# Digital Opportunities for Outcomes in Recovery Services

<span style="color:red">Level: Intermediate/Advanced</span>

Group Facilitator's Guide

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# Preface

## Background

Increasing access to high quality and evidence-based mental health services remains both a challenge and priority for healthcare. Whether measured in personal suffering, lost productivity, premature mortality, or increased healthcare spending, it is clear that there is a need for innovative solutions to meet the expanding demand for mental health services. Given the rapid expansion of mobile technology, especially smartphones, it is logical that these digital tools may offer one potential solution. Data has repeatedly shown that those with mental health conditions, including serious mental illness like bipolar disorder and schizophrenia, have high rates of access to smartphones and interest in digital mental health offerings [1,2]. In the simplest terms, access to smartphones offers access to novel means and portals of care. The myriad of apps available today promise to help those with mental health conditions to monitor symptoms, connect with care, self-manage symptoms, and even predict relapse. The potential of on-demand mental health services only a fingertip away has fueled unprecedented interest manifested by the over 10,000 related apps available today for immediate download [3], but the closing of this first digital divide has revealed a second [4].

The increasing access of smartphones and availability of digital mental apps has not yet transformed the field or patient trajectories. Rather the initial excitement of a panacea has evolved into an understanding that realizing the potential of digital mental health requires not only developing new apps but also developing new skills for people using these technologies [4]. This second digital divide is no longer focused on material access to digital tools like smartphones or apps but rather the knowledge, skills, and confidence required to actually utilize these novel tools towards improving mental health. While less immediately tangible than the first digital divide of access, even a brief clinical experience around actual use of fitness trackers to smartphone apps, virtual reality to smart home devices immediately reveals the extent of this new digital divide [5]. Most mental health apps that are downloaded are never opened and the minority that are actually opened are often accessed for a single session before being abandoned [6,7].

But it is possible to bridge this second digital divide. Interest in digital mental health must and can now be met with hands-on training and functional education that offers people the skills to meaningfully engage with technology towards their recovery. The Digital Opportunities for Outcomes in Recovery Services (DOORS) program presented here represents an evidence-based effort to formally bridge this new digital divide and deliver on the potential of digital mental health. Developed in diverse clinical settings including a first episode psychosis program, a mental health clubhouse program, and a busy state sponsored outpatient clinic, DOORS has evolved as a collaboration between those with lived experiences, social workers, and psychiatrists. Today, DOORS represents a program of pragmatic and interactive lessons designed to develop new functional skills for accessing and utilizing the promise of digital health. Tomorrow, we hope it represents a progressive mindset towards digital mental health where what we now label digital tools become instead personalized resources. Towards this vision of accessible and personalized mental health, we are pleased to share this manual.

1. Torous J, Wisniewski H, Liu G, Keshavan M. Mental Health Mobile Phone App Usage, Concerns, and Benefits Among Psychiatric Outpatients: Comparative Survey Study. JMIR mental health. 2018 Oct;5(4).

2. Torous J, Chan SR, Tan SY, Behrens J, Mathew I, Conrad EJ, Hinton L, Yellowlees P, Keshavan M. Patient smartphone ownership and interest in mobile apps to monitor symptoms of mental health conditions: a survey in four geographically distinct psychiatric clinics. JMIR Mental Health. 2014 Jul;1(1).

3. Torous J, Roberts LW. Needed innovation in digital health and smartphone applications for mental health: transparency and trust. JAMA psychiatry. 2017 May 1;74(5):437-8.

4. Torous J, Rodriguez J, Powell A. The new digital divide for digital biomarkers. Digital biomarkers. 2017;1(1):87-91.

5. Hoffman L, Benedetto E, Huang H, Grossman E, Kaluma D, Mann Z, Torous J. Augmenting Mental Health in Primary Care: A One-Year Study of Deploying Smartphone Apps in a Multi-Site Primary Care/Behavioral Health Integration Program. Frontiers in psychiatry. 2019;10:94.

6. Torous J, Staples P, Slaters L, Adams J, Sandoval L, Onnela JP, Keshavan M. Characterizing smartphone engagement for schizophrenia: results of a naturalist mobile health study. Clinical schizophrenia & related psychoses. 2017 Aug 4.

7. Owen JE, Jaworski BK, Kuhn E, Makin-Byrd KN, Ramsey KM, Hoffman JE. mHealth in the wild: using novel data to examine the reach, use, and impact of PTSD coach. JMIR mental health. 2015 Jan;2(1).

For more info, please visit: https://www.digitalpsych.org/learn.html

## Goals & Objectives

**Equip patients with digital health knowledge, skills, and resources for:**

- Gaining insight into their lived experience
- Managing mental health symptoms
- Preventing illness relapse
- Supporting healthy lifestyle change
- Making informed decisions around digital health
- Advocating for safe, effective, and usable digital health tools
- Accessing new healthcare resources
- Gaining new skills useful towards employment

**After completing this training participants will be able to:**

- Make informed decisions when downloading apps
- Better understand their personal patterns related to sleep, exercise, mood, etc.
- Identify personal data streams most relevant and important to their well-being
- Use personal data trends to generate goals related to healthy behavior change
- Identify smartphone resources that may support recovery

**Pre-requisites:**

In order to derive full benefit from the DOORS program, participants should possess a smartphone (either Android or iPhone) and should understand how to use the main functions of a smartphone (e.g. using apps, internet browsing, GPS, email, app store, etc.).

Individuals who are new to using smartphone technology should consider completing the 4-week introductory DOORS course to acquire the skills/knowledge necessary for this intermediate course. This introductory course is offered in a parallel program.

**Apps mentioned in this manual:**

Apps mentioned in this manual offer useful examples, but are not endorsed or recommended by the BIDMC Digital Psychiatry Division. Apps frequently change and update; and those mentioned here may be different at the time you access this manual.

# Manual Overview

**Session 1: Digital health technology usage and opportunities**

Digital health technology can capture elements of our lived experience (e.g. behavior, symptoms, mood), inform health-related goal-setting, encourage self-management strategies, and provide support in managing day-to-day tasks. An important component of this first session is to help participants understand what digital health technology is and to determine how group members are already using smartphones and wearables as part of their daily lives. Group participants often find creative ways to use smartphone technology to support their health/well-being and pooling the group's collective knowledge may deepen the learning experience, making it more meaningful and relevant to each individual's needs.

For those group members who have not used health-related smartphone apps, it is important to do a hands-on activity to demonstrate how smartphone apps may help participants cultivate insight into their lived experience, learn self-management strategies, and support goals for improving their overall health and well-being. Stop, Breathe & Think is an engaging and easy-to-use mindfulness app that enables users to identify how they are feeling physically and emotionally, and to practice a mindfulness meditation that matches their current needs. Participants often enjoy the experience of taking a moment to check in with themselves and to receive support from the app in identifying what mindfulness intervention might be most relevant/helpful to them in that moment. This activity will set the stage for next week's session in which participants will download an app that can help them track their symptoms, sleep, and mood through daily surveys.

Outline:

1) Introduce the concept of digital health
2) Provide opportunities for patients to learn about each other's experience with digital health technologies
3) Through demonstration and hands-on use of a mental health app, begin exploration of how apps can help patients better understand their own behaviors, symptoms, and mood

Recommended readings:

1. Hoffman L, Benedetto E, Huang H, Grossman E, Kaluma D, Mann Z, Torous J. Augmenting Mental Health in Primary Care: A One-Year Study of Deploying Smartphone Apps in a Multi-Site Primary Care/Behavioral Health Integration Program. Frontiers in Psychiatry. 2009;10, 94.

2. Torous J, Chan S. Mental health apps: What to tell patients. Current Psychiatry. 2018 Mar;17 (3): 21.

3. Wisniewski H, Liu G, Henson P, Vaidyam A, Hajratalli NK, Onnela JP, Torous J. Understanding the quality, effectiveness and attributes of top-rated smartphone health apps. Evidence-based mental health. 2019 Feb 1; 22(1):4-9.

## Session 2: Capturing lived experience

Cultivating insight into one's lived experience can help illuminate the connection between behaviors, mood, and symptoms and guide health-related goal setting. Using smartphone technology can play a useful role in helping participants to monitor important aspects of their daily lives. Before introducing group members to an app that can assist with this process, participants will reflect on activities/behaviors that help to improve their mood as well as strategies they have used to keep track of their behaviors (e.g. exercise), symptoms (e.g. hearing voices), or mood (e.g. anxiety). Activating participants' prior knowledge and demonstrating how the LAMP app (Learn, Assess, Manage, Prevent) can further help them with keeping track of their experience will help group members to more meaningfully engage with the app in the coming weeks.

Participants will require one-on-one support from staff in setting up the LAMP app, identifying relevant surveys, navigating to various features, and discussing how to use LAMP as part of their daily lives. Group members are often more likely to use LAMP if they understand its purpose and can identify how it may be valuable to them on a personal level. Helping participants reflect on why certain symptoms, mood, and behaviors are important for them to monitor will prepare them for the following week in which participants will use their personal data to establish small, actionable goals related to their own health.

Outline:

1) Explore group members' knowledge of the connection between behaviors, symptoms and mood
2) Demonstrate how digital technology can help them track various aspects of their lived experience (e.g. mood, exercise, sleep) to learn more about themselves and to gain knowledge that can guide health-related goal setting
3) Assist participants in downloading a self-monitoring app (LAMP) to use over the course of two weeks
4) Discuss aspects of their own lived experience that they are most interested in monitoring over the next week and identify why this is important to them

Recommended readings:

1. Torous J, Wisniewski H, Carpenter E, et al (in press). The development of a smartphone app designed to improve clinical care based on patient, clinician, and researcher needs. Journal of Technology in Behavioral Science. 2019.

2. Torous J, Kiang M, Lorme J, Onnela JP. New Tools for New Research in Psychiatry: A Scalable and Customizable Platform to Empower Data Driven Smartphone Research. Journal of Medical Internet Research: Mental Health. 2016;3(2):e16.

## Session 3: Understanding lived experience and enhancing self-management

Collecting personal data is useful if it helps participants to better understand their lived experience, to identify areas for improvement, and to take action in setting or reaching health-related goals. While we often believe that we can remember how we felt, how much we exercised, or how much we slept on any given day, accurately recalling this information can be challenging without the assistance of self-monitoring technology. The step count exercise in this session illustrates this point by comparing the accuracy of participants' perception of how many steps they took the previous day and the actual number captured by their smartphone. This activity can also spark a conversation around participants' goals related to exercise and how they might increase their activity level.

In order for participants to derive meaning from the personal data collected through the LAMP app, the graphs displaying passive and active data must be simple, easy to understand, and relevant to the participant. For instance, if a participant took multiple surveys throughout the week to track their psychosis, anxiety, and sleep it would likely be overwhelming to show all three data streams simultaneously in a single graph. Highlighting each data stream one-by-one and then eventually looking for connections between the three might prove to be the most effective way to review the information with participants. When discussing personal data with a group member, it is essential that the staff member adopt a collaborative stance, soliciting participants' interpretations and ideas first before providing any insights. This will allow participants to discover their own personal trends, to identify unique data points, and to ask clarifying questions if the data visualizations are unclear.

Once participants demonstrate an understanding of their data results, staff can use motivational interviewing techniques to help group members consider whether they would like to make any lifestyle changes based on the data they have collected. Using the SMART goals framework, staff can work with participants to establish small, actionable goals for the following week and to discuss how they could use the LAMP app to measure their progress over time.

Outline:

1) Demonstrate the advantage of using self-monitoring technology to more accurately capture lived experience
2) Provide group members with personalized reports on LAMP survey data related to symptoms, behavior, and mood collected over the previous week
3) Solicit group members' interpretations of the data visualizations including what insights they may have gained from tracking these elements of their lived experience

4) Discuss ways in which analyzing data and making connections between symptoms, behavior and mood might highlight opportunities for self-management strategies or health-related behavior change

5) Continue exploring other ways in which smartphones can monitor lived experience to provide personal insights and possibilities for lifestyle change

Recommended readings:

1) Ledesma A, Nieminen H, Valve P, Ermes M, Jimison H, Pavel M. The shape of health: A comparison of five alternative ways of visualizing personal health and wellbeing. 2015 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC). 2015.

2) http://www.storytellingwithdata.com/

## Session 4: Making informed decisions about health apps and committing to action

Using their most recent LAMP data, participants will reflect on their progress towards the personal health goal set during the previous week. Staff will share new data visualizations with participants and will solicit their opinions as to whether their health-related behavior change may be connected to any shifts in symptoms, mood, or sleep. If participants were unable to reach their goal, staff can assist participants in identifying any barriers or concerns that may have impeded their progress and problem-solve around ways to overcome these challenges.

The second part of the session will focus on helping patients make informed decisions when downloading mobile apps. At present, many health apps are not supported by a strong evidence-base and fall outside the scope of the FDA. Given this lack of regulatory oversight, many apps fail to safeguard users' personal health information and protect users' data. When deciding whether to download an app, people often consider star ratings, user reviews, and the app icon's visual design, but fail to take into account other important considerations related to privacy and security. This session's app evaluation activity will help participants learn the importance of reviewing an app's privacy policy, determining whether the source is trustworthy, checking when the app was last updated, and considering input from friends/family/health care professionals around the app's general quality and usefulness.

During the final wrap-up, group participants will consolidate knowledge by reflecting on what they learned during the 4-week course, what they're curious to learn more about, and how they might continue using digital health technology to develop self-management strategies and improve their overall health and well-being.

Outline:

1) Discuss participants' progress toward health goals set during previous week including barriers to implementation
2) Using LAMP survey data from the past week, help group members consider whether changing their behavior may be connected to other aspects of their lived experience
3) Explore group members' decision-making process when reviewing app descriptions prior to downloading; identify top evaluation criteria
4) Introduce new criteria for participants to consider as part of their app evaluation process (e.g. privacy/security, app developer, recommended by trustworthy person, updated within the past 6 months)
5) Evaluate two apps using group criteria and determine whether they are high quality enough to download and use
6) Reflect on experience using apps to help support health and recovery
7) Establish goals for using mobile apps to support a healthy lifestyle and to enhance self-management of mental health

Recommended readings:

1. Henson P, David G, Albright K, Torous J (in press). Deriving a Practical Framework for Mental Health App Evaluation. Lancet Psychiatry. 2019.

2. Torous J, Andersson G, Bertagnoli A, et al. Towards a Consensus for Smartphone Apps and Digital Mental Health. World Psychiatry. 2019 Feb;18(1):97-98.

3. Ernsting C, Dombrowski SU, Oedekoven M, O´Sullivan JL, Kanzler M, Kuhlmey A, Gellert P. Using Smartphones and Health Apps to Change and Manage Health Behaviors: A Population-Based Survey. J Med Internet Res. 2017;19(4):e101.

# Modules

## Session 1: Digital Health Technology Usage and Opportunities

The purpose of this session is to introduce participants to the concept of digital health and to explore group members' experience using digital health technology. The digital poll will reveal how group members are currently using smartphone apps to support their health and the various ways in which this technology can aid in the recovery process. Participants will practice using the app "Stop, Breathe & Think" to experience how apps can cultivate insight around physical and emotional states. Through this activity participants will also learn about mindfulness strategies for managing their emotions.

**Time:** 1 hour

**Session outline:**
1) Introductions
2) Group rules
3) Understanding group member use of digital technology
4) Exploring mental health apps
5) Summary
6) Personal project

**Facilitator pre-session preparation:**
- Confirm Wi-Fi access or bring hotspot device if Wi-Fi is limited in the building
- Confirm access to large screen to share survey results (e.g. TV screen, projector, monitor)
- Download "Stop, Breathe and Think" app onto multiple iPads for use during the group session
- Practice using "Stop, Breathe and Think" prior to group session to increase comfort in assisting participants in navigating through the app
- Create digital poll and print link/instructions for participants (www.directpoll.com)

**Materials needed:** 5-7 iPads, large screen and/or projector, handout (Appendix A)

### 1) Introductions

"Over the next four weeks we are going to be learning about smartphone apps that can help you better understand your own experience and to learn how things like sleep, exercise, and socializing might be connected to your mood. We'll work together to identify some good apps that fit your needs and how these apps might support you in reaching your health goals."

Before we dive in, perhaps we could all go around the room and say who we are?"

**Tip**: Group facilitators and staff should introduce themselves and state why they are interested in digital health or why they're excited to be participating in the group. This may encourage participants to share more about why they are attending the group and what they hope to get out of it.

## 2) Group rules

Establish group rules in terms of respecting each other, being supportive, and respecting privacy.

## 3) Understanding group member use of digital technology

"Now, we'd like to take a moment to get a better sense of how you are currently using your smartphone to help you in your day-to-day life. What apps or features on your phone help you manage different tasks, relax, or connect with others? We've also prepared an online survey that looks at how some of you may be using apps to support your health. Here is the link to the survey that you can take on your phone. All of your answers will be anonymous. Once everyone is finished, we'll come back together and talk about how some of you may be using your smartphones."

➔ Distribute paper instructions for accessing the online survey link or display link on screen

> **Tip**: Staff should assist participants as needed in navigating to the website and filling out the survey. Staff can also prompt group members to look through their smartphone to identify apps/features that they use on a regular basis.

## Survey (Appendix A)

| Have you ever used a smartphone app to help with: | Have you ever used a wearable device (e.g. Fitbit, Apple Watch) to help with: |
|---|---|
| o Exercise | o Exercise |
| o Sleep | o Sleep |
| o Diet | o Diet |
| o Managing symptoms | o Managing symptoms |
| o Mood | o Mood |
| o Stress | o Stress |
| o Mindfulness | o Mindfulness |
| o Other | o Other |

"Now, we'd like to come back together to talk about how we're using our phones in our day-to-day lives and to help manage our health. I will project the results onto the screen and would like to hear from the group about what specific apps you've used."
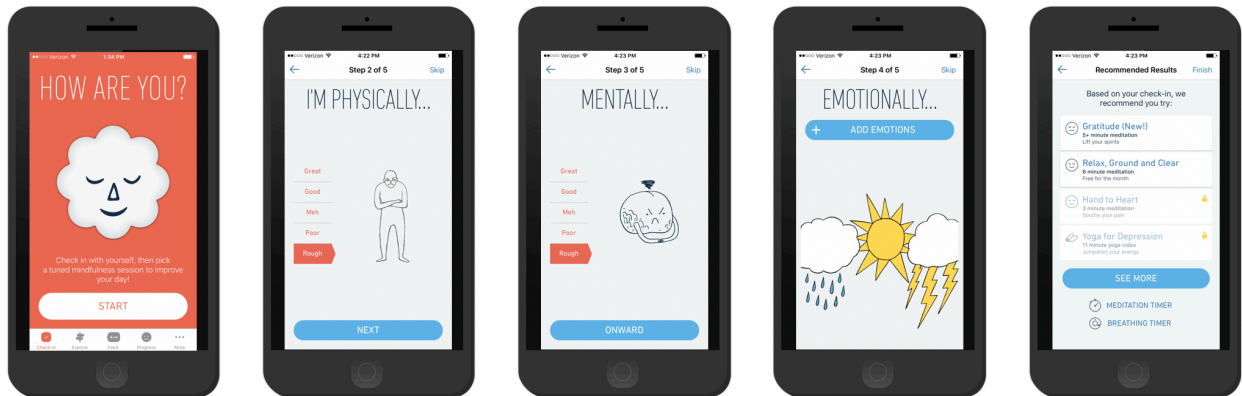
**Post-survey discussion prompts:**
- Which apps or features do you like to use?
- How do they help you?
- If you were telling a friend about this app(s) what would you recommend they try out?

## 4) Exploring mental health apps

"We thought it might be helpful to practice using an app together. Have any of you ever heard of mindfulness? Today we're going to practice using "Stop, Breathe, and Think" which is a mindfulness app that contains a number of different guided mindfulness meditations. You can pick a short, audio exercise and track your progress over time. We'd like you to break into pairs and we'll hand out iPads as well as instructions for this exercise. Staff member will work with you to learn how to navigate to key parts of the app."

➜ Provide handout for small group exercise (Appendix A)

➜ Distribute iPads that display the "How Are You?" feature from "Stop, Breathe, and Think"

➜ Demonstrate using the "How Are You" feature and ask questions to help patients reflect on their experience

**Stop, Breathe & Think "How Are You?" Screenshots**



**Tip**: If group facilitators have access to a screen, the "How Are You?" demonstration can be done for the entire group before breaking into the small group exercise.

### Stop, Breathe & Think
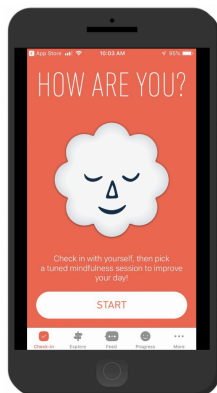


**Post-activity discussion prompts**:

- What exercises did the app recommend?
- What can you measure over time?
- How could an app like this be helpful in your own life?
- What was good about this app?

"Now, we'd like to come back together and try one of the exercises from the app. We're going to try the "Engaging Your Senses" guided mindfulness exercise. Can everyone find it on their iPad? Once we've all found it, I'll press play and then we can listen together. If at any point you are feeling uncomfortable or need to take a break that's completely fine"

➜ Play the "Engaging Your Senses" exercise

### Engaging Your Senses
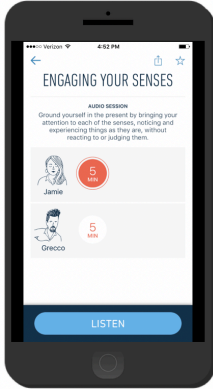
**Post-activity discussion prompts**:

- What was it like for you doing this exercise?
- What did you notice about how you felt before and how you felt afterwards?
- What did you learn or like about doing the "How Are You" exercise?
- How is this app similar to the apps you're already using?
- How could you use this app to help with things like managing your symptoms, getting better sleep, and relaxing?
- When could you use it and where?

➔ For those interested in trying "Stop, Breathe, & Think" on their own, staff can assist them with downloading the app onto their own phones and enhance motivation through action planning

- What part of this app would you like to try between now and next week?
- When do you plan to use it and where?
- What might get in the way?

**Tip**: If group members are reluctant to download the app, staff members may consider exploring with group members their reasons why (e.g. not enough data on phone, unsure how app could be useful, concerns about privacy/security) and help participants address any barriers to use.

**Tip**: If participants express interest in apps that focus on other health-related topics such as exercise, nutrition, and sleep, a different app may be used for the "exploring mental health apps" activity.

### 5) Summary

"As we wrap up, I wanted us to reflect on some of the things we learned today and what you want to take away from this experience."

**Discussion prompts:**
- What were some new things you learned today?
- How do you plan to use Stop, Breathe, & Think over the next week?
- If you could build your perfect app what would it have? What would it help you with?

### 6) Personal projects

"For next week, we're going to introduce you to an app that can help you keep track of different things like your sleep, mood, and symptoms. Between now and then, we'd love you to try Stop, Breathe and Think on your own if you're interested in using it. We'd also like to discuss any other health-related apps that you discover over the next week."

# Modules

## Session 2: Capturing Lived Experience

In this session, group members will explore the ways in which smartphone technology can be used to illuminate connections between behaviors, symptoms, and mood. Participants will consider how capturing their lived experience can help them understand their own patterns and make health-related goals based on the insights they derive from their personal data. Staff members will help group members download the LAMP app and demonstrate how to use the survey function to track various elements of participants' lived experience (e.g. mood, anxiety, psychosis, sleep, medication). During the session wrap-up, participants will discuss what aspect of their lived experience they would like to monitor over the next week and what they hope to learn from using this digital tool.

**Time:** 1 hour

**Session outline:**
1) Review group purpose
2) Check-in: Stop, Breathe, & Think
3) Connections between behaviors, symptoms, and mood
4) Monitoring behaviors, symptoms, and mood
5) Using smartphone apps (LAMP) to capture lived experience
6) Action planning and wrap-up

**Facilitator pre-session preparation:**
- Confirm Wi-Fi access or bring hotspot device if Wi-Fi is limited in the building
- Confirm access to large screen to share survey results (e.g. TV screen, projector, monitor)
- Confirm ability to connect staff smartphone to monitor for LAMP demo
- Download LAMP onto multiple iPads for use during group session (optional)
- Practice using LAMP prior to group session to increase comfort in assisting participants in navigating through the app
- Create LAMP study ID's for group participants
- Create digital poll and print link/instructions for participants (www.directpoll.com)

**Materials needed:** 5-7 iPads, Large screen and/or projector

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**1) Review group purpose**

 "Hello everyone. Before we get started, I wanted to provide a quick review of what we're doing in this group for those of you who may not have been here last week. The purpose of this group is to learn about how you can use your smartphone to better understand your own experience and to find out how things like sleep, exercise, and socializing might be connected to your mood and how you feel overall. We'll work together to identify some good apps that fit your needs and how these apps might support you in reaching your health goals.

Before I go any further, does anyone have any questions or comments from our last group meeting?"

## 2) Check-in: Stop, Breathe & Think
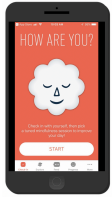
 "Last week we practiced using Stop, Breathe, & Think which is a mindfulness app that lets you check in about how you're feeling and then recommends some exercises to try. Just like last week, we'd like to start off the group with an online survey to find out whether you were able to use Stop, Breathe, & Think over the past week. The link to the survey is on the screen. All of your answers will be anonymous. Once everyone is finished, we'll come back together and talk about the results."

➔ Distribute paper instructions for accessing the online survey link or display link on screen

**Tip**: Group facilitators and staff should assist participants as needed in navigating to the website and filling out the survey.

### Survey (Appendix B)

**Did you use Stop, Breathe & Think within the past week?**

- o  Yes
- o  No

**Post-survey discussion prompts:**

If "Yes"
- How did you use SBT?
- What was the experience like for you?
- What did you learn?

If "No"
- Did you plan to use it? If so, what got in the way?
- How could you imagine it being useful, if at all?

## 3) Connections between behaviors, symptoms, and mood

"We're going to shift gears now to talk about whether there can be connections between what we do and how we feel. Sometimes when we're feeling down or anxious doing things like exercising, talking with friends/family, or getting more sleep can make us feel better. We have another survey for you to complete and once everyone has finished, we'll talk through the results."

➔ Distribute paper instructions for accessing the online survey or display link on screen

### Survey (Appendix B)

**When you're having a hard time, what helps you to feel better?**

- o  Getting more exercise
- o  Getting more sleep
- o  Eating healthier foods
- o  Playing games
- o  Writing in my journal
- o  Listening to music
- o  Watching TV/YouTube
- o  Talking with friends and family
- o  Seeing my doctor and/or therapist
- o  Taking my medication
- o  Doing relaxation exercises

**Post-survey discussion prompts:**

- Many of you answered that you like to _____ to help you feel better; can someone tell me more about this?
- Why do you think it's helpful?
- What do you notice changes when you do _____?
- How do you feel before and then how do you feel after?

**4) Monitoring behaviors, symptoms, and mood**

"It seems as if many of you have a good sense of the things that often help you to improve your mood. Many of you said that getting more exercise, seeing friends, and eating well have an effect on how you're feeling. Out of curiosity, how many of you have tried to track your mood, sleep, exercise or eating either by using a paper tracking tool or using the tracking features available in your smartphone? We have one more survey for you to take today that asks you about this."

➔ Distribute paper instructions for accessing the online survey or display link on screen

**Survey (Appendix B)**

**Have you ever tried to keep track of your:**

- o Sleep
- o Mood
- o Psychosis symptoms
- o Anxiety
- o Eating
- o Alcohol intake
- o Steps
- o Exercise
- o Social activity

**Post-survey discussion prompts:**

- ▪ Why did you decide to do this?
- ▪ How did you track _____?
- ▪ What did you learn?
- ▪ In what ways was it helpful to keep track of your _____?
- ▪ How might your smartphone help you with tracking _____?

**Tip**: If participants can easily identify and discuss past experiences tracking behaviors, mood, symptoms, etc. the survey can be skipped, however, the prompts should still be used as part of the discussion.

**5) Using smartphone apps (LAMP) to capture lived experience**

"It looks like some of you have already tried keeping track of _____ on your own and maybe learned some things about yourself through that process. Today, we wanted to introduce you to a mobile app called LAMP that makes it easier for you to monitor your symptoms, step count, sleep, medication and mood and then helps you to see how they're connected. With this app, you can take surveys to record how you're doing every day and then at the end of the week look at a graph that shows how you've been doing for the whole week. Today, we've discovered that many of you already have a pretty good sense of some of these connections, but sometimes we can learn some surprising new things when we look at our personal data over time."

**LAMP Screenshots**
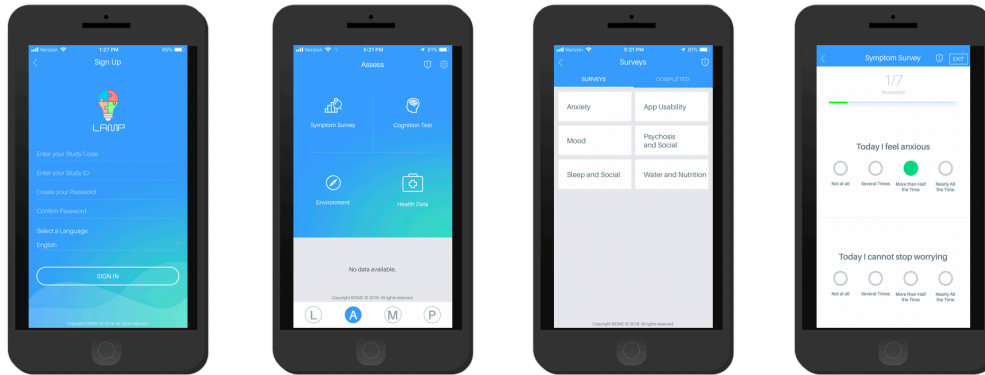


Now we'll split into small groups and help each one of you to download the app."

➔ Provide each patient with a study ID and assist them with the download process (See Appendix B)
➔ Record participant name and study ID

> **Tip**: If participants are not able/interested in downloading the LAMP app, staff can assist them with locating the step count feature on their smartphones. This feature is located within the Healthkit applications for iPhones and within the Google Fit application for Android.

### 6) Action planning and wrap-up

"Now that all of you have downloaded the app, we want to think about what you're most interested in keeping track of throughout the week. Through LAMP you can track sleep, step count, psychosis symptoms, anxiety, and depression."

**Discussion prompts:**
- What surveys are you thinking of taking?
- What do you want to learn about yourself?
- How might this info be helpful for you?

"Next week, we're going to bring in graphs that will show you how you've been doing each day of the week."

> **Tip**: The group facilitator can show a graph directly from LAMP or create another data visualization that captures the weekly results from one survey (e.g. sleep, psychosis, anxiety, etc.).

"The more surveys you do the more accurate your graph will be, so please try to take some surveys every day if you can. Any other questions or comments as we wrap up?"

# Modules

## Session 3: Understanding Lived Experience and Enhancing Self-Management Strategies

This week will build upon concepts covered during the previous week's session related to using digital technology to capture lived experience and exploring the connections between symptoms, behavior, and mood. The step count exercise will demonstrate how smartphones can passively capture data and help participants keep track of their physical activity. As a large group and individually, group participants will review and interpret their LAMP app survey results. Using this information, participants will consider the connections between their results and use new insights to set short-term, actionable goals related to their health. During wrap-up, participants will consider how they will implement their personal goal and how they will continue using LAMP over the coming week to capture their lived experience.

**Time:** 1 hour

**Session outline:**
1) Review group purpose
2) Step count exercise
3) Experience using LAMP app
4) Review of group members' aggregate LAMP data
5) Interpreting individual group member's LAMP data for goal setting
6) Wrap-up

**Facilitator pre-session preparation:**
- Confirm Wi-Fi access or bring hotspot device if Wi-Fi is limited in the building
- Confirm access to large screen to share survey results (e.g. TV screen, projector, monitor)
- Create digital poll and print link/instructions for participants (www.directpoll.com)

**Materials needed:** 5-7 iPads, large screen and/or projector, printout of LAMP graphs

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**1) Review group purpose**

"Hello everyone. Before we get started, I wanted to provide a quick review of what we're doing in this group for those of you who may not have been here last week. The purpose of this group is to learn about how you can use your smartphone to better understand your own experience and to find out how things like sleep, exercise, and socializing might be connected to your mood and how you feel overall.

Before I go any further, does anyone have any questions or comments from our last group meeting?"

## 2) Step count exercise

"Last week we talked about how we can use our phones to keep track of things like our mood, sleep, and symptoms over time. Before we talk about the LAMP app that you downloaded last week, we wanted to see what it's like to try to estimate something like how many steps we take each day. First, we'll guess how many steps we took yesterday and then we'll look at our phones to see what the real number is. How many of you have looked at your phone's step count in the past? For those of you who haven't, let me give you a sense how many steps you might take when walking to different locations nearby. Walking to the front door is _____ and walking to _____ is this many steps. This is just meant to help you guess at how many steps you might have walked yesterday.

How many of you think you walked 1,000 steps or more? How many think they took 2,000 steps or more? 3,000, 4,000, 5,000…"

> **Tip**: There are many ways to have group members accomplish the task of guessing the number of steps they've taken. Other options could include: doing an online survey or having participants write down their initial guess.

"Now we're going to use our phones to show us exactly how many steps we took yesterday. If you have an iPhone you should look for Apple's Healthkit icon which has a heart and for Android you should look for the Google Fit icon. We'll come around and help you find the right one."

➔ Assist group members to locate step count feature

> **Tip**: If there are new participants who were not there the previous week, staff may need to assist individuals to locate or download the relevant step count tracker.

**Discussion prompts:**
- Who guessed the exact number of steps?
- Who guessed more or less?
- Were you surprised by the difference?
- How many steps would you want to take in a day?
- How could you reach your step count goal?
- For those of you who had a high step count yesterday, how did you get that many steps?
- Do you feel different on days when you walk more?

## 3) Experience using LAMP app

"The reason we did that exercise is that it's sometimes hard to know exactly how much exercise we've gotten or to remember how exactly we were feeling every day of the week. That's one of the ways in which our phones can come in handy. It can help us to keep track of things like our mood, symptoms, sleep, and step count. Who remembers the LAMP app we talked about last week?"

**Discussion prompts:**
- Can anyone tell us what you can do with LAMP?
- What are the surveys about?
- How many of you were able to try out LAMP?
- What was it like for you to take the surveys?
- Did you encounter any glitches or challenges?
- What did you learn?

**4) Review of group members' aggregate LAMP data**

"Before we share your individual data with each one of you, we wanted to show the group's average mood, sleep, and symptoms for the past week."

➔ Project graphs onto large screen

> **Tip**: See Appendix C for examples of different data visualizations that can be used for presenting information. Staff may choose to show separate graphs for each survey (e.g. sleep, depression, anxiety, psychosis, step count) or a single graph that includes multiple data streams.

**Discussion prompts:**
- Overall, what was the group's mood on Wednesday compared to Saturday?
- Do you notice any connections between sleep, symptoms, and mood?
- In your own life, do you notice that your mood can be tied to some other things going on in your life like how much sleep you're getting, how many voices you're hearing, how much exercise you're getting, etc.?

> **Tip**: The discussion questions should be adapted depending on the group's data. For some groups, it may make sense to target results from just one survey and for others it may be feasible to discuss how some of the data streams may be connected to one another (e.g. sleep and mood)

**5) Interpreting individual group member's LAMP data for goal-setting**

"Now, we'd like to share your personal results with you so you can see how you did over this past week. We'll show you the results from your surveys as well as your daily step count and sleep."

➔ Share results with each group member

**Discussion prompts:**
- Is this surprising to you or does it line up with your experience from the past week?
- What do you notice? What do you make of that?
- Are there any connections between the results for your _____ and _____?
- Is it helpful to know this information?

**Goal-setting prompts:**
- Based on what you learned today are there any changes you want to make to improve your mood? What do you think would help?
- What's one small goal you could make for the coming week?
- How do you plan to use LAMP to measure whether this change is making a difference?
- Did you have any difficulty using the app or have any questions we could help answer?

> **Tip**: Staff should utilize the SMART goals framework (specific, measurable, achievable, relevant, and time-based) to help group members create action plans for the following week (Appendix C). Using an action plan worksheet (Appendix C), staff may also address any challenges to implementation and strategies for addressing barriers.

**6) Wrap-up**

"We're going to come back together now to talk about what we learned and whether we want to make any changes in the coming week."

**Discussion prompts:**
- What did you learn that was interesting to you? Anything surprising?
- Did anyone come up with some goals for next week?
- How do you plan to use LAMP to help you measure progress towards your goal?

"For next group, we'll bring in your data to see how you did over the week and whether making a change in your habits made a difference. Remember, the more surveys you do the better your graphs will be, so please try to take some every day if you can. Any other questions or comments as we wrap up?"

# Modules

## Session 4: Making Informed Decisions about Health Apps and Committing to Action

In this final group session, participants will report on their progress towards reaching the personal health goal they set during the previous week. In addition to reflecting on their experience, participants will again review their personalized LAMP survey data and consider whether their change in behavior may be connected to other aspects of their lived experience. The second part of the group will focus on teaching participants helpful criteria to help them make informed decisions when downloading apps. Participants will review app descriptions in the app store and will consider an app's privacy/security, trustworthiness of the app developer, recommendation from friend/family/medical professional, and when the app was last updated. At the end of the session, participants will reflect on what they learned throughout the four-week group and will consider how they will continue using smartphone technology to make progress towards their health goals.

**Time:** 1 hour

**Session outline:**
1) Review group purpose
2) LAMP survey data and progress towards health goal
3) Decision-making prior to downloading apps
4) Group member app evaluation criteria
5) New considerations for app evaluation
6) Informed decision-making
7) Reflection: technology-supported health and recovery
8) Committing to action: healthy living and self-management

**Facilitator pre-session preparation:**
- Confirm Wi-Fi access or bring hotspot device if Wi-Fi is limited in the building
- Confirm access to large screen to share survey results (e.g. TV screen, projector, monitor)
- Create digital poll and print link/instructions for participants (www.directpoll.com)

**Materials needed:** 5-7 iPads, large screen and/or projector, printout of LAMP graphs

### 1) Review group purpose

"Hello everyone. Before we get started, I wanted to provide a quick review of what we're doing in this group for those of you who may not have been here last week. The purpose of this group is to learn about how you can use your smartphone to better understand your own experience and to find out how things like sleep, exercise, and socializing might be connected to your mood and how you feel overall.

Before I go any further, does anyone have any questions or comments from our last group meeting?"

**2) Progress towards health goals**

"Last week we reviewed our personal survey data from the LAMP app. We looked at a variety of things including step count, sleep, mood, and psychosis to see if there might be any connections between them. Based on that information, we created some goals to see if making some small changes in your behavior like getting more sleep might affect other things like your mood or psychosis symptoms. We also asked that all of you keep doing the LAMP surveys to help you track of these things.

Before we give you your graphs to look at, would anyone like to share about how you did working towards your goal?"

**Discussion prompts:**
- What was your goal and were you able to reach it?
- If yes, what did it feel like to make this change? Do you think it affected other things in your life?
- If no, what got in the way of making this change? What could you do differently next week?
- What was it like for you to take the LAMP surveys?
- Did you encounter any glitches or challenges?
- What did you learn?

**3) LAMP survey data**

"Now, let's look at our data from this past week and see what we learned."

➜ Share results with each group member

**Discussion prompts:**
- Is this surprising to you or does it line up with your experience from the past week?
- What do you notice? What do you make of that?
- Do you think there is any connection between the change you made and what you're seeing here?
- If yes, why or how do you think this happened?
- If no, what change do you think you would need to make in order to see a change?

> **Tip**: If some participants chose not to download LAMP during the previous session, staff can review step count data instead of LAMP data.

**4) Decision-making prior to downloading apps**

"I know some of you have mentioned wanting to find more apps related to _____ and we wanted to shift gears now to talk about how to pick apps from the thousands that are in the apps store. We're going to have you look up two app descriptions in the app store and then we'll vote about whether you would want to download them or not. If you look on the big screen you'll see the two apps that we'd like you to find in the apps store.

**Headspace: Meditation & Sleep**
Relax, focus & manage stress
Headspace Inc.
#7 in Health & Fitness
★★★★★ 4.9, 469.6K Ratings
Free · Offers In-App Purchases

**Relax Now: Hypnosis Meditation**
Mindfulness & Deep Relaxation
TapMedia Publishing
★★★★⯪ 4.6, 44 Ratings
Free

→ Break participants into small groups

→ Assist group members in locating app descriptions in the app store

**Tip**: Given that the digital landscape is constantly evolving, it may be necessary to select different apps for this exercise if the apps listed above no longer exist. One app should meet these criteria: strong privacy policy, trustworthy source, recommendation from a known health professional, and updated within the past 6 months. The other app should not meet these criteria, but should be comparable to the other app in terms of quality of icon design, star rating, and user reviews. For further details visit the American Psychiatric Association's app evaluation website which you can find through using a search engine.

**5) Group app evaluation criteria**

"We're going to come back together as a group and vote on whether or not you would download these two apps. After that, we'll have you take another online survey about what you look for when you're evaluating an app in the app store."

→ Distribute paper instructions for accessing the online survey link or display link on screen

**Survey (Appendix D)**

| **Would you download Headspace: Meditation & Sleep?** | **Would you download Relax Now: Hypnosis Meditation?** |
|---|---|
| o  Yes | o  Yes |
| o  No | o  No |

**What helps you decide whether to download an app?**

| | | |
|---|---|---|
| o  Low cost | o  Recommendation from apps review website | o  Recommended by your doctor |
| o  Number of times app has been downloaded | o  Visual design is pleasing | o  Recommended by a family member |
| o  Number of stars out of five | o  Seems fun to use | o  Recommended by a peer |
| o  Positive reviews from users | o  Seems easy to use | o  Developed by a trusted source |
| o  One of the first apps listed in your search | o  Data is protected by app | o  Other |

**Post-survey discussion prompts:**
- What were your reasons for voting "yes" or "no" for "Headspace" and "Relax Now"?
- What did you look for in the app description? What criteria was important for you to consider?

**6) New considerations for app evaluation**

"Based on this discussion, it sounds like many of you use the user reviews, star ratings and icon images to help you decide whether you want to download an app. We wanted to introduce you to some other things you might think about when reading the app store description. In pairs, we'd like you to re-read the app store description and answer the questions in the handout"

| Relax Now: Hypnosis Meditation | | |
|---|---|---|
| Mindfulness & Deep Relaxation | | |
| TapMedia Publishing | | |
| ★★★★☆ 4.6, 44 Ratings | | |
| Free | | |
| Can you easily find a privacy statement? | Yes | No |
| Do you trust the person who made it? | Yes | No |
| Was the app updated within the past 6 months? | Yes | No |
| Is the app recommended by your doctor? | Yes | No |
| Is the app recommended by a friend or family member? | Yes | No |

| Headspace: Meditation & Sleep | | |
|---|---|---|
| Relax, focus & manage stress | | |
| Headspace Inc. | | |
| #7 in Health & Fitness | | |
| ★★★★★ 4.9, 469.6K Ratings | | |
| Free · Offers In-App Purchases | | |
| Can you easily find a privacy statement? | Yes | No |
| Do you trust the person who made it? | Yes | No |
| Was the app updated within the past 6 months? | Yes | No |
| Is the app recommended by your doctor? | Yes | No |
| Is the app recommended by a friend or family member? | Yes | No |

➔ Break participants into small groups/pairs

➔ Pass out handout (See Appendix D) and help participants to answer the questions

**7) Informed decision-making**

"Now, we're going to come back together and vote again on whether or not we would download the apps."

➔ Distribute paper instructions for accessing the online survey link or display link on screen

**Survey (Appendix D)**

**Would you download Headspace: Meditation & Sleep?**

o   Yes
o   No

**Would you download Relax Now: Hypnosis Meditation?**

o   Yes
o   No

**Post-survey discussion prompts:**
- Did your reasons for voting "yes" or "no" for "Headspace" and "Relax Now" change?
- What did you learn from looking more closely at the app descriptions?
- Was there anything concerning about either app?

**Tip**: Ideally, patients will take the new evaluation criteria (privacy/security, app developer, recommended by trustworthy person, updated within the past 6 months) into consideration during the second round of voting. This exercise will spark a conversation around the importance of taking a closer look at an app before downloading it.

### 8) Reflection: technology-supported health and recovery

"As you all know, this is our last week together and I wanted to take some time to talk about what you may have learned along the way. We've talked about a lot of different things related to how you can use smartphones to get a better understanding of yourself and to set goals related to your health. Before we wrap up, I wanted to go around the room and hear from people about their experience."

**Discussion prompts:**
- What is one new thing you learned by participating in this group?
- What was surprising?
- What are you wanting to learn more about?

### 9) Committing to action: healthy living and self-management

"Before we go, I'd like all of us to commit to making one small change related to our health. This could be drinking more water, going for walks a couple of times a week, or taking our medication every day. Once you've made that small goal, think about how you could use technology to help you reach that goal. Maybe you can set a reminder in your phone to take your medication? Or use your step count feature to see how much exercise you've been getting?"

**Discussion prompts:**
- What are some goals you came up with?
- What might get in the way of you reaching this goal?
- How could technology including LAMP and other apps help support you?

"It's been such a pleasure getting to know all of you over the past four weeks. You all have set some great health goals and I hope that you can continue to use your phones to help you reach your goals."

# Appendix

## Session 1: Digital health usage and opportunities

**Handout:**
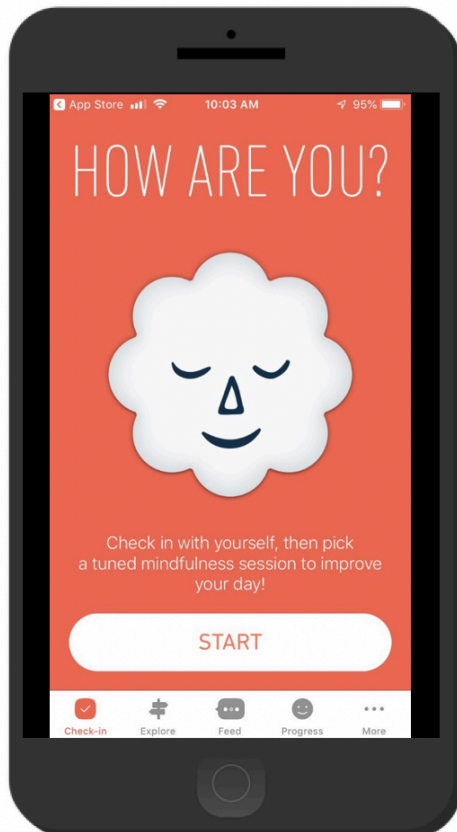
# Stop, Breathe & Think

1) Complete the "**How are you?**" exercise

*What exercises did the app recommend?*

2) Try out the "**Progress**" feature at the bottom of your screen

*What can you measure over time?*

# Have you ever used a smartphone app to help with:



| Category | Value |
|---|---|
| Sleep | 5 |
| Exercise | 4 |
| Diet | 2 |
| Mindfulness | 1 |
| Managing symptoms | 0 |
| Mood | 0 |
| Stress | 0 |
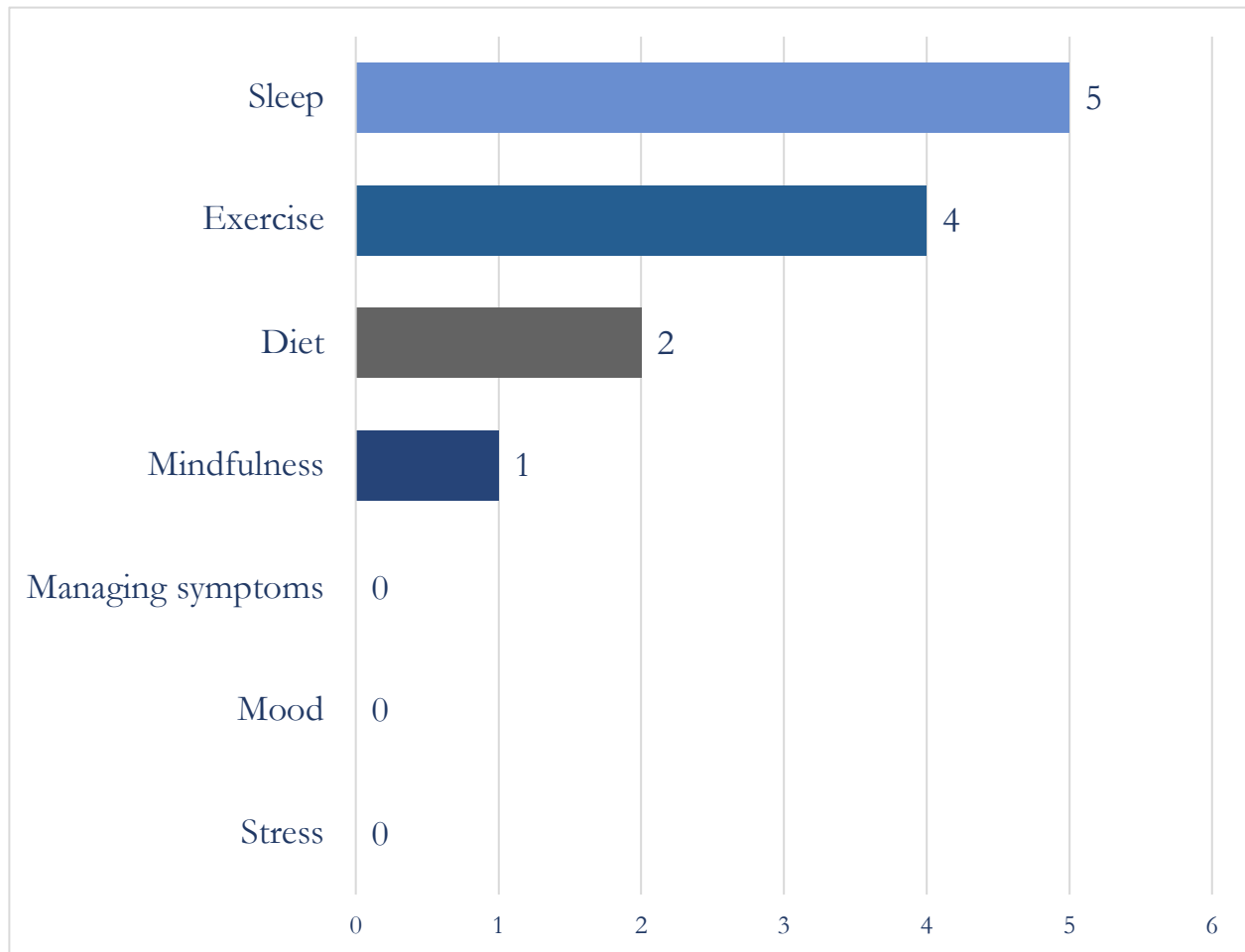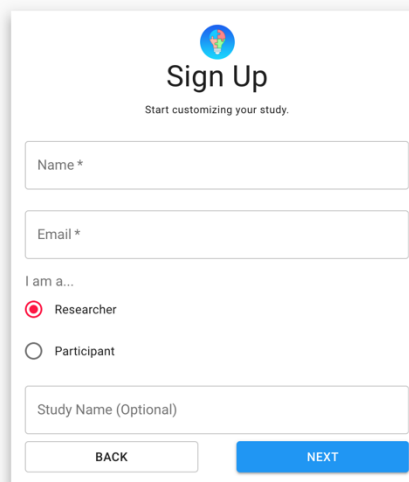
## Session 2: Capturing Lived Experience

**LAMP Instructions:**

1. To Register for a LAMP account, please go to https://dashboard.lamp.digital/#/login and select "SIGN UP."
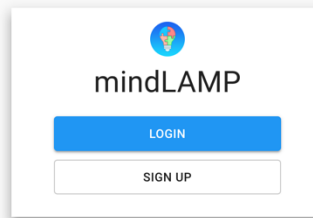


2. Please Enter your name, email address, and optional study name.  Select "NEXT"

3. To load preset surveys (GAD-7, PHQ-9, Sleep, Psychosis, Medication) and preset games (Jewels A, Jewels B, Spatial Span, Cats and Dogs) select "LOAD PRESET SURVEYS AND GAMES." To add a custom Survey select "ADD CUSTOM SURVEY + "
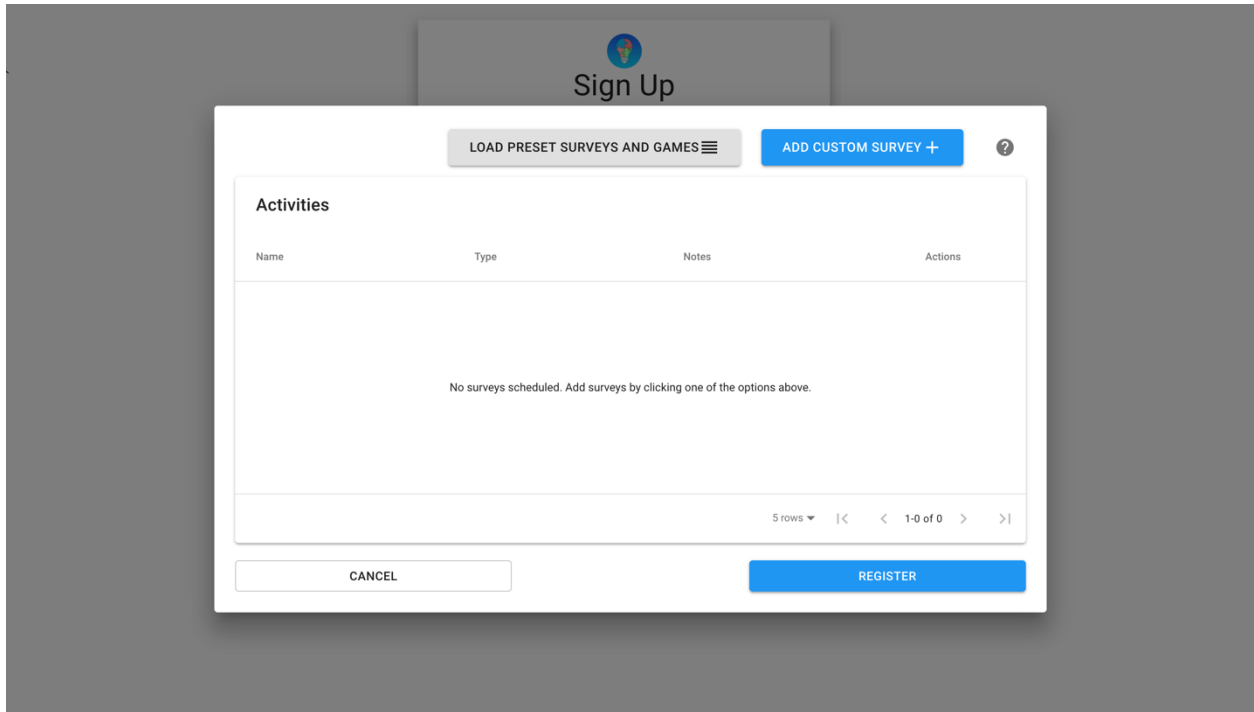


1. To rename your Survey, select the Pencil icon.  To add questions to your survey, select the Question icon. To schedule notifications for your survey or game, select the Calendar icon.  To delete a survey or game from your list, select the Trash icon.
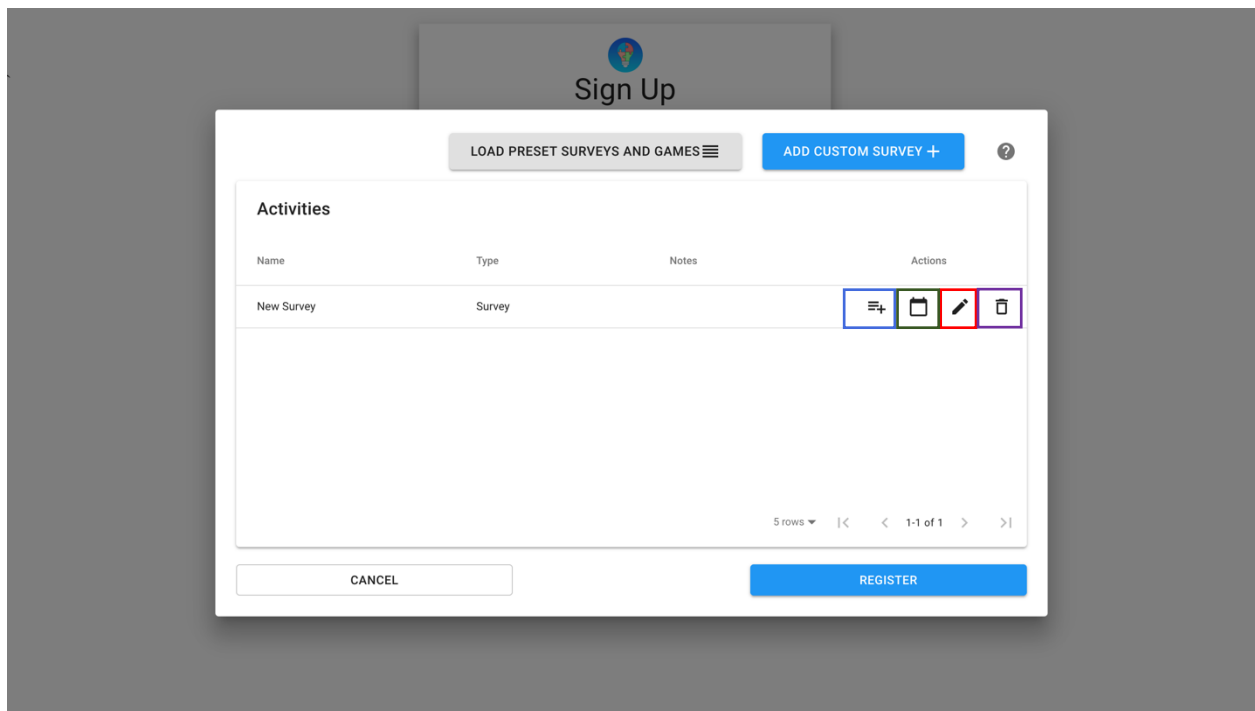
# When you're having a hard time, what helps you to feel better?

| Category | Value |
|---|---|
| Talking with friends and family | 6 |
| Listening to music | 6 |
| Playing games | 6 |
| Eating healthier foods | 6 |
| Getting more sleep | 6 |
| Getting more exercise | 5 |
| Taking my medication | 4 |
| Seeing my doctor and/or therapist | 4 |
| Writing in my journal | 2 |
| Watching TV/Youtube | 2 |
| Doing relaxation exercises | 2 |
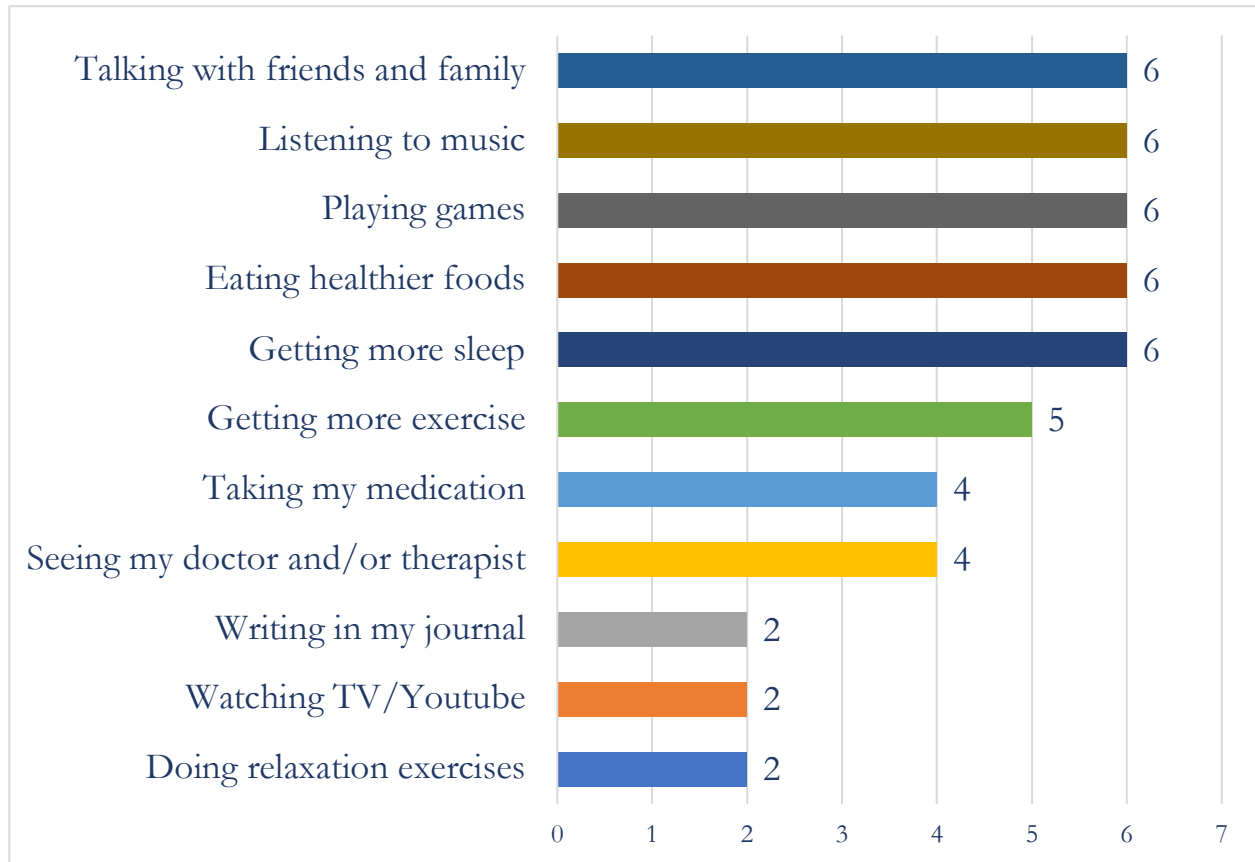
## Session 3: Understanding lived experience and enhancing self-management strategies

Data Visualizations

# Average Daily Mood

Mon Tue Wed Thu Fri Sat Sun

## SMART

**S** — **Specific**
Who, What, Where, When, Why, Which

Define the goal as much as possible with no ambiguous language.

WHO is involved, WHAT do I want to accomplish, WHERE will it be done, WHY am I doing this (reasons, purpose), WHICH constraints / requirements do I have?

**M** — **Measurable**
From and To

Can you track the progress and measure the outcome?

How much, how many, how will I know when my goal is accomplished?

**A** — **Attainable**
How

Is the goal reasonable enough to be accomplished? How so?

Make sure the goal is not out of reach or below standard performance.

**R** — **Relevant**
Worthwhile

Is the goal worthwhile and will it meet your needs?

Is each goal consistent with other goals you have established and fits with your immediate and long term plans?

**T** — **Timely**
When

Your objective should include a time limit. "I will complete this step by month/day/year."

It will establish a sense of urgency and prompt you to have better time management.

---

## Action Plan

*Long-Term Goal:*

SHORT-TERM GOAL:

WHAT:

WHERE:

WHEN:

HOW OFTEN:

ANTICIPATED BARRIERS:

PLANS TO OVERCOME BARRIERS:

| My confidence that I can reach this goal: | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| Not at all Confident | | | | | | | | | Totally Confident | |

**Follow Up Plan:**

## Session 4: Making informed decisions about health apps and committing to action



**Relax Now: Hypnosis Meditation**
Mindfulness & Deep Relaxation
TapMedia Publishing
★★★★☆ 4.6, 44 Ratings
Free

| | | |
|---|---|---|
| Can you easily find a privacy statement? | Yes | No |
| Do you trust the person who made it? | Yes | No |
| Was the app updated within the past 6 months? | Yes | No |
| Is the app recommended by your doctor? | Yes | No |
| Is the app recommended by a friend or family member? | Yes | No |



**Headspace: Meditation & Sleep**
Relax, focus & manage stress
Headspace Inc.
#7 in Health & Fitness
★★★★★ 4.9, 469.6K Ratings
Free · Offers In-App Purchases

| | | |
|---|---|---|
| Can you easily find a privacy statement? | Yes | No |
| Do you trust the person who made it? | Yes | No |
| Was the app updated within the past 6 months? | Yes | No |
| Is the app recommended by your doctor? | Yes | No |
| Is the app recommended by a friend or family member? | Yes | No |

# Would you download "Relax Now"?

## Pre



| | Yes | No |
|---|---|---|
| | 6 | 6 |

## Post



| | Yes | No |
|---|---|---|
| | 1 | 13 |

# Would you download "Headspace"?

## Pre



| | Yes | No |
|---|---|---|
| | 7 | 5 |

## Post



| | Yes | No |
|---|---|---|
| | 9 | 5 |

# What helps you to decide whether to download an app?

| Category | Value |
|---|---|
| positive reviews from users | 11 |
| low cost | 11 |
| number of stars out of 5 | 9 |
| seems easy to use | 8 |
| seems fun to use | 8 |
| visual design is pleasing | 8 |
| developed by a trusted source | 7 |
| recommended by your doctor | 7 |
| recommendation from apps review website | 7 |
| recommended by a peer | 6 |
| recommended by a family member | 6 |
| one of the first apps listed in your search | 6 |
| number of times app has been downloaded | 6 |
| data is protected by app | 5 |