Mobile App Technology Meets Collaborative Care

Cambridge Health Alliance

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Objectives

1) Understand how mobile apps can enhance patient self-management

2) Identify best practices for incorporating mobile apps into collaborative care systems

3) Implement strategies for evaluating emerging mobile app technology

These presenters have nothing to disclose
77%  
(percentage of people living in the U.S. who own smartphones)

46x  
(average number of times smartphone owners check phone each day)
1 in 5
(number of U.S. adults experiencing mental illness in one year)

40%
(percentage of people with a mental illness condition who receive treatment)

https://www.nami.org/Learn-More/Mental-Health-By-the-Numbers
Increase access
Self-management
Clinical “extender”
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Agenda

✓ Clinical rationale
✓ Overview of CHA Model
✓ Evaluation and pilot
✓ Findings and best practices
✓ Case presentation “Cliff”
✓ Tips for incorporating apps into your setting
✓ Group discussion
✓ Future exploration
✓ App demonstration
✓ Questions
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Clinical Rationale

90,000+ health & wellness apps

10,000+ mental health apps

Focus:

• Self-management
• Evidence-based interventions

http://research2guidance.com/r2g/r2g-mHealth-App-Developer-Economics-2016.pdf
Psychoeducation

Behavioral health conditions

Treatment modalities

Concise, engaging content
Behavior Change

Evidence-based interventions

Goal-setting

Motivational enhancement

“Recording how I feel before and after exercising helps motivate me to do it again”
Self-Monitoring

Data collection
Real-time interventions

“I like data. It helps me know that I’m doing okay”
Mindfulness

Guided mindfulness meditations

Notifications

“I used to get jammed up about small things; now I realize that burnt pizza isn’t the end of the world”
Distress Tolerance

- Deep breathing
- Grounding exercises
- Distraction strategies

"I have been doing it every day. I feel like it is cleaning my brain"
Cognitive Reframing

Challenging unhelpful thinking patterns

Shifting focus
Benefits

“Clinical Extender”

Increased access

Self-efficacy
✓ Clinical Rationale

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CHA is a major safety net health system, and essential to Massachusetts’ health care delivery system for Medicaid and other low-income vulnerable patients.
Primary Care is the ‘De Facto’ Mental Health System

National Comorbidity Survey Replication
Provision of Behavioral Health Care: Setting of Service

No Treatment 59%
General Medical 56%
MH Professional 44%
41% Receiving Care

Wang P, et al., Twelve-Month Use of Mental Health Services in the United States, Arch Gen Psychiatry, 62, June 2005
Why Integrate?
Rationale for Integration of Mental Health and Addictions

**Patient-Centered**
- One-stop shopping
- Improves Access
  - More patients willing to be seen by MH provider based at their primary care center
  - Reduces stigma
  - Reduces disparities for minority groups

**Consistent w/ New Delivery Systems (CHA Transformation)**
- Patient Centered Medical Home
- Chronic Disease Management
- Global Payment/ACO

**Improves Outcomes**
- Medical/MH often co-morbid
- Leverages primary care relationships
- Reduces total medical expenses (TMEs)
Primary Care Behavioral Health Integration

- AIMS Center: University of Washington
- IMPACT Model for Depression
- SBIRT Model for Addictions
Staffing to Support the Model

**Mental Health Care Partner (MHCP)**
- Self-Management Support and Coaching

**Integrated Therapist**
- Brief Treatment with Evidence-Based Therapies

**Consult Psychiatrist**
- Medication and Diagnostic Clarification
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Rationale

Self-Help tools (websites, computer-based programs, mobile applications) can facilitate PCBH by:

- Expanding access to effective services and reliable information
- Educating patients about behavioral health conditions and treatments
- Empowering patients to pursue a wider range of recovery options
- Providing a communication and tracking medium
- Providing safe and confidential peer support
Project Timeline

FY15
- Landscape and literature review
- Established workgroup

FY16
- Structured evaluation
- Pilot of tools

FY17
- Training and dissemination
- Formalized strategies and materials
Multidisciplinary Evaluation Workgroup

- Primary Care and Psychiatry Administration
- Integrated Mental Health (Therapists & Care Partners)
- Patient Leadership (Patient Partners and Advisors)

Ad hoc: Tobacco Cessation Program
Ad hoc: Risk Management
Ad hoc: Information Technology
Ad hoc: Anonymous Patient Contributors
Pilot

56 patients
6 sites
9 apps
iPads

MOBILE HEALTH APPS

<table>
<thead>
<tr>
<th></th>
<th>STRESS AND ANXIETY</th>
<th>DEPRESSION &amp; GENERAL MOOD</th>
<th>OTHER CONDITIONS</th>
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Results

Gender: 66.1% Women, 33.9% Men
Age range: 18-70, Average 35 y/o

### Patient Feedback on Tools

- Helpful: 66%
- Didn’t Use: 9%
- Equipment Issue: 8%
- Not Helpful: 11%
- Declined: 6%

### Issues Addressed

<table>
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<tr>
<th>Issue Being Addressed</th>
<th>Number of PTS</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>30</td>
<td>53.6%</td>
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<tr>
<td>Depression</td>
<td>20</td>
<td>35.7%</td>
</tr>
<tr>
<td>Sleep</td>
<td>8</td>
<td>14.3%</td>
</tr>
<tr>
<td>Stress &amp; PTSD</td>
<td>5</td>
<td>8.9%</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>5.4%</td>
</tr>
<tr>
<td>Multiple Conditions</td>
<td>13</td>
<td>23.2%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>56</strong></td>
<td><strong>100.0%</strong></td>
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Lessons from Evaluation/Pilot

- Highly Aligned with Clinical Care
  - Patient education
  - Stepped Model of Care
  - Team-Based Care
  - Behavioral health screening
  - Behavioral health monitoring
  - Motivational interviewing
  - Behavioral Activation
  - Cognitive Behavioral Therapy
  - Care Plans
  - Groups (Insomnia, PC Mindfulness)
  - Tobacco Screening and Cessation

- Important to put tools in context for patient
- Patients focus on most relevant sections
- Comfort with technology
- Can enhance clinic understanding of Stepped Model
- Can serve as training resources for staff
- Patients more likely to use phone than a CBT handout
- Aligned with Clinical Care

Explaining the tool and walking through logistics takes time

Important to put tools in context for patient.
Patients focus on most relevant sections.
Comfort with technology.
Can enhance clinic understanding of Stepped Model.
Can serve as training resources for staff.
Patients more likely to use phone than a CBT handout.
Aligned with Clinical Care.

Highly Aligned with Clinical Care:
- Patient education
- Stepped Model of Care
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# App Evaluation Model

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Key Questions</th>
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<tbody>
<tr>
<td><strong>Source</strong></td>
<td>Were there clinicians involved in developing the app?</td>
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<tr>
<td><strong>Cost/Accessibility</strong></td>
<td>Is the app free? Available both through Apple and Android?</td>
</tr>
<tr>
<td><strong>Risk/Privacy &amp; Security</strong></td>
<td>Privacy policy? Security measures in place?</td>
</tr>
<tr>
<td><strong>Evidence-base</strong></td>
<td>Aligned with the therapeutic interventions you are using?</td>
</tr>
<tr>
<td><strong>Ease of Use</strong></td>
<td>Engaging and patient-friendly?</td>
</tr>
</tbody>
</table>

Introducing Mobile Apps

1) Provide clinical basis for recommendation
2) Discussion of risk/security/privacy
3) Product demonstration
4) Action plan
5) Plan for follow-up
Materials to support dissemination

EPIC Smartphrases: BHselfhelptools and BHselfhelpsummary

Self Help in Primary Care
"There’s an App for that."

Patients 18+ may benefit from self help tools like mobile apps or websites.

The Tech-Enabled Tools Work Group @ CHA, has compiled a list of evidence-based, patient-approved apps and websites that offer help with:

- Stress and Anxiety
- Depression and General Mood
- Smoking
- Mindfulness and Meditation

Ask Liza to advise your patient on what tool might work best.

Mobile Health and Mental Health Apps

Breathe2relax
Helps adults to manage stress with breathing exercise and a tracking tool.

Mindfulness Coach (Apple Only)
Helps adults to manage emotional distress and chronic pain with mindfulness. Audio-guided meditation exercises, activity reminders and tracking tools.

Self Help for Anxiety Management (SAM)
Helps adults manage anxiety through education and tools for deep breathing, mindfulness, muscle relaxation, changing your thoughts and tracking tools. Includes games and resources.

Moodtools
Support for depression and low mood. Education, treatment options, YouTube videos and tracking tools. Complete thought and mood logs to help track your symptoms.
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“Cliff”
Caucasian male
Mid-30’s
“Hypochondriac”
Low/Moderate Anxiety
Jaw pain
Catastrophic thinking
SAM
(Self-Help For Anxiety Management)

Developer:
University of West England

Target Population:
College students with anxiety

Key Features:
Psychoeducation
Self-monitoring
Physical/mental relaxation

http://sam-app.org.uk
"I slow down and think about what’s bothering me"
“If I can become more detached from my thoughts, it’s easier for me to size them up. I can then figure out whether they’re trivial or beyond my control”
Outcome

“Using SAM has become instinctual”

Respond vs. React

Reduced substance use

Enhanced therapeutic support
“My students relax and then I can, too!”

Impact

Physical & emotional awareness

Community
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Implementation Guidelines

1) Create team of technology champions

2) Assess BH needs of patients

3) Evaluate BH mobile tools

4) Address logistical considerations

5) Train staff

6) Collect feedback/evaluate

7) Create plan for sustainability
Technology Champions

Personal attributes:
• Passionate
• Open-minded
• Creative

Diverse representation
• Patients
• Clinicians
• Management
• IT
Patient BH needs

Primary BH conditions

Relevant mHealth technology
Evaluation

Internet/literature review

Evaluation criteria:
- Source
- Cost/accessibility
- Risk/privacy/security
- Evidence-base
- Ease of use
Logistics

- Identifying appropriate staff
- Workflows
- Available technology
- Staff materials/EMR utilization
Staff training

Addressing attitude towards technology

Increasing comfort level
• Rationale
• Intro process
• App content
• Patient success stories
Feedback & Evaluation

Patient & provider feedback

Survey
- App usage
- Challenges
- Areas for improvement
Sustainability

Evolving mHealth landscape

Ongoing review process

Plan for dissemination/training
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Action planning!

1) Who will be on your team of technology champions?

2) What are your patients’ BH needs? What kinds of apps might be best suited for them?

3) What challenges might you face in using apps with patients?

4) Which team members are in the best position to introduce apps to patients?

5) What kind of training will your staff need? Are they already using apps with patients?

6) What are some challenges you may face in bringing apps to your institution, clinical practice or personal practice?
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Future exploration:

Information and advice websites
Computerized self-help
Online peer support
Health-related apps
Tools for kids
Tracking and interoperability
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Stop, Breathe & Think

Developer: Tools for Peace

Target Population: Youth, Adults

Key Features: Psychoeducation, Guided meditations, Tracking

https://app.stopbreathethink.org
Thank You!

lhoffman@challiance.org
ebenedetto@challiance.org
EXTRA
CBT-icoach

Developer:
National Center for Telehealth and Technology

Target Population:
Adults with sleep disturbance

Key Components:
Psychoeducation
Sleep tracking
Guided mindfulness
Cognitive reframing

https://www.ptsd.va.gov/professional/materials/apps/cbticoach_app_pro.asp
Breathe2Relax

Developer:
National Center for Telehealth and Technology

Target Population:
Adults

Key Features:
Psychoeducation
Breathing exercises

http://t2health.dcoe.mil/apps/breathe2relax
Sleepio

Developer:
Clinicians/Researchers from field of sleep science

Target Population:
Adults with sleep disturbance

Key Features:
Psychoeducation
CBT strategies
Social network
Sleep diary

https://www.sleepio.com
“It’s the Wild, Wild West, and we are searching for gold while trying to avoid the snake oil” - Dr. John Torous, M.D.
Evidence

App development = 18 Weeks

App research = 3-5 years
Usability

Limited language options

Content overwhelming

Patient motivation