

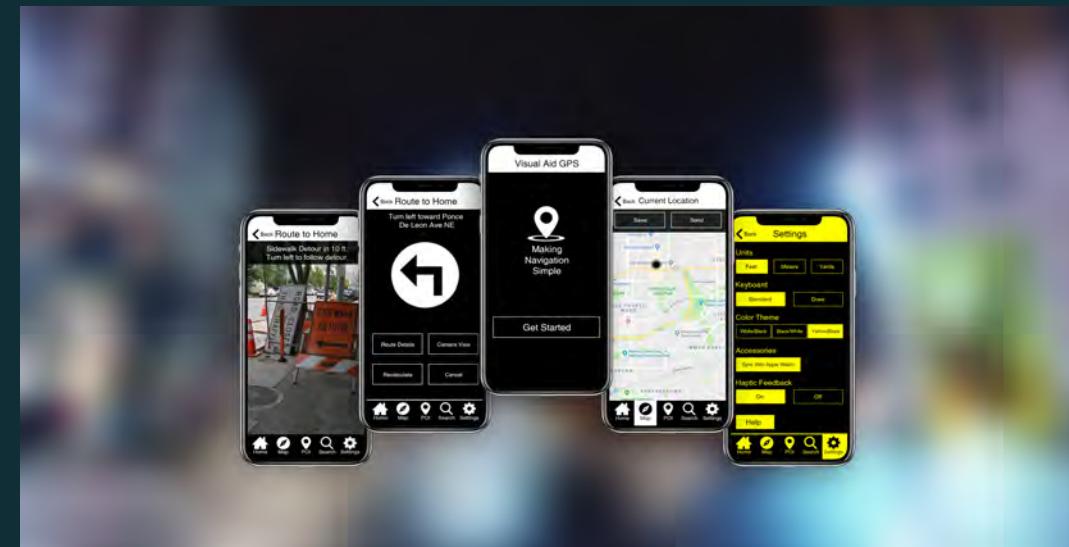
Building and Implementing a Digital Mental Health Ecosystem

Digital Tools and Therapeutics

Trina Histon, PhD
Care Management Institute
Kaiser Permanente


Today we will cover...

- Kaiser Permanente's National Mental Health & Wellness Strategy
- Why build a digital mental health ecosystem?
- Defining the problem to solve- Human Centered Design
- How do you choose apps?
- How do you embed tools into workflow?
- What are we learning?
- Next Steps



National Mental Health & Wellness Strategy

Mental Health & Wellness Footprint



\$30 million+
educational spend to increase number of
mental health care professions



\$700 million+
on investments in new
mental health offices,
buildings, etc.


281
training slots
program-wide



\$2.8 million
community health spend
toward ACEs, Trauma, and
Systemic Racism

97%
of urgent initial
appointments provided
within 48 hours
(target 90%)

150,000+ patients
provided a digital
therapeutic app by a
mental health clinician



668k+
members
downloaded a
digital self-care
app



2,662,489 pageviews to
Find Your Words

800+
KP psychiatrists

5.4 Million+
scheduled (internal) visits
completed annually



4,200+
KP therapists

Why Build a Digital Mental Health Ecosystem?

Project Chamai

Problem

- Today, an estimated 20-25% of members who present to mental health specialty care are below the clinical threshold for depression and anxiety.
- We lack a systematic way to offer these non-specialty care options.

Opportunity

- Meet growing member and employer demand for easily accessible options for emotional health and well-being
- Better serve our members with a wider range of effective and less resource-intensive choices
- Prevent worsening symptoms and promote overall health
- Allow us to focus specialty care resources on those with more acute needs



My job is too much

My son left for college.

I'm feeling more overwhelmed. What's happening to me?

I'm lonely!

I want to work on myself

My friend is seeing a therapist.

It's been raining a lot recently.

I'm stressed and losing sleep.

I just moved here.

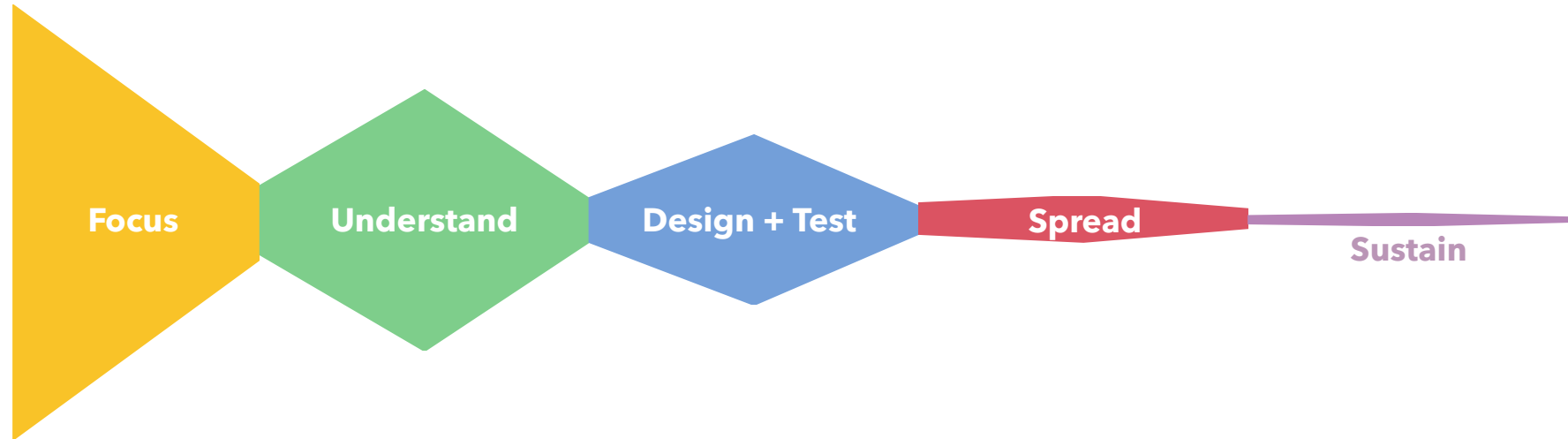
Therapy

4 2 15 8 3 6 19 2 9 3 7 5 3 2 8 12 3

More Opportunities & Convenience

Leveraging Human-Centered Design

Design Process



We partner across KP to identify breakthrough opportunities.

We collaborate to gather evidence, current state experiences, leading practices, and metrics to inform design of new programs or spread of leading practices.

We embed with you to design and test solutions for optimal spread.

We enable spread by developing tools, playbooks, measures, and other key enablers to drive adoption and achieve desired outcomes.

We serve as strategic partners to connect the dots across markets by providing expert support for enterprise-wide deployment.

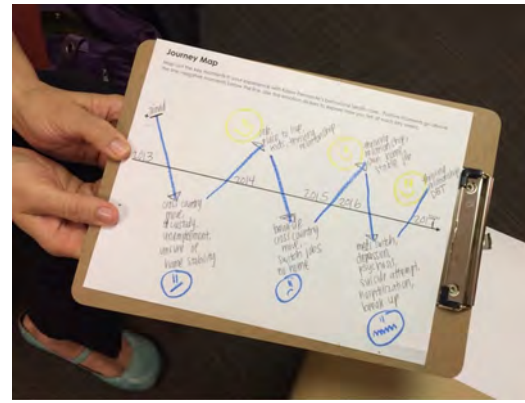
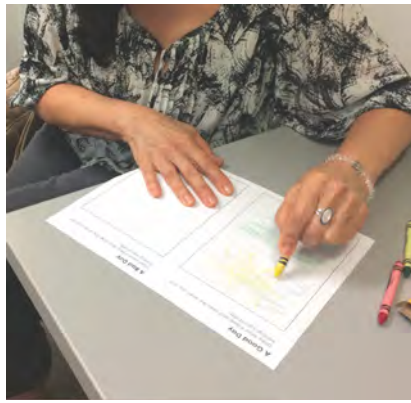
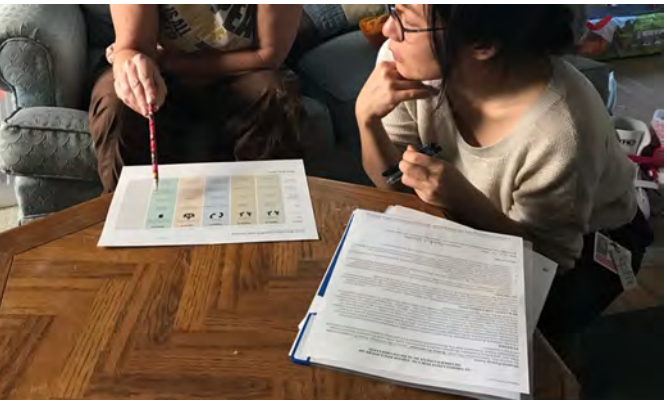
We support continuous improvement and innovation with evaluation, analytics and design.

Human-Centered Design



Our Field Work

To design new offerings that position our members' needs at the center, we leveraged the following methods and mindsets to develop human-centered solutions for testing and deployment.



Learning from Clinicians and Patients in Multiple Care Pathways



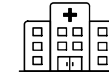
**Depression
Care**



**Specialty
Behavioral
Health**



Triage



**Behavioral
Health
Consultants**



**Care
Navigators**



**Primary
Care**



**Health/
Wellness
Coaching**



Synthesis & Insights

Trust

Trust is a prerequisite for engaging members in their care.

“I want someone I respect as an expert to tell me what my behavior stems from and strategies to resolve it.”

Language

A member's experience in mental health can be shaped by the language used by clinicians and staff.

“I call it a ‘workshop’ instead of ‘group’ because the word ‘group’ implies, to a lot of patients, sitting around in a circle divulging your innermost deepest darkest secrets.”

Areas of opportunity from design research

Set expectations
to create new
opportunities

Empower
members to help
themselves

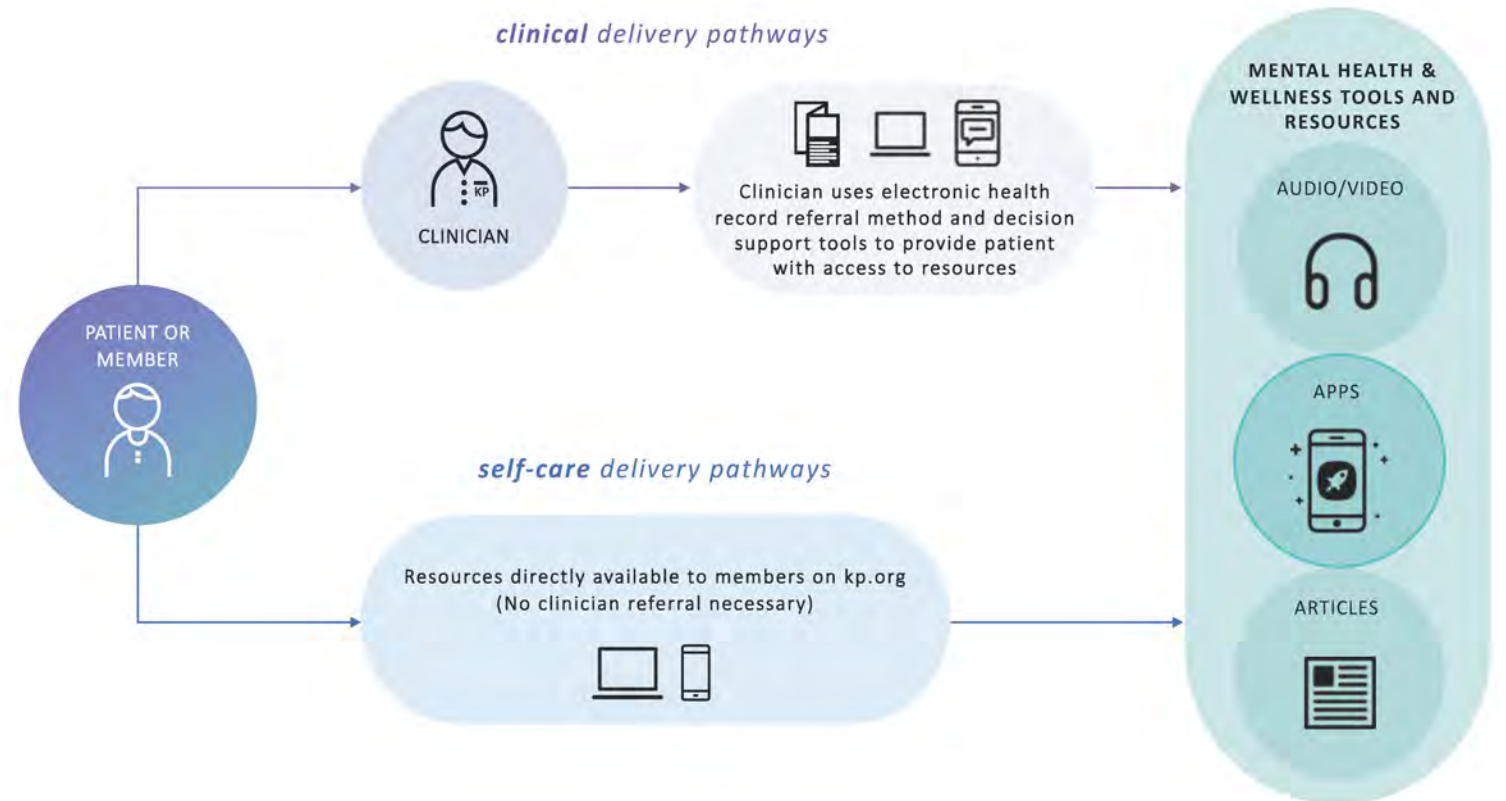
Build on the trust
that members share
with their providers

Make the right
support easily
accessible to
members when
they need it the
most

Digital Mental Health Ecosystem includes methods of referral leading to high rate of adoption by clinicians

The Chamai Ecosystem in addition to tools and resources includes:

- **EMR referral methods** were developed for clinicians to refer patients.
- **Clinician training and referral methods** were designed with and for clinicians to lower the barrier of adoption.
 - KP clinician adoption rate in 1/2020 was 72%
 - Germany and UK have reported much lower adoption rates of digital tool referral programs: 2%* and 19%* respectively

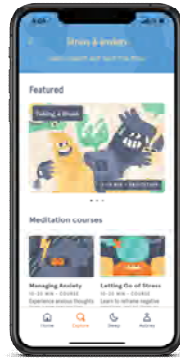


OUR SOLUTION – A CURATED APP PORTFOLIO

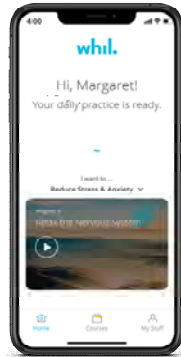
Calm



headspace



whil.



myStrength



SilverCloud



thrive



Mindfulness / Meditation Apps

Cognitive Behavior Therapy Apps

Diane F.

“My stress level has been off the charts due to everything going on.

But with my app — now it’s okay we can get through it. I’m not crying; I’m not breaking down into tears. I can handle it, and I know it will get better. “

“But then during the day, if my job starts getting overwhelming, because it is an overwhelming position, instead of like turning on the TV, I turn on the music part of the app, and it just kind of lets my mind go so I can do my job and not worry about what’s going on in my other life.”





Which Apps..

Digital Therapeutic (App) Selection Guidance in 2017

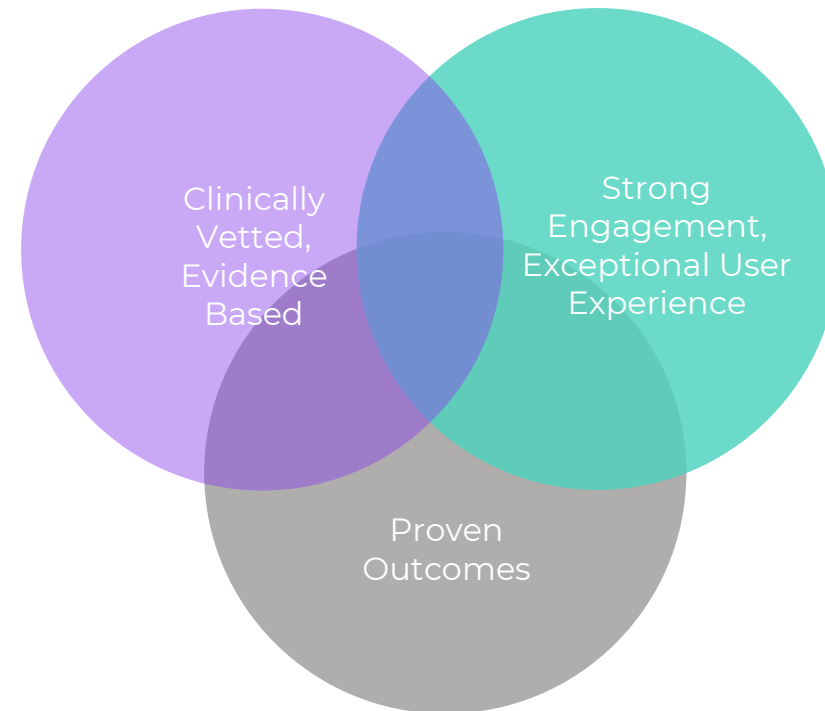
We have developed a set of Criteria to evaluate our current, and any future, potential 3rd party tools and applications.*

Clinical / Evidence Base

- **Cognitive Behavioral Therapy (CBT) or Meditation/Mindfulness-based.**
- **Addresses both anxiety and low mood**
- **Reporting/PRO collection**
- Automated tailoring of activities/recommendations based on PRO collection
- Gamification/positive reinforcement
- Logs and displays needs, past use, and accomplishments
- **Links to crisis support services**
- **Experimental trials to establish efficacy**

Engagement / User Experience

- **Simple and intuitive interface**
- **Approachable language**
- **Mobile-optimized**
- Pleasant experience
- Designed for engagement over time
- Utilizes reminders/nudges



Guidelines Adapted from
APA / JMIR Evaluation Models

KP's App Evaluation Framework

Mental Health and Wellness Apps in 2022

Purpose

The framework can be used to assess the shortlisted Chamai apps on their desirability, feasibility, and viability in the marketplace and at KP.

Desirability

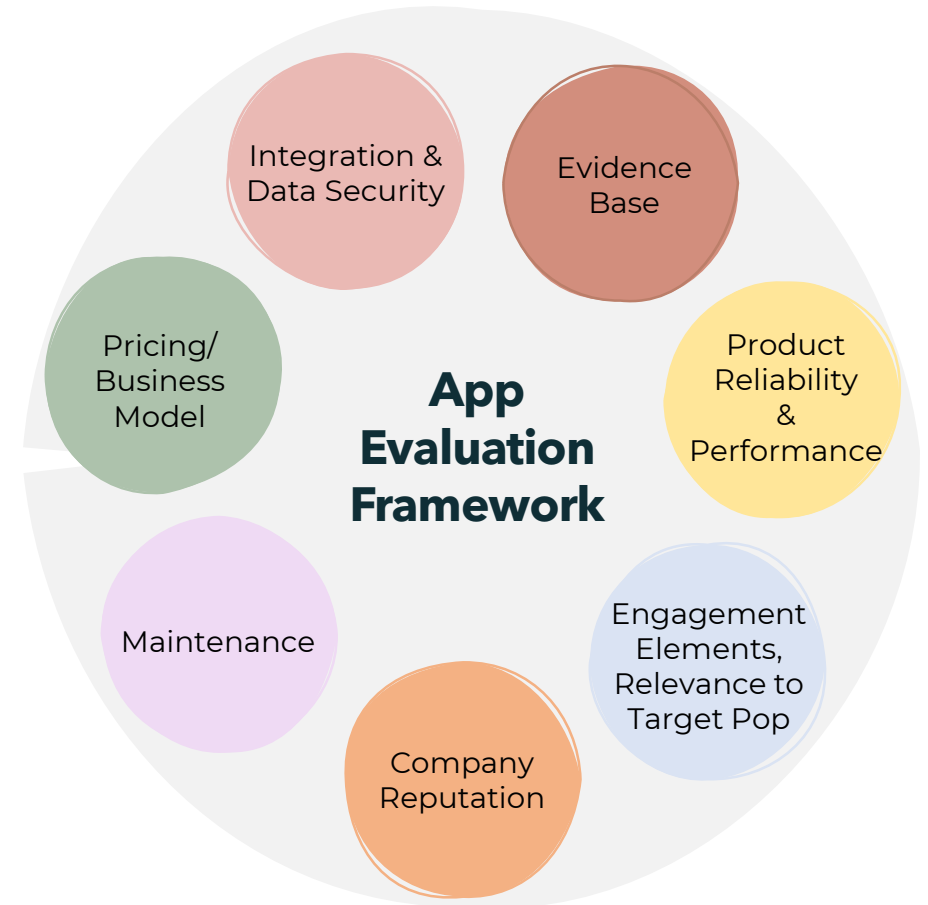
Engaging interventions and user experiences will be critical for meeting youth needs.

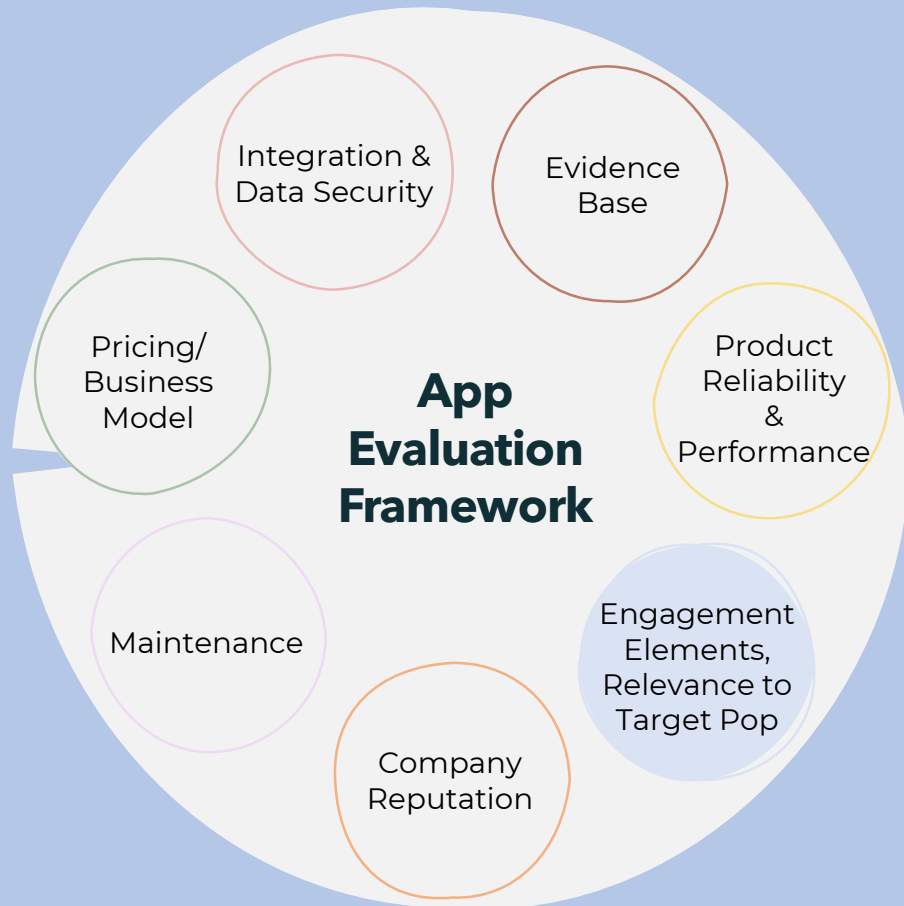
Feasibility

Though this is a nascent space, vendors will need to invest in improving and developing their products to offer scalable solutions.

Viability

Vendor willingness to work toward KP's standards and requirements will be an important indicator at this stage.





Engagement Elements, Relevance to Target Population

- Suits participants with varying levels of capabilities
- Is it a comprehensive solution? Are the resources inside the app (vs. linking you to resources outside the app)
- Am I empowered to learn, empowered to use the tools? Skill Building? Does it put content in context?
- Includes user progress tracking capabilities (e.g., score)
- Diverse and culturally inclusive product, clear representation of lived experience (e.g., communication, terminology, language, imagery, and approaches including peer support)
- Provides push-ready & customizable collateral
- Incorporates a live human component or AI (e.g., health coach, can integrate with a KP provider)
- Available in multiple languages
- Can be accessed via mobile devices (mobile optimized)
- Leverages engagement elements (Screening, Self-monitoring, data visualization, tailored social features and support, gamification, delivery of CBT or M/M (i.e., ai chatbot, chatting with coach, peer support))

Efficacy

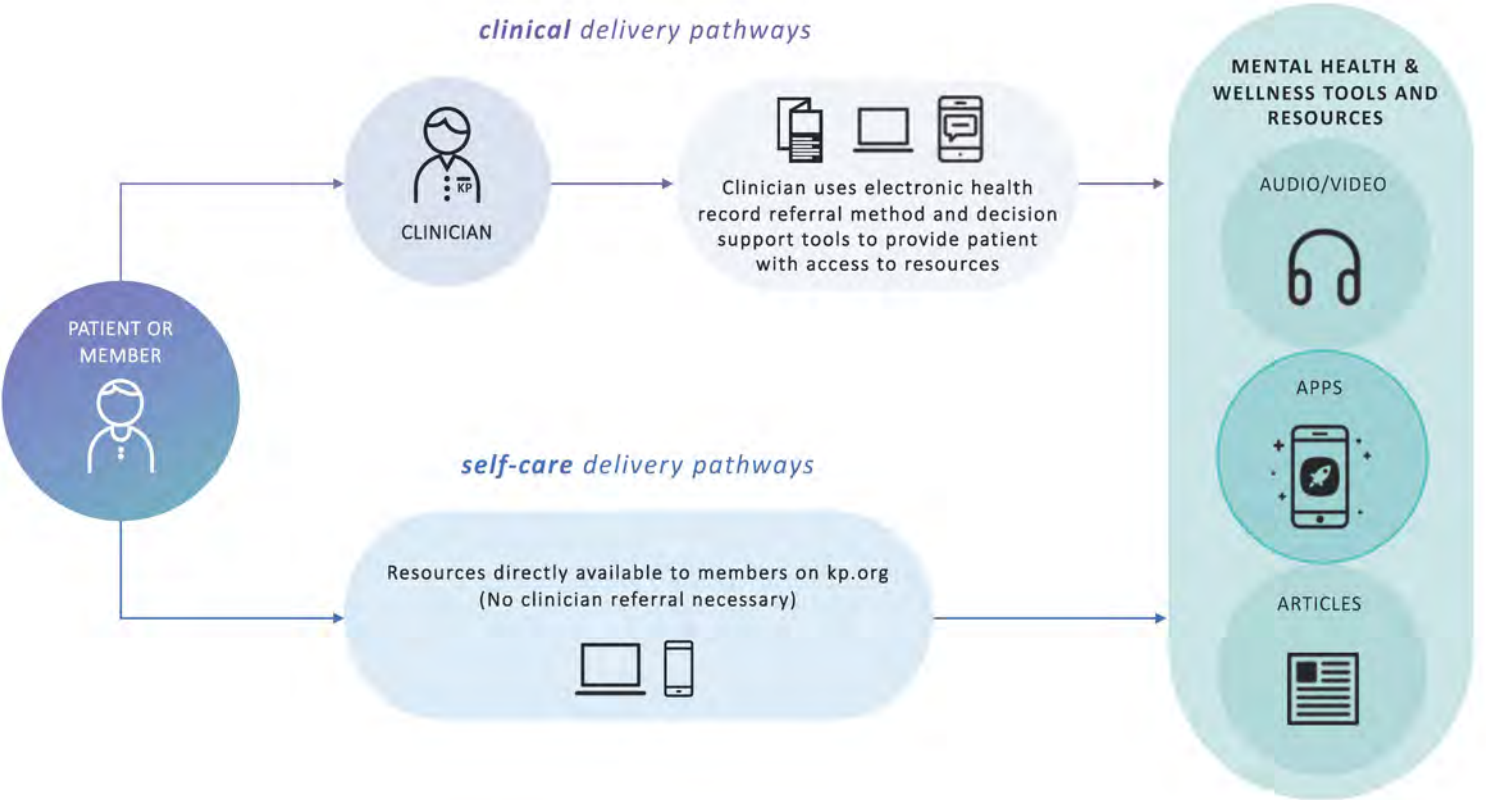
Literature indicates overall efficacy of CBT and Mindfulness and Meditation practices in all modalities with modest effect sizes





In the Real World- How to Refer to Apps and Content

Digital Mental Health Ecosystem includes methods of referral leading to high rate of adoption by clinicians



APP REFERRING PROCESS

Example Process of Referring Patients to Apps in in-person or telehealth-enabled

Assessment

Discusses the nature and duration of challenges and symptoms

Recommendation

Clinician gives specific skills and techniques to work on before the next appointment

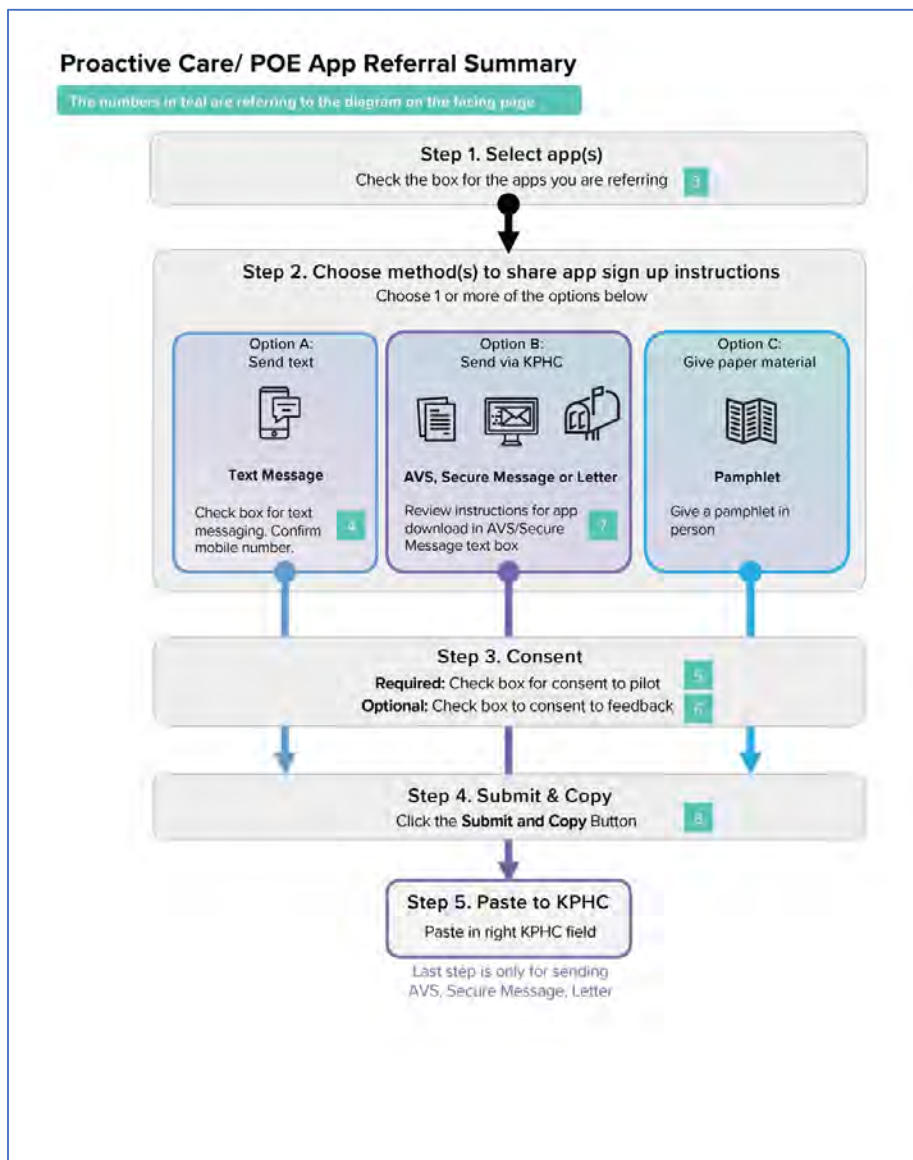
Documentation & Instructions

Patient receives app referral tear sheet and EHR-generated message/text with recommendations for app usage and specific download instructions

Follow-Up Visits

Clinician schedules follow-up at recommended intervals

Leveraging Proactive Care



Proactive Care / POE Checklist App Referral Tips

V 2.19.19

* Sticky Note – Identify who you referred to Chamal
Use Sticky Note to jot notes on which app, reasoning, patient comments/feedback. These notes are only seen by you, are not part of the patient's chart, and can be referenced the next time you access the patient's chart.
Icon changes when you add a sticky note.

- Go to Proactive Care
- Switch to Provider View
Scroll down to see the "Emotional Health and Wellness" section
- Select the App(s)
If an app had been referred to patient before, a date will appear in "Last Submitted: MM/DD/YY"
- Text Message
• See an example below
• Verify or enter mobile number
• Click on field to edit if needed.
- Consent to Pilot
Pls refer to talking points:
• This is a pilot
• 6 month access
• Data from apps is not shared with KP
- Consent to Feedback
• After a couple of months, KP will email address (on file) an online survey
• See an example below
• Option in the survey to have a phone conversation about their experience.
- AVS/Secure Message Text
The text box automatically populates with app sign up instructions based on your selections.
You may use this text for AVS or Patient Message in HealthConnect
- Submit your selections
This will submit, copy the text, and clear your selections.
- Paste into AVS/Patient Message
If desired, paste app sign up instructions into Health Connect field (CTRL-V)

Example Text Message
KP: Joe, your clinician recommended Headspace. Go to bit.ly/KPhys. Enter code: SLKAISERCODE. Download app or use in browser. Reply STOP to opt out.


Example Email for Feedback
Hello,
My name is Aubrey, from Kaiser Permanente and I am working with your care provider to understand a new resource you may be using. I understand that you generously offered to provide feedback about your experience with this digital tool. Our goal is to learn about your experience as we are piloting digital tools and seek to improve the quality of care and experience for all our members.
Please [click here](#) to complete this brief survey.



MAKING THE RIGHT THING EASY TO DO

Clinician App Guides

Tear-off Pads for Members



Meditate:

- Sleep**
 - 7 Days of Sleep
 - Deep Sleep
 - Gently Back to Sleep
 - Sleep Rhythm
 - Sleep Stories under "Sleep"
 - Sleep Music under "Music"
- Anxiety**
 - Calming Flight Anxiety
 - Anxiety Release
 - 7 Days of Calming Anxiety
 - Mindful Walking
 - Emergency Calm
- Stress**
 - Daily Calm under "Home"
 - Untangling Physical Pain
 - 21 Days of Calm
 - 7 Days of Managing Stress
 - Body Scan
 - Forgiveness
 - Emergency Calm
- Relationships**
 - Loving-Kindness
 - Forgiveness
 - Relationship with Self
 - Relationship with Others
 - Non-judgment
- Focus**
 - Staying on Track
 - 7 Days of Focus
 - Deep Concentration
 - Commuting
 - Returning to Now
 - Mindfulness at Work
 - Focus Music under "Music"
- Emotions**
 - Easing Depression
 - 7 days of Happiness
 - 7 days of Gratitude
 - 7 days of Self-Esteem
 - Forgiveness
 - Emotions Series
 - Breaking Habits Series

Explore More:

Bottom menu:

- Sleep** sleep stories, music, soundscapes
- Music** relaxing sounds
- More / Calm Kids** content for kids
- More / Calm Masterclass** expert audio series on specific topics
- More / Calm Body** mindful movement
- More / Breathe** relaxing breathing bubble

When to use Calm

Think about a time of day you have 5-10 minutes to yourself. Use at least 3x per week. As with many things, it might take practice and time to see results.

Best time for me to use Calm:




Explore

- Meditation basics**
 - MEDITATION COURSES
 - Basics
- Stress & anxiety**
 - MEDITATION COURSES
 - Managing Anxiety
 - Letting Go of Stress
 - Restless sleep
 - Transforming Anger
 - SIDS OR SINGLE MEDITATIONS
 - Feeling Overwhelmed
 - Burned Out
 - Panicning
 - Unwind
 - Restore
 - Reset
- Falling asleep**
 - WIND DOWNS
 - Switching Off
 - Falling Back to Sleep
 - Deep Breathing
- Personal growth**
 - MEDITATION COURSES
 - Relationships
 - Self-Esteem
 - Happiness
 - Acceptance
 - Appreciation
 - Balance
- Work & productivity**
 - MEDITATION COURSES
 - Finding Focus
 - Prioritization
 - Productivity
 - SINGLE MEDITATIONS
 - Focus
 - Listening to Others
 - Difficult Conversations
 - Taking a Break
 - Presentations
- Life challenges**
 - MEDITATION COURSES
 - Reframing Loneliness
 - Handling Sadness
 - How We Forgive Ourselves
 - Grieving
 - Navigating Change
 - Dealing with Regret
 - SINGLE MEDITATIONS
 - Managing Conflict
- Physical health**
 - MEDITATION COURSES
 - Mindful Eating
 - Coping with Cravings
 - Pain Management
 - Pregnancy
 - Coping with Cancer
 - SINGLE MEDITATIONS
 - In Pain
 - EYES-OPEN EXERCISES
 - Connect With Your Body
 - Connect With the World
 - Walk Off Frustration
 - Walking at Home

When to use Headspace

Think about a time of day you have 5-10 minutes to yourself. Use at least 3x per week. As with many things, it might take practice and time to see results.

Best time for me to use Headspace:



Courses:

- Learn to Meditate**
 - Mindfulness Basics Training
 - Learn the Basics
- Reduce Stress & Anxiety**
 - Accepting and Letting Go
 - Reduce Daily Stress
 - Overcome Conflict
 - Shifting Stress
 - Focus and Be Calm
- Be Happier**
 - Develop A Positive Outlook
 - Boost Happiness
 - Shift Difficult Feelings
 - Anger Management
 - Balance your Emotions
 - Cope with Grief and Loss
 - Transform Difficult Emotions
- Focus and Grow**
 - The Winning Attitude
 - Break Bad Habits
 - Develop Healthy Habits
 - Build Concentration
- Improve Relationships**
 - Deepen Relationships
 - Connect Authentically
 - Learn to Forgive
 - Healthy Self Image
 - Mindful Parenting
- Boost Physical Health**
 - Healthy Eating
 - Work with Pain
 - Manage Chronic Pain
 - Healing Injury and Illness
 - Resilience in Stress
 - Practice Outside

When to use Whil

Think about a time of day you have 5-10 minutes to yourself. Use at least 3x per week. As with many things, it might take practice and time to see results.

Best time for me to use Whil:

CBT- BASED APP COMPARISON TOOL

Format(s):	Mobile App, Browser	Mobile App, Browser	Mobile App, Browser
What is it:	CBT, DBT, ACT, MI, MAT Mindfulness, personalized path with coach	CBT for symptoms of depression and anxiety, personalized path with coach	CBT for symptoms of depression and anxiety, personalized path
Personality	educational	educational, clinical	educational, direct and action-oriented
Structure	<ul style="list-style-type: none"> Personalized activity pathway or Explore entire content library organized by condition, situation, topic area, therapy type and format Videos, audio, articles, interactive activities, inspirational quotes Mood tracker 	<ul style="list-style-type: none"> Users can follow sequence or skip based on interest Coach can point users to specific modules or unlock additional content based on need Content includes videos, educational quizzes, personal stories, journaling 	<ul style="list-style-type: none"> Videos explain CBT concepts and gives examples Content includes interactive in-app exercise and guidance for offline "real life" practice Content creates personalized paths based on user input
Challenges/ Goals	Focus areas: Depression, Anxiety, Stress, Mindfulness & Meditation, Sleep, Intense Emotions, Chronic Pain, Drug or Alcohol Recovery, Opioid Use, Nicotine Recovery, Pregnancy & Early Parenting, PTSD/Trauma, Chronic Conditions, COVID-19	1 Program: Space Depression and Anxiety	3 CBT modules: <ul style="list-style-type: none"> Constructive Thinking (thought restructuring) Assertive Communication (social skills training) Rewarding Activities (behavioral activation)
Narrators, Personal Stories	Personal stories: mixed Animated videos: mixed	2 narrators in videos: male, female Personal stories: mixed	Mainly 1 female narrator, 1 male narrator, variety of actors in simulated scenarios
Session length	Activities range 2-10 minutes	Modules 20-40 min. Each section in a module takes 5-10 min, options to go deeper into each section.	Videos usually 2 minutes
Coach	Coaching feature removal 1/1/2021	COACH - reviews work done by user at regular intervals and provides feedback/guidance, typically every 1-2 weeks	No coach
Crisis Escalation	YES, referred to local KP #s if PHQ scores are escalating	YES, referred to local KP #s if PHQ scores are escalating	YES, referred to local KP #s if PHQ scores are escalating
Goal Setting & Reminders	Open-ended goal setting and tracking Reminders for sleep tool and mindfulness 5-day challenge	Open-ended goal setting for the program to share with coach	Goals vary based on the module, weekly emails with progress summary and next step recommendations
Suggestion for type of patient	Wants knowledge Wants access to a lot of content Would benefit from a coach Likes motivational quotes Prefers a combination of video and text Likes personal stories Want to track their mood	Wants knowledge Would benefit from a coach Wants to set a goal with a coach Learns by reading Is comfortable with the terms and find comfort in learning more about: Anxiety, Depression (for those programs)	Would benefit from CBT Prefers a guided approach Learns by watching video and practicing Wants to improve communication skills Wants to reframe negative thoughts
Languages	ES, Limited content - mobile or desktop in app (buttons and text over photos not translated)	Spanish	

Wellness Resources on kp.org

Wellness resources

Get help with sleep, stress, and more — all in one convenient app. [Try myStrength now](#)

Self-care tools, tips, and activities

Take a moment. Take a breath. Take time for self-care. Explore our broad range of self-care resources — including apps, audio activities, articles, and more — designed to help you thrive in mind, body, and spirit.

Navigating life's changes and challenges

Life's normal ups and downs can throw you off-kilter — but simple self-care strategies and healthy habits can help you through them.

- Managing stress
- Sleeping better
- Parenting
- Relationships

Simple ways to be kind to your mind

Small acts of self-care can have a big impact — these practices can help you wind down, find calm, and feel better.

- Meditation
- Mindfulness
- Mind-body
- Self-compassion

Health & Wellness > Mental health > Wellness resources > Sleep

Sleeping better

If you're having trouble sleeping, you aren't alone — up to 1 in 3 Americans have difficulty falling and staying asleep. But rest easy: There are a number of simple things you can do to help.

SHARE

✉ f t p

Bringing rest within reach

Improving your sleep habits, building daily self-care practices, and learning to manage stress better can all improve the quality and quantity of your sleep.

- [A bedtime meditation \(audio\)](#)
- [Mindful breathing to ease into sleep](#)
- [Tips for falling asleep](#)

Guided exercises and activities

Ease your body and mind into a relaxed and restful state with these guided meditations and activities.

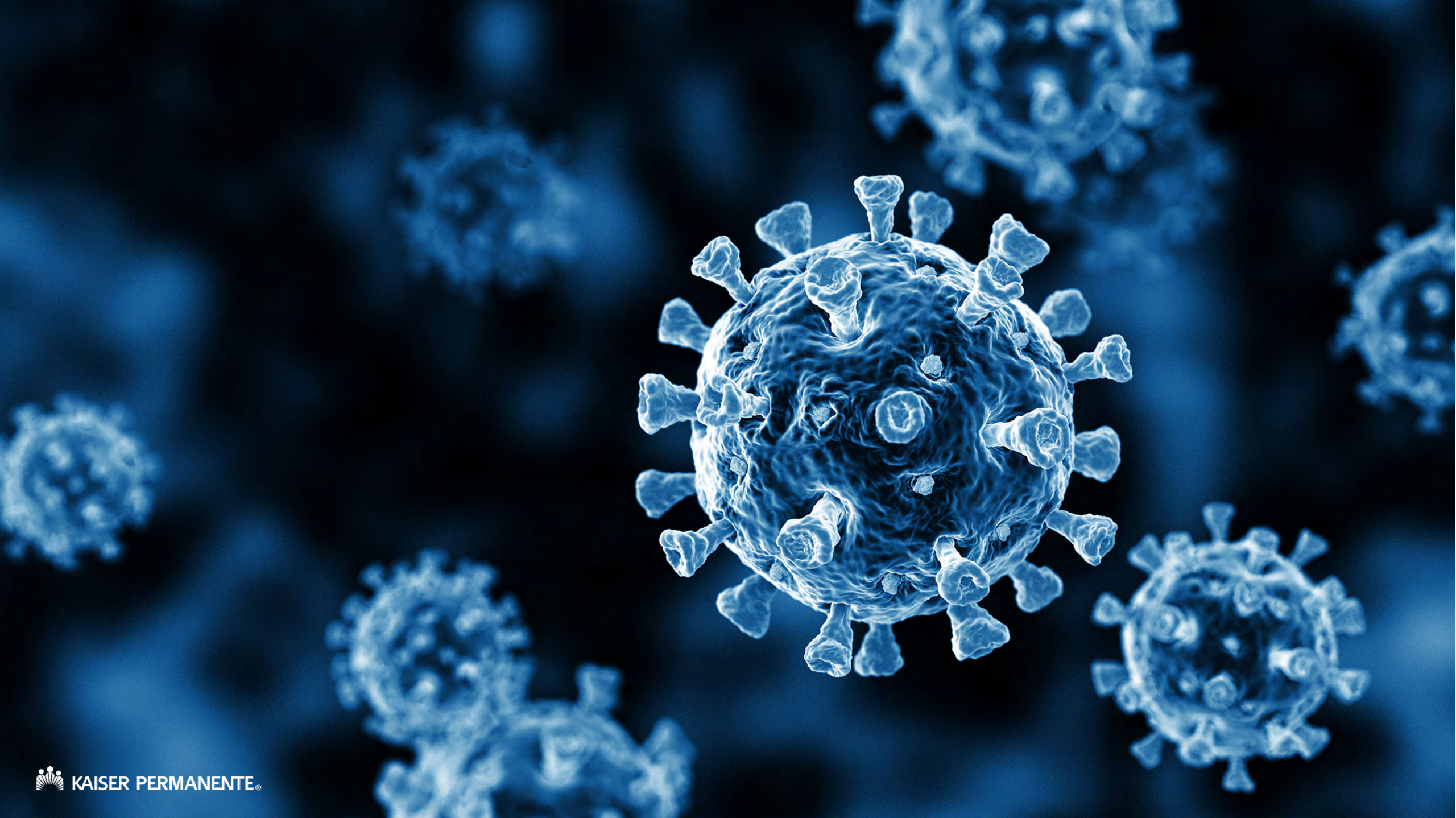
TITLE	DESCRIPTION	TYPE
3 mindful things to do before you fall asleep	Mindful tips to help you rest easy.	Article
Relaxing your mind and body	Try these tips for head-to-toe relaxation.	Article
Progressive muscle relaxation	Reduce tension one muscle group at a time.	Article

We've introduced new user-friendly educational and activity-based **articles, audio and video content** on the Mental Health and Wellness resources site on our patient facing portal kp.org. **All content has been clinically reviewed.**

Clinicians can now refer members to these resources via **KP Health Connect.**

This content is also available as a self-serve offering, and through targeted marketing channels.





Clinician and Member Feedback - SCAL



Dr. Tim Ho
Regional Assistant Medical Director for Quality and Complete Care
Southern California Permanente Medical Group

On the value of the Chamai ecosystem to clinicians,
especially during the pandemic:

“What was partially lost in our rapid pivot to telehealth and delivering care virtually was the ability to express compassion through traditional methods, like eye contact or leaning in to listen, especially for those patients experiencing Covid-19-related mental health and wellness issues.”

As clinicians sought out new ways to fill this void, they have shared with me that providing a digital therapeutic app feels like they have a gift to offer. Referring patients to a digital therapeutic app is a tangible way for clinicians to express their authentic concern, and it gives them a concrete tool to leverage daily to help manage the distress of their patients.”

Scaling in the Pandemic

	2018	2019	January 2020	May 2020	May 2022 13-15K referrals/month
Clinicians referring to apps	26	294	562	907	1007
Referrals to apps	In the 100's	712	20,906	44,277	358,001

Training and resources for Clinicians –Supporting Digital Mental Health Competencies

[SHAREPOINT](#)

The screenshot shows a SharePoint page titled "Chamai" with a navigation menu including "App Intro & Guides", "Our App Formulary", "General Resources", "Resources by Region", "FAQs", "News", and "Edit". The main content area is titled "App Guides" and features two video thumbnails: "Chamai M/M Apps (6 min)" and "Chamai CBT Apps (4 Min)". Below the videos, there is a section for "Symptom to App Map" and "App Overview".

[CLINICAL LIBRARY](#)

The screenshot shows the "Clinical Library" page for "calm mystrength". The page title is "Mental Health and Wellness Digital Tools and Therapeutics". It includes a navigation bar with "Clinical Library | NATL", "Browse", a search bar containing "calm mystrength", and a user profile "Karen FRA...". The page content includes a "Back to Results for 'calm mystrength'" link, a "MEMBER APPS | NATL" badge, and a "DECEMBER 2020" date. The main content area is titled "Introduction" and lists "App Overview" and "Job Aid". Below this, there is a "Clinician Referral" section, a "Patient Handouts" section, and a "Resources and Contact" section. The "Resources and Contact" section includes a paragraph about Kaiser Permanente's ecosystem and a list of bullet points: "Evidence-based apps for Cognitive Behavioral Therapy (CBT) and Mindfulness and Meditation (MM)" and "Educational and activity-based content available in clinic settings and via [kp.org](#)".

[KP LEARN](#)

The screenshot shows the "KP LEARN" page for "Chamai Provider Training". The page features a navigation menu, a search bar, and a user profile "Karen FRA...". The main content area is titled "Chamai Provider Training" and includes a "REGISTERED" badge. Below this, there is a "Course (1 class)" section with a description: "Chamai Provider Training is a 60-minute course designed to give you access to curated digital tools and therapeutics that you can include as part of a member's plan of care, at no cost to the member. By the end of the training, you will:" followed by a list of bullet points: "Explore the apps and resources that you can refer members to", "Understand how to make a referral in HealthConnect", and "Receive access to the apps so that you can try them out yourself". The page also features a "LAUNCH" button and a dropdown menu.

What we are learning: Personalization of the referral is key

Clinician and member feedback has been collected and received multiple times throughout the pilot (over 3 years of data; with sample sizes ranging from 50-250 each for each data collection effort)

Relevant learnings:

- **Provider-Patient relationship** is key for driving patient engagement
- Patients are more likely to use the app **when providers tailor choice of app to areas of concern, clinical need, and member preferences-86% reported trying the app based on clinician recommendation**
- **A referral that feels personalized** includes the following:
 - **Specificity** - content topics, frequency of use
 - **Relevance** - content relates to their needs, situation, or skills they have learned from their clinician
 - **Expectation setting** - explanation of how the app will help them
- The **clinician's own experience and buy-in** of the apps greatly affects the ability to personalize the referral
- Members have expressed the **desire to choose apps or try different apps** as they run out of relevant content, or if the first app did not meet their needs.

[Early Design Research Report](#) (2017)

Research conducted 1/2017-6/2017

- 61 clinician interviews
- 38 member interviews



[Early Qualitative Design Research during Pilot](#) (4/2019)

99 Member Survey

25 Member Interviews

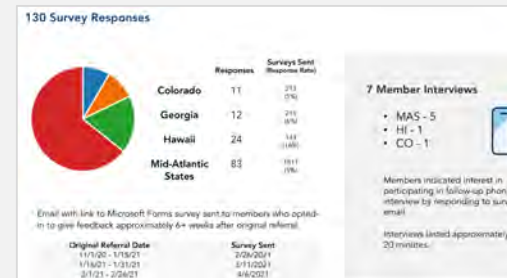
20 Clinician Interviews



[Findings from Chamai Member Survey and Interviews](#) (Early 2021)

130 Member Survey

7 Member Interviews





Engagement

From the Literature

Increased engagement and retention in apps that feature:

- Feedback
- Appropriate reminders
- In-app support from peers or coaches
- Compensation

Poor engagement and retention characterized by:

- lack of support features
- technical difficulties, and
- usefulness of app

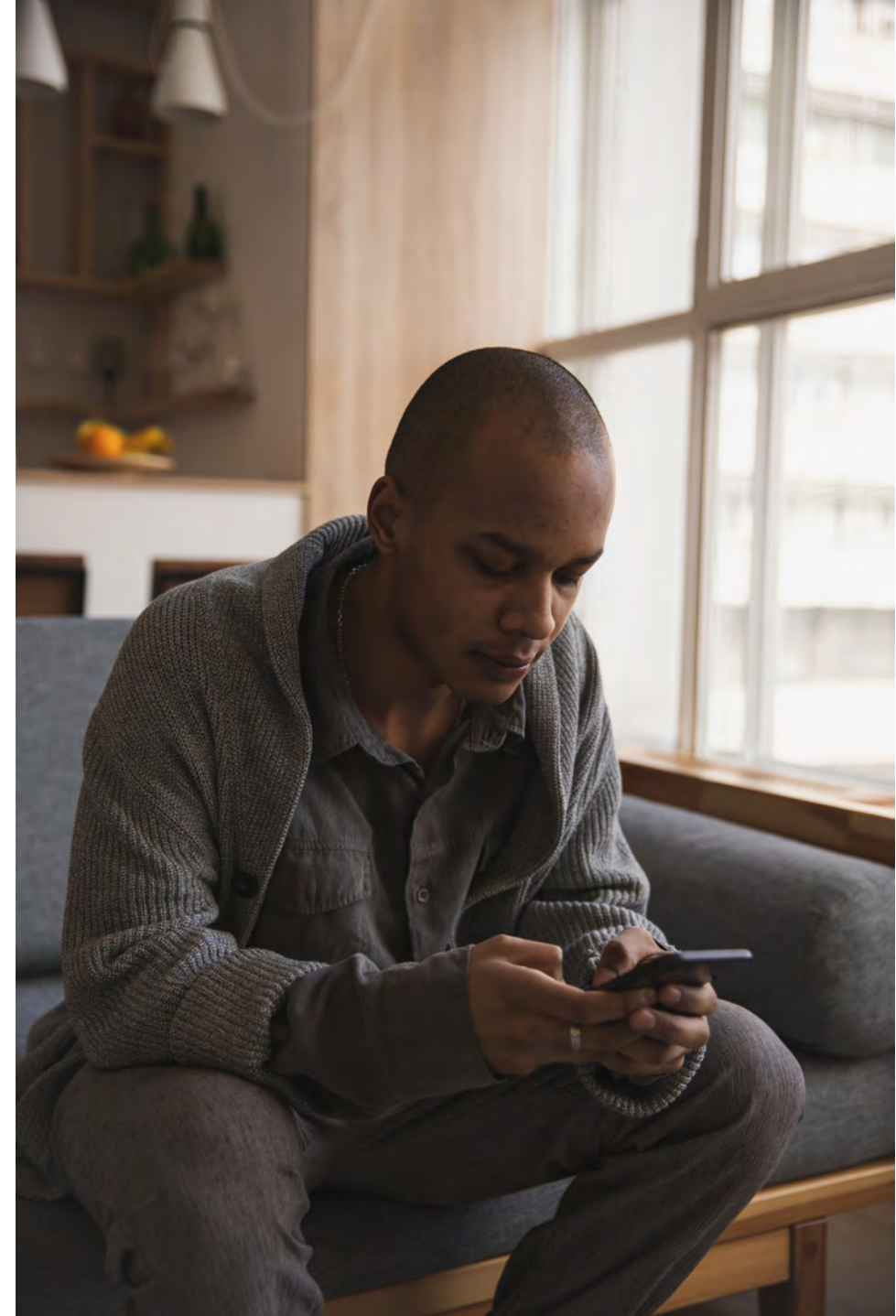
Amagai S, Pila S, Kaat AJ, Nowinski CJ, Gershon RC Challenges in Participant Engagement and Retention Using Mobile Health Apps: Literature Review J Med Internet Res 2022;24(4):e35120 doi: [10.2196/35120](https://doi.org/10.2196/35120) PMID: [35471414](https://pubmed.ncbi.nlm.nih.gov/35471414/)

Engagement

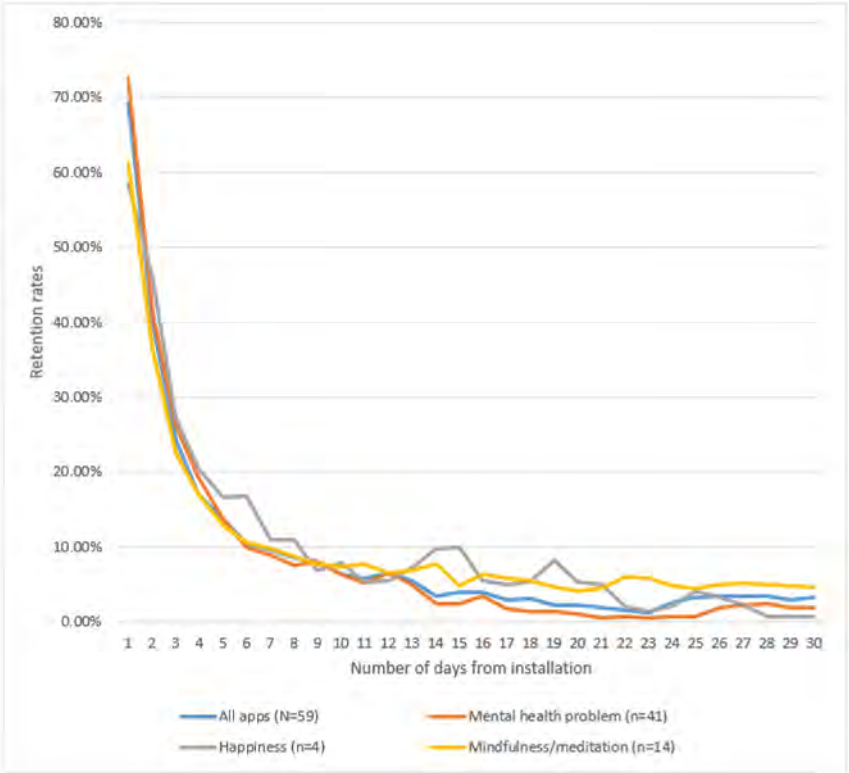
Data Suggest, on average we spend 4 hours per day on our smartphones (1,2)

A recent literature review on engagement and retention in health apps suggests mean use of 4.1 days (3)

1. Smartphone Ownership Is Growing Rapidly Around the World, but Not Always Equally. Pew Research Center's Global Attitudes Project. <https://www.pewresearch.org/global/2019/02/05/smartphone-ownership-is-growing-rapidly-around-the-world-but-not-always-equally/> (2019).
2. Turner, B. A. Smartphone Addiction & Cell Phone Usage Statistics in 2018. BankMyCell. <https://www.bankmycell.com/blog/smartphone-addiction/> (2018).
3. Amagai S, Pila S, Kaat AJ, Nowinski CJ, Gershon RC Challenges in Participant Engagement and Retention Using Mobile Health Apps: Literature Review J Med Internet Res 2022;24(4):e35120 doi: [10.2196/35120](https://doi.org/10.2196/35120) PMID: [35471414](https://pubmed.ncbi.nlm.nih.gov/35471414/)



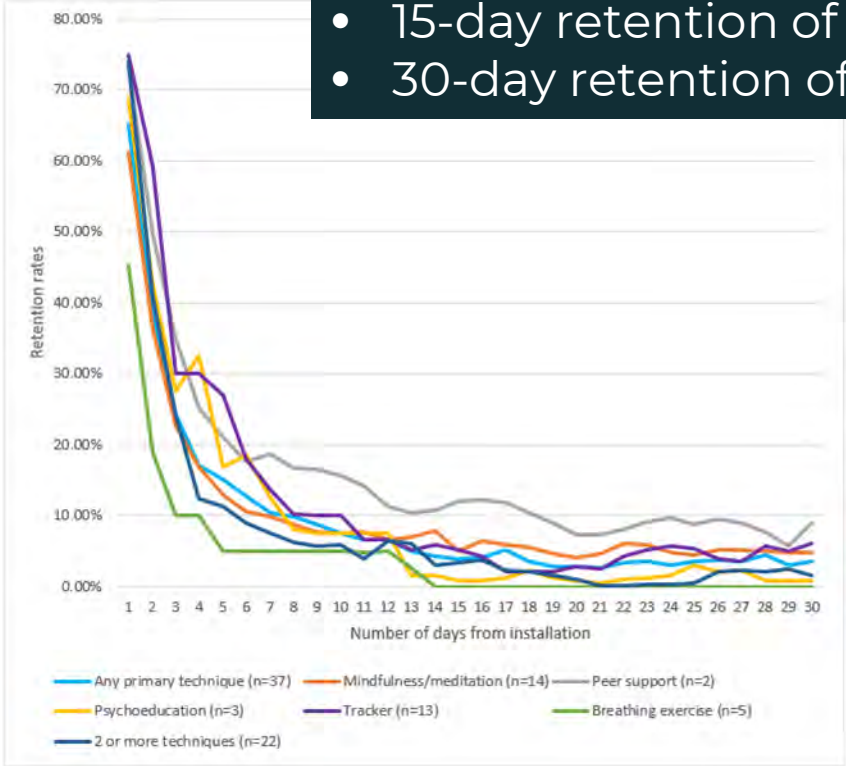
App Usage and Retention



App 30-day retention by mental health focus. The percentages reflect the number of users who opened the app from day 1 to day 30 out of the number of users who installed and opened the app on day 0.

Median

- 15-day retention of 3.9%
- 30-day retention of 3.3%



App 30-day retention by primary incorporated technique. The percentages reflect the number of users who opened the app from day 1 to day 30 out of the number of users who installed and opened the app on day 0.



Engagement Indicators

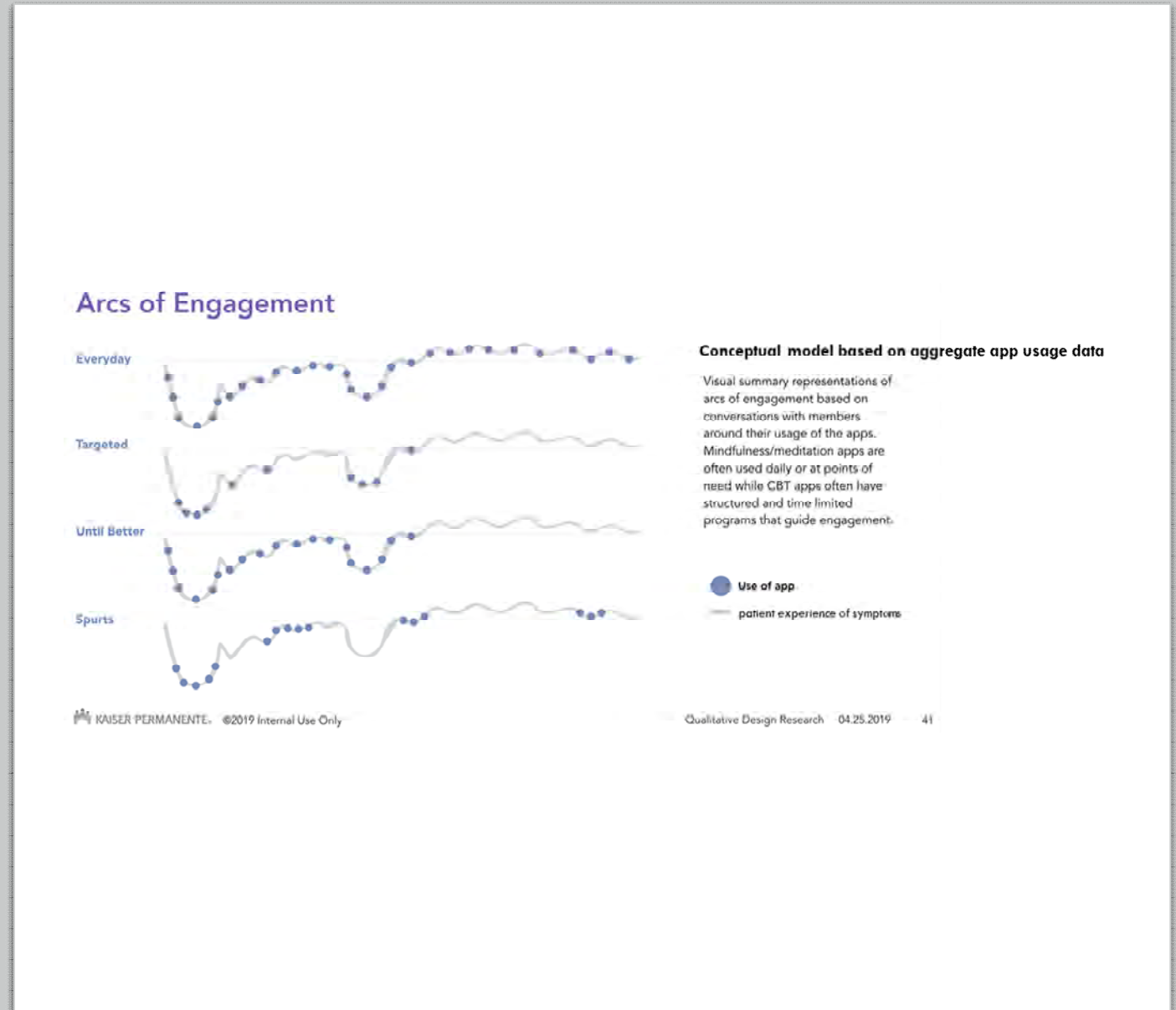
No Standard Definition of Engagement

- Currently working with app companies to get a more uniform set of metrics
- In addition, for CBT apps we will get “improvement”, “response” “remission” as standard metrics for depression
- Improvement = 6 point change on PHQ9
- Response is 50% reduction in symptoms
- Remission – returned to a PHQ9 score of 5 or lower

Frequency	Intensity	Intensity	Intensity	Time	Time	Type	Type
# log ins	# Tracked/Self report measures	# Modules/Lessons Completed	# activities/Goals Completed	Number of days (first to last log in)	Time in App (average sessions and total)	Active vs passive engagement	Specific Content/Features used

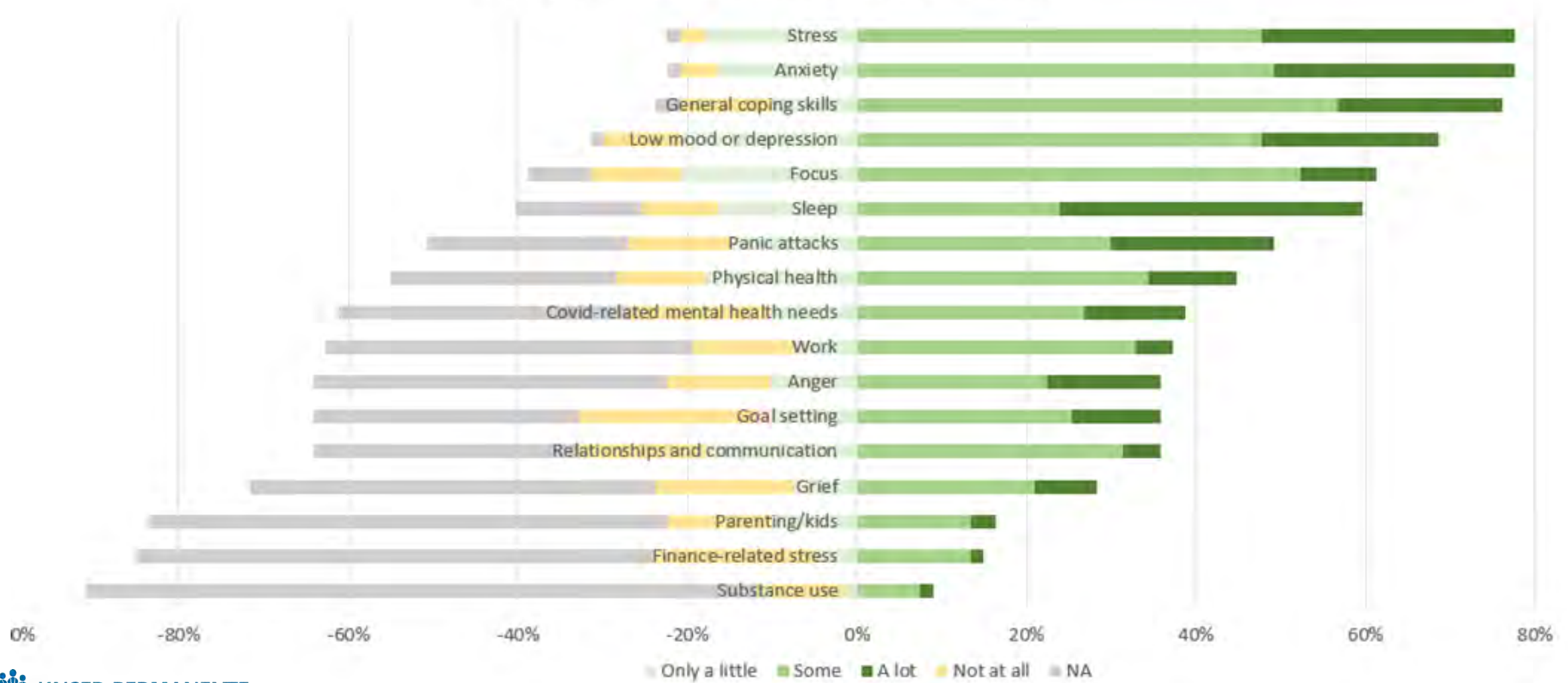
Engagement: More use is not necessarily better – the evidence indicates that value can be derived with different patterns of engagement

- As stated, **published literature points to significant drop off by day 15 (3.9%)**. Our data shows a longer tail of engagement than what we see in the published literature.
- **Member surveys suggest members use these tools as needed** and our data signals they are experiencing symptom improvement (so continuous use is not necessarily what's best).
- These patterns coupled with our early clinical signals (reductions in PHQ9 by day 56) suggest relevant **clinical value is derived in the first month of using the tools**.
- **In our deployment MM has higher engagement (56%) as compared to CBT 23%**.
- **In our early days 58% enrolled. Of those, 62% were still using at three months 31% were still using the app at 6 months.**



Most Recent Survey Results Areas of App Helpfulness- Survey Feb 2022 N = 136 response rate 5%

Total Areas of Helpfulness (All Respondents)



What Makes App Use/Referral Sticky

Real World Best Practices on App Referral



Talk through app pamphlet/demo on phone

Members who see what the app looks like are more likely to enroll



Discuss when the member has time to use the app

Members who choose a specific time in their day to use the app are more likely to start and to continue to use the app



Be specific about the content and “dosage”

Members who have programs/content suggested related to the issues they are having, find the app more relevant and know where to start.

They want guidance on how often and long to use the app ((X min, Y times/week).



Be prescriptive about when to download

Members who have a plan to download the apps are more likely to follow through



Use motivational interviewing

“On a scale of 1 to 10, how important is it for you to use the program?”

“On a scale of 1 to 10, how confident are you that you will use it consistently?”



Send app instructions in separate message

Members who have the app instructions in a separate secure message have an easier time finding the instructions.



Introduce the app earlier in the session.

If you've identified your patient as a good fit, start talking about Chamai earlier in the conversation.

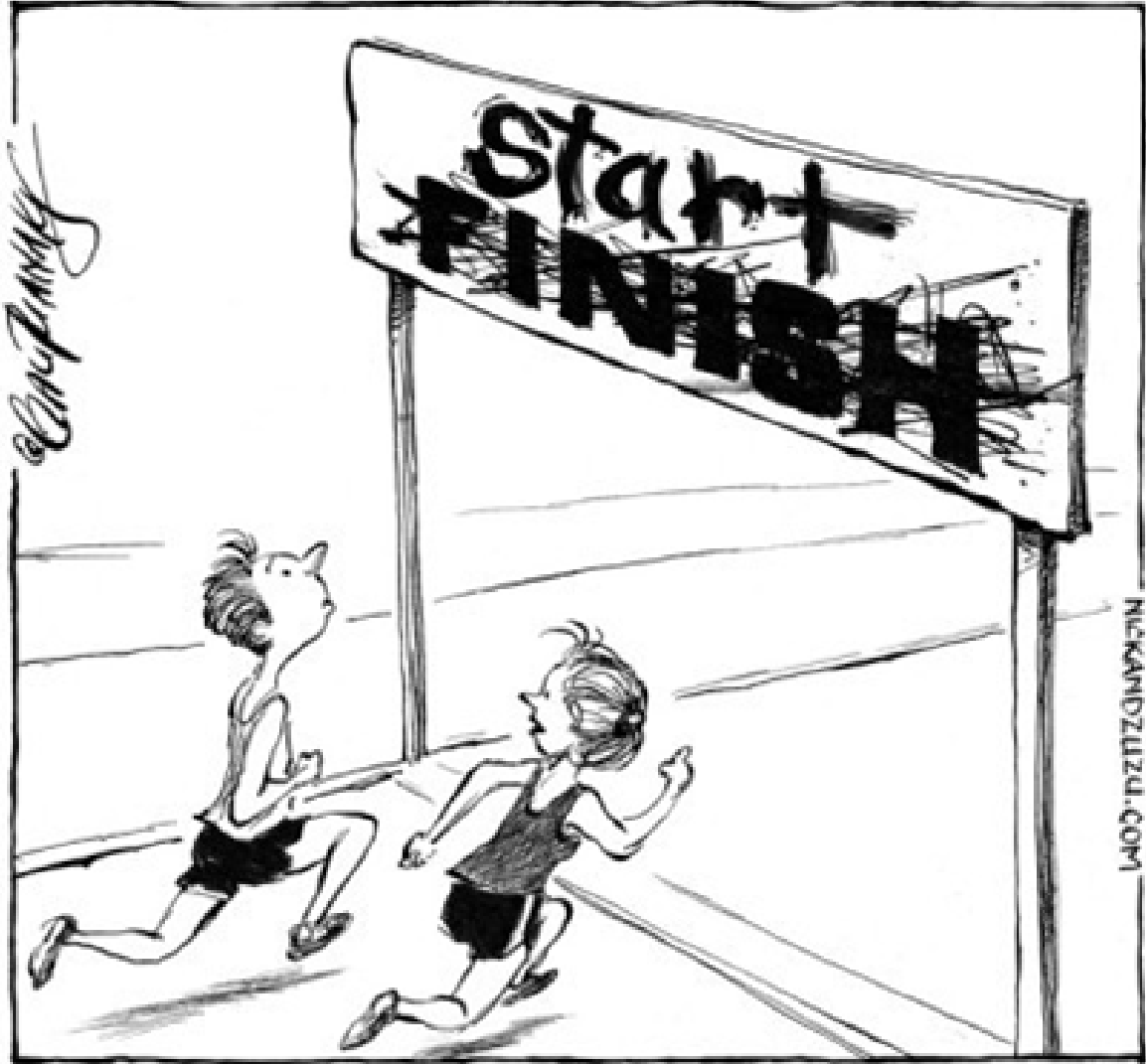


Note: We recommend that member receive just one app referral

What's Next

- MRN level data mapped to EMR data (Simple account linkage) – research on total plan of care (opt in to share data)
- Portfolio management system to inform app life cycle
- Embedding app tools into Feedback Informed Care/Measurement based care
- Value-based contracting
- 2.0 Ecosystem for Youth Mental Health





CAN THEY DO THAT?