Make an Informed Choice

The number of mental health apps is growing every day. Just knowing what's available can be a challenge; determining which ones are reliable and actually work is even harder. That's why the Mental Health Commission of Canada (MHCC) and the Canadian Institutes of Health Research (CIHR) have worked together to create an assessment framework that will make it easier for people to find the right apps for their specific needs – uniquely designed with the Canadian context in mind.

The guiding principles and assessment criteria set out in the proposed framework will help people across Canada make more informed app decisions. That includes individuals who want to manage their own mental health, healthcare providers looking to make good recommendations to patients and even app developers seeking to improve their products.

FACT: NOT ALL MENTAL HEALTH APPS ARE EQUAL

Some apps have proven mental health benefits. Some make mental health services more accessible by knocking down the barriers of cost, geography and stigma that keep people from getting support. But other apps are ineffective, potentially unsafe or have serious privacy/security flaws. The aim of this framework is to help people determine the difference.

Evidence base

Is there proof that the app is effective?

Gender responsiveness

Does the app consider the needs and preferences of men, women, boys, girls and gender-diverse people?

Cultural appropriateness

How appropriate is the app for people from a variety of cultures?

App assessments based on this framework should also be:

- **user-centred:** Apps that are designed with and for the intended end user are more likely to meet their needs and expectations.
- **risk-based:** The level of risk to a person's health must be taken into account. An interventional app like a drug-dosing calculator, for example, has more risk and needs a more detailed assessment than a fitness tracker.
- **innovation-friendly:** Assessments should not stifle innovation or burden developers. They should encourage the ongoing development and advancement of effective apps.
- **open, transparent and fair:** Providing clarity about the nature of the assessment and its outcomes is essential to ensuring its integrity and usefulness.
- **consistent with ethical norms:** If an app is part of a research study, it's necessary to ensure that the guidelines for ethical research involving humans are followed.
- **internationally-informed:** With so many apps developed and distributed globally, the assessment process should be aligned with international frameworks to promote greater use.

HOW THE FRAMEWORK WAS DEVELOPED

In November 2016, MHCC and CIHR brought together a diverse group of stakeholders from across Canada: app users and developers, healthcare providers, mental health advocates, people with lived experience of mental health problems and illnesses, policymakers and researchers.

Together, they discussed and reached consensus on the guiding principles and criteria to be included in a made-in-Canada framework for assessing mental health apps. This document reflects the outcomes of that discussion, consolidating some of the agreed-upon wording for ease of use.

What to look for in a mental health app

Here are some key criteria to consider when assessing any potential mental health app. Many of these are 'informative' criteria: while there's no right or wrong answer, the information gathered will still be useful in the overall assessment. Others are called 'evaluative' criteria because certain answers will be definitively better than others.

EVALUATIVE CRITERIA		
<p>Effectiveness What is the app's intended purpose? Can it actually do what it says it will? Is there proof?</p>	<p>Clinical claims If the app makes certain clinical claims (e.g., reducing stress or anxiety), does it give proof of its efficacy?</p>	<p>Usability Is the app user-friendly and engaging enough to make people want to keep using it?</p>
<p>User desirability Will the people the app is designed for actually want (or be able) to use it?</p>	<p>Security and privacy Does the app clearly state how it will collect, store, use and protect personal health information? Is this information easy to find or hidden deep within the app? Does the app meet all applicable federal and provincial/territorial legislative standards and requirements regarding personal health information?</p>	
INFORMATIVE CRITERIA		
<p>Functionality What functions does the app offer (e.g., journaling, mood tracking, guided exercises)?</p>	<p>Interoperability Does the app use open standards allowing it to exchange data with other health apps or tools (if applicable)?</p>	<p>Supported platforms Is the app exclusive to one platform, which may create accessibility barriers? Or is it available to many users across Android, iOS and other devices?</p>
<p>Target users Who is the intended audience for the app? Is it clear who should or should not be using it?</p>	<p>Price Is the app upfront about its cost or are there hidden/extra fees? Will the price create accessibility barriers for the intended users?</p>	<p>Transparency Does the app clearly state the individuals or organizations involved in its development? Does it clearly state who provided the funding for its development?</p>
<p>Inclusion Were the target users involved in the development and testing of the app to ensure it responds to their needs and expectations? How diverse was the user input? Were people from a variety of populations with unique mental health challenges involved (e.g., immigrant, refugee, ethnocultural and racialized communities, First Nations, Inuit, Métis, LGBTQ2+, people who are homeless, seniors, youth)?</p>		

What's next?

Because technology-based interventions for mental health are still relatively new, this framework has the potential to influence future research, policies and programs in the field; however, there is still more work to be done. For example, is it possible to calculate an overall score for an app by assigning ratings to some criteria? Should there be minimal acceptable thresholds for other criteria? Answering these questions – in a way that aligns with the framework's guiding principles and responds to the unique needs of app users across Canada – will be an important next step in creating a more rigorous and practical assessment tool.

Find out more! For more information on mental health apps and technologies, visit mentalhealthcommission.ca



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Appendix C [Key Informant Presentation Handout](#)

Appendix D Mental Health Commission of Canada Framework Evaluation Table - Informative Criteria

	Informative Criteria (MHCC)						
Mental Health App	Functionality	Interoperability	Supported platforms	Target users	Price	Transparency	Inclusion
1. Mindshift CBT	Offers a 12-week Therapist Guided Program and Live Therapy Sessions, with support from a licensed therapist. The program includes assessments, readings, activities, and personalized plans.	The app does not share information with other apps.	The app is accessible for iOS, Android, and other apps.	Aimed at individuals struggling with mental health issues, especially those that can be addressed through CBT, such as anxiety, depression, and stress management .	Claims that the Therapist Guided Program is covered by most benefits plans in Canada, and there are options for installment payments. Cost for therapist guided program starts at \$200. Many typical users are covered from work/other benefits.	The app highlights some of the individuals involved in the development of the app. However, not everyone who was involved in the creation of the app is explicitly showcased.	This app does not tell us about who was involved in the development or testing of the application.
2. MoodMission*	This app Offers a variety of missions based on thought, physical, behavioral, and emotional activities to help cope with low moods and anxiety. Also includes a mission log to track the completed activities and their perceived helpfulness.	The app does not share information with other apps.	The app is accessible for iOS, Android, and other apps.	Intended for adults and older adolescents, particularly those who have some experience with CBT or are looking for activities to learn effective coping strategies .	Most content is free, but some customizable content is available for a fee.	App discloses who was involved in the ideation/creation of app, involving clinical psychologists with support from universities and digital companies.	This app does not tell us about who was involved in the development or testing of the application.
3. Headspace	The app provides meditation, mindfulness tools, mental health coaching, and podcasts.	The app does not share information with other apps.	The app is accessible for iOS, Android, and other apps.	It is not clear who should be using this app. However, this app is meant to provide every person with lifelong mental health support.	The app is free, but upon signing up for the app, there are hidden fees. There are memberships, and you cannot access the mindfulness exercises unless you pay for a subscription.	The application discloses who was involved in the development of this app. This mainly involves individuals with PhDs, doctors, and social workers.	This app does not tell us about who was involved in the development or testing of the application.

4. Calm	This app provides meditation, sleep exercises, music, stretching exercises, masterclasses, and nature scenes.	The app does not share information with other apps.	The app is accessible for iOS, Android, and other apps.	It is not clear who should be using this app. However, this app is meant to provide every person with lifelong mental health support.	The app is free, but upon signing up for the app, there are hidden fees. There are memberships, and you cannot access the mindfulness exercises unless you pay for a subscription.	The app highlights some of the individuals involved in the development of the app. However, not everyone who was involved in the creation of the app is explicitly showcased.	This app does not tell us about who was involved in the development or testing of the application.
5. Bearable	This app is a health tracker, mood diary, habit tracker, and self-care journal.	The app does not share information with other apps.	The app is accessible for iOS, Android, and other apps.	It can be used by the general public but is often used among those with chronic health conditions	The app is free, but upon signing up for the app, you can pay for an additional subscription.	The app was developed by someone with chronic migraines and consults the community on what features to add.	The app was developed by someone with chronic migraines and consults the community on what features to add.
6. BeSafe App*	Assists users with informed decision making to access appropriate and reliable resources. The app includes a digital safety plan, access to local and provisional mental health resources, and a 'Get Help' script to assist users during a crisis.	The app does not appear to share information with other apps.	IOS and Android	Youth, but can be used regardless of age.	The app is free for the intended users. The app received funding from community partners who pay a yearly fee to initiate a regional plan with BeSafe.	Created by a team of youth (The London Service Collaborative and mindyourmind)	Created by a team of youth (The London Service Collaborative and mindyourmind)
7. MindBeacon	The app links individuals to healthcare professionals.	No it doesn't.	MindBeacon is on several different platforms.	The target user is anyone who needs mental health supports.	The app provides services, but these have costs associated with them.	The app was developed by CloudMD	Not explicitly discussed.

				MindBeacon largely works on providing support to corporations.			
8. TELUS Health CBT	The app links individuals to healthcare professionals.	No it doesn't.	TELUS Health CBT is on several different platforms. Accessing it can be difficult though.	The target user is anyone who needs mental health supports. TELUS Health CBT largely works on providing support to corporations.	The app provides services, but these have costs associated with them.	The app was developed by experts.	Not explicitly discussed.
9. Hope by CAMH*	The app helps users construct a personalized safety plan, especially useful during times of crisis.	The app does not appear to share information with other apps.	IOS and Android	The age restriction of the app in the Apple App Store is listed to be 17+, highlighting the intended target audience.	Free	Developed by CAMH staff with feedback from clinical experts.	Developed by CAMH staff with feedback from clinical experts.
10. PocketWell Canada*	Allows users to complete self-assessments and access Wellness Together Canada resources from their phone, track their mood from day to day and set reminder notifications for the self-assessment and the Mood Meter	The app does not share information with other apps.	IOS and Google Play Store	The target users are broad as it is classified as an overall mental wellness app but is best suited for those with mild mental health concerns or requiring a preventative tool	Free	Funded by the Government of Canada, and clearly outlines the collaborators in its development (KHP, Canada Health Infoway, etc.)	Incorporates clinical assessment tools from mental health professionals but no information about target users input during development.