eHealth to Redress Psychotherapy Access Barriers Both New and Old

(A Review of Reviews and Meta-Analyses)

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Outline

Barriers both new and old

eHealth as an alternative (examples)

Evidence of its efficacy

Clinical takeaways
Barriers to Psychotherapy Access: New

Telepsychotherapy in the Age of COVID-19

Special issue of Journal of Psychotherapy Integration

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Mental health problems in the U.S.

Lifetime prevalence:

Any anxiety disorder: 31.0%
Any mood disorder: 21.4%
Any substance use disorder: 14.6%

Any lifetime psychological disorder: 47.4%

NCS-R; Kessler et al., 2007
Mental health problems in the U.S.

~48 million past year
(out of 327 in US)

Rates rising in young

(SAMHSA, 2018)
Business as usual is not ok

SAMHSA:
~20% with mental health problems report “unmet needs”
Business as usual is not ok

Shortage in the workforce (psychologists):

Uninsured got care?

SAMSHA 20% “unmet needs” got met?

(IHS Markit, 2018)
Business as usual is not ok

Shortage in the workforce (psychologists):

All races/ethnicities got same care as non-Hispanic Whites?

2015

20,820  ~22%

Additional Psychologists Needed (FTEs)

(IHS Markit, 2018)
myCompass
A personalised self-help tool for your mental health

GET STARTED

JUMP TO INFORMATION FOR...
- YOUNG ADULTS
- ADULTS
- SENIORS
- HEALTH CARE PROFESSIONALS

GET STARTED IN UNDER 5 MINUTES
1. Choose your program
2. Activities
3. Begin your treatment
4. Track on computer or mobile device
5. View your dashboard and track on going results
PTSD Coach

The difference between the impossible and the possible lies in a person's determination.
MoodGYM

MoodGYM uses a list of typical errors developed by David Burns ("Feeling Good, the New Mood Therapy"). Others are available.

**David Burns’ Warped Thoughts**

For each type of thinking, click the icon for examples.

<table>
<thead>
<tr>
<th>Warped Thought</th>
<th>Definition</th>
<th>Click Icons for Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ALL or NONE thinking</strong></td>
<td>Everything is perceived to be either full on or full off. If something isn’t fully completed/ or right/ or perfect then it’s entirely uncompleted/ wrong/ spoiled.</td>
<td><img src="image1" alt="Icon" /> <img src="image2" alt="Icon" /> <img src="image3" alt="Icon" /></td>
</tr>
<tr>
<td><strong>Overgeneralization</strong></td>
<td>One example of a mistake or error is interpreted as a pattern of mistakes, and errors.</td>
<td><img src="image4" alt="Icon" /> <img src="image5" alt="Icon" /> <img src="image6" alt="Icon" /></td>
</tr>
<tr>
<td><strong>Mental Filter</strong></td>
<td>One (negative) part of the picture is examined to the exclusion of the larger (positive) part.</td>
<td><img src="image7" alt="Icon" /> <img src="image8" alt="Icon" /> <img src="image9" alt="Icon" /></td>
</tr>
<tr>
<td><strong>Disqualifying the Positive</strong></td>
<td>Dismissing or ignoring any positive comment/ achievement/ compliment.</td>
<td><img src="image10" alt="Icon" /> <img src="image11" alt="Icon" /> <img src="image12" alt="Icon" /></td>
</tr>
<tr>
<td><strong>Jumping to Conclusions</strong></td>
<td>You think negatively about something without supporting evidence. There are two errors: Mind reading: You think without any evidence that someone is thinking negatively about you. The fortune teller error: You truly believe that you know what will happen in the future, without evidence.</td>
<td><img src="image13" alt="Icon" /> <img src="image14" alt="Icon" /> <img src="image15" alt="Icon" /></td>
</tr>
</tbody>
</table>
1) Search of PsycINFO: $k = 7,831$
   a. Search terms: review, meta-analysis, telehealth, ehealth, mhealth, telemental health,
      telebehavioral health, smartphone, internet intervention, web intervention, mobile, app,
      application, mental health, anxiety, depression, substance, alcohol, well-being

2) Ancestor and descendant search of identified articles

Excluded for one or more reasons: $k = 7,734$
   - Not being a review or meta-analysis
   - Not evaluating the effectiveness of web-based or app-based interventions
   - Not analyzing eHealth interventions for general mental health, anxiety, depression, or substances,
   - Not being a peer reviewed article (e.g., books)

Full-text articles assessed for eligibility: $k = 97$

Excluded after full-text examination, $k = 32$
   - Not being a review or meta-analysis

$k = 65$ reviews and meta-analyses met inclusion criteria
eHealth Literature review

37 meta-analyses
28 reviews

Target Outcomes:
- Depression
- Anxiety
- Substance Use
- General Well-Being

<table>
<thead>
<tr>
<th>Author</th>
<th>Type of intervention</th>
<th>Description of sample*</th>
<th>Psychological approach</th>
<th>Guided vs. unguided</th>
<th>Effect size [95% CI]</th>
<th>Outcome</th>
<th>Moderators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anderson et al. (2014)</td>
<td>Web-based</td>
<td>k = 7, Self-directed</td>
<td>CBT</td>
<td>N/A</td>
<td>$g = -0.01 [-0.13, 0.12]$</td>
<td>Overall</td>
<td>(-) Study quality</td>
</tr>
<tr>
<td>Brown et al. (2015)</td>
<td>Web-based</td>
<td>k = 8, General</td>
<td>ACT</td>
<td>$k = 3$, Guided</td>
<td>$g = 0.17 [0.02, 0.32]$</td>
<td>Anxiety</td>
<td>(-) Increased engagement associated with lower treatment gains</td>
</tr>
<tr>
<td></td>
<td></td>
<td>k = 2, Clinical</td>
<td></td>
<td>$k = 3$, Unchanged</td>
<td>$g = 0.04 [-0.44, 0.52]$</td>
<td>Depression</td>
<td>(-) Psychological approach</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$g = 0.06 [-0.11, 0.23]$</td>
<td>Quality of life</td>
<td></td>
</tr>
<tr>
<td>Carroll et al. (2017)</td>
<td>Web-based</td>
<td>k = 12, General</td>
<td>CBT</td>
<td>$k = 10$, Guided</td>
<td>$g = 0.23 [0.03, 0.50]$</td>
<td>Well-being</td>
<td>(+) Increased engagement associated with lower treatment gains</td>
</tr>
<tr>
<td></td>
<td></td>
<td>k = 8, Some psychological distress</td>
<td>Other</td>
<td>$k = 11$, Unchanged</td>
<td>$g = 0.25 [0.09, 0.41]$</td>
<td>Work productivity</td>
<td>(-) Psychological approach</td>
</tr>
<tr>
<td>Harer et al. (2019)</td>
<td>Web-based</td>
<td>k = 48, Undergraduates</td>
<td>CBT</td>
<td>$k = 20$, Guided</td>
<td>$g = 0.18 [0.08, 0.27]$</td>
<td>Depression</td>
<td>(+) Reduced depression</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$k = 9$, Reminders only</td>
<td>$g = 0.27 [0.13, 0.41]$</td>
<td>Anxiety</td>
<td>(-) Psychological approach</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$g = 0.20 [0.02, 0.38]$</td>
<td>Stress</td>
<td>(-) Guided vs unguided</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$g = 0.52 [0.22, 0.80]$</td>
<td>Eating Disorder</td>
<td>(-) Treatment length</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$g = 0.41 [0.26, 0.56]$</td>
<td>Exercise</td>
<td>(-) Exercise</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$g = 0.15 [-0.20, 0.50]$</td>
<td>Well-being</td>
<td>(-) Guided vs unguided</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$d = 0.19 [-0.19, 0.56]$</td>
<td>Depression</td>
<td>(+) Support increased effectiveness for depression and overall health</td>
</tr>
<tr>
<td>Shafi et al. (2018)</td>
<td>Web-based</td>
<td>k = 13, Caregivers to adults with chronic conditions</td>
<td>Not specified; information or education</td>
<td>Not reported</td>
<td>$d = 0.20 [-0.14, 0.69]$</td>
<td>Overall health</td>
<td>(-) Support increased effectiveness for depression and overall health</td>
</tr>
</tbody>
</table>
Common Interventions and Study Designs

Web- and app-based interventions

241 guided vs. 274 unguided interventions across all meta-analyses (for depression, more guided 139 guided vs. 69 unguided)
Common Interventions and Study Designs

Samples: community, clinical, or undergraduate participants.

Control group
   Inactive most common (e.g., WLC)
   Active included (e.g., attention, psychoeducation)

Risk for bias generally evaluated to be low or unclear across RCTs.
Point of comparison: rules of thumb

Often cited “rules of thumb”

Cohen’s $d = .20$ – small
Cohen’s $d = .50$ – moderate
Cohen’s $d = .80$ – large

Hedge’s $g$ similar

But we know most effects overstated….
Point of comparison: therapy or meds

CBT vs waitlist: \( g = 0.98 \ [0.80 - 1.17] \)  
28 studies

CBT vs pill placebo: \( g = 0.55 \ [0.28 - 0.81] \)  
5 studies  
Cuijpers et al. (2019)

Psychotherapy vs control: \( g = 0.35 \ [0.26 - 0.44] \)  
37 studies  
Kamenov et al., 2017

Antidepressants vs placebo: \( d = 0.30 \ [0.26 - 0.34] \)  
522 studies  
Cipriani et al. (2018)
Depression

5 reviews and 17 meta-analyses

ACT, behavioral activation, mindfulness, metacognitive therapy, DBT, rumination-focused CBT, and CBT

Most common: CBT
Depression

Across 17 meta-analyses, depression in eHealth condition relative to control:

\[ g = 0.15 \text{ to } 0.90 \] (Median of the 17 meta-analyses = 0.49)

Most effects small or medium
Up to 6-months
Adults, but also in children, adolescents (>1 meta-analysis)

Improvements in quality of life, problem-solving skills (for negative problems), self-efficacy, anxiety, and well-being
Depression

Guided vs. Unguided -> mixed

No difference:
  Active vs. Inactive controls
  Diagnosis, psychological approach, and urban/rural

Superior effects
  Pacing: shorter but drawn out (Cheng et al., 2019)
  Reminders (Cheng et al., 2019)
  Medication (Cowpertwait & Clarke, 2013)
  Newer trials > older trials (Cheng et al., 2019)
eHealth as an Adjunct

Small effect ($d = 0.27 \ [0.04, 0.50]$ ) in $k=10$ studies comparing “treatment” to “treatment with eHealth” (Lindhiem et al., 2015)
Attrition

Depression:

Means ranged from 26.5% to 57% across 5 meta-analyses
Guided had lower attrition than unguided across 2 meta-analyses
(Cowpertwait & Clarke, 2013; Richards & Richardson, 2012)
Acceptability

Moderately-to-highly satisfactory
  Both adults and children/adolescents

Greater satisfaction linked to guidance, structured interventions, inclusion of examples, and opportunity to make peer connections

Satisfactory independent of attrition (Kelson et al., 2019)

No consideration for clinician acceptability or safety
Key Clinical Takeaways

eHealth: viable pathway to redressing some of the barrier to access. Cheap, at scale and/or adjunctive.

Relationships still matter (e.g. attrition)

*Generally* not as effective as psychotherapy or medication, but better than waitlist

Limitations: unknown safety concerns (discourages other treatments?), little culture or population-specific adaptations
Thank you!

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For manuscript:
www.tinyurl.com/jpiehealth