

Addressing the Rise of Psychological Injury Claims

Implications for Workers Compensation

June 9, 2022



**Those who have the
privilege to know have the
duty to act - Einstein**

**It is better to do something
and be criticized than to do
nothing and only criticize
- Gervais**

Potential conflicts of interest

Mindbeacon

CloudMD

Upbeing

Canada's Big Mental Health Problem

1 in 5

CANADIANS

will experience a mental health problem or illness each year

50%

OF CANADIANS

will experience a mental health issue by the age of 40

2/3

OF THOSE SUFFERING

from a mental health concern do not obtain treatment

500,000+

CANADIANS MISS WORK

each week due to mental health issues

70%

OF DISABILITY CLAIMS COSTS

are the result of mental health as the primary issue

The economic impact is massive:

C\$51 billion a year



of US employees have voluntarily left roles in the past for mental health reasons

This number increased to



FOR MILLENNIALS



FOR GEN Z¹⁷

Mental Illness is Far More Common Than We Knew

Reuben and Schaefer - 2017
Scientific American

If you survey a large sample of people over decades you find that the vast majority of people (@ 90%) will experience a significant mental health problem at some time in their life, i.e. almost everybody.

Everyone
All of Us

Insel - 2022
The Atlantic

"There are only two kinds of families in America: those who are struggling with mental illness and those who are not struggling with mental illness yet"

Some are at More Risk for Psychological Injury

Police Officers

Fire Fighters

Paramedics

Physicians

Nurses

Personal Support Workers

Corrections Officers

Bylaw Enforcement

Teachers

Engineers/ Transit

Toronto's WSIB costs for first responders are expected to soar to \$45 million this year. Here's why – Toronto Star

'We are absolutely destroyed': Health workers facing burnout, even as COVID levels ease – CTV News

Proposed legislation would presume PTSD in first responders work-related – Canadian HR Reporter

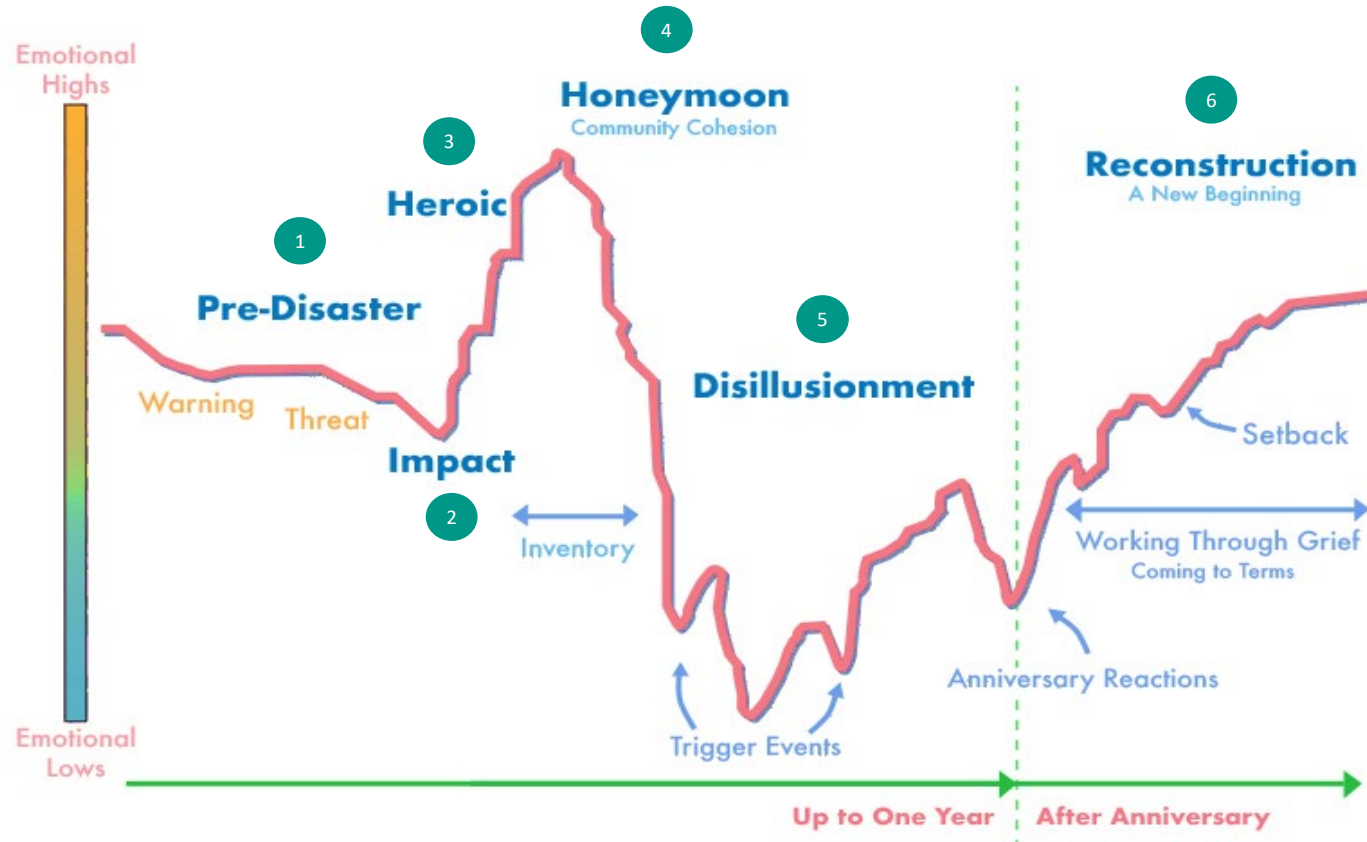
Number of prison workers suffering from PTSD much higher than official stats, union says – CBC News

As teachers report more violent incidents in schools, boards struggle to manage children with complex needs – Globe and Mail

Mental Health: Phases following a disaster

Psychological impacts last 12-18 months after a crisis

Each 1% increase in unemployment leads to 1.5% in suicides



- 1 Pre-disaster phase** - characterized by fear and uncertainty.
- 2 Impact phase** - characterized by a range of intense emotional reactions.
- 3 Heroic phase** - is characterized by a high level of activity with a low level of productivity.
- 4 Honeymoon phase** - is characterized by a dramatic shift in emotion.
- 5 Disillusionment phase** - communities and individuals realize the limits of disaster assistance.
- 6 Reconstruction phase** - is characterized by an overall feeling of recovery.

Learning Objectives

The Promise of Technology

- Digital phenotyping
- A/I and prediction
- A/I and decision support
- Reduce barriers to Tx



**How far
upstream
are we willing
and able
To go?**



Controlling the Cost of Psychological Injury Claims

- Selection and recruitment
- Education, awareness and prevention
- Early intervention
- Workplace intervention
- Claims management

Digital Phenotyping

Definition - “Moment-by-moment quantification of the individual-level human phenotype *in situ* using data from personal digital devices”

Rationale - Individuals might leave behind a footprint of their health status through technology including social media, forums, online communities, and wearable technologies

<https://www.nature.com/articles/s41598-022-12792-3>

What can you measure and compare?

- number of steps
- number and type of communication
- duration of speech
- voice patterns
- sentiment analysis
- movement patterns
- sleep patterns
- Heart rate variability
- location entropy
- search history
- browser history

- **Anything Google, Apple, Fitbit or any app can measure...**

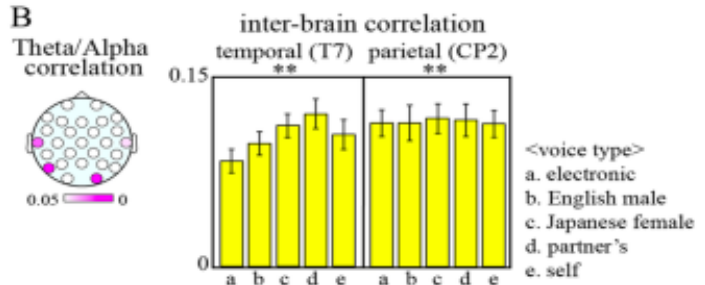
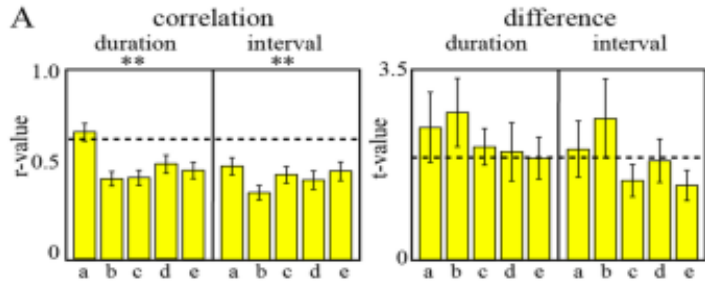
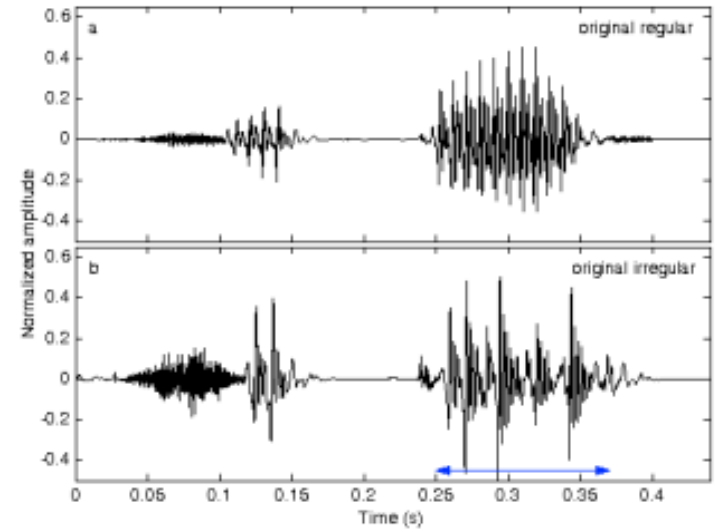
A/I and Big Data

You can compare that individual data to “normal” for other people and to baseline “normal” for that person

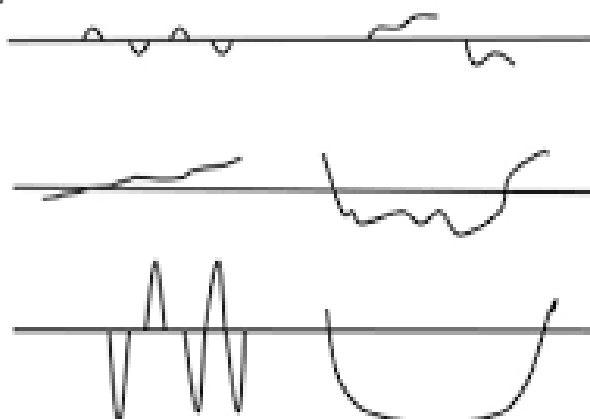
Google Plus Metrics: First Cut At Measuring Success

	Total	Own Posts	Reshared	
Posts	82	81	1	
Location	0	0	0	
Photos	18	18	0	
GiFs	1	1	0	
Videos	9	8	1	
Links	6	6	0	
Comments	1031	1028	3	
per post	12.57	12.69	3.00	Conversation Rate
+1's	2581	2562	19	
per post	31.48	31.63	19.00	Applause Rate
Reshares	1461	1442	19	
per post	17.82	17.80	19.00	Amplification Rate

These metrics report activity and not outcomes. Look, ignore. Measure the KPIs below, understand what you do that improves them!



Movement Rhythms Vitality Contours



Movement Attributes

Low intensity
(regular/irregular)

Gradual,
flow adjustment

Abrupt,
high intensity



Using Mobile Health Technologies to Manage Depression : A Pilot Study

Predicting Individual PHQ-9 scores based on activity data

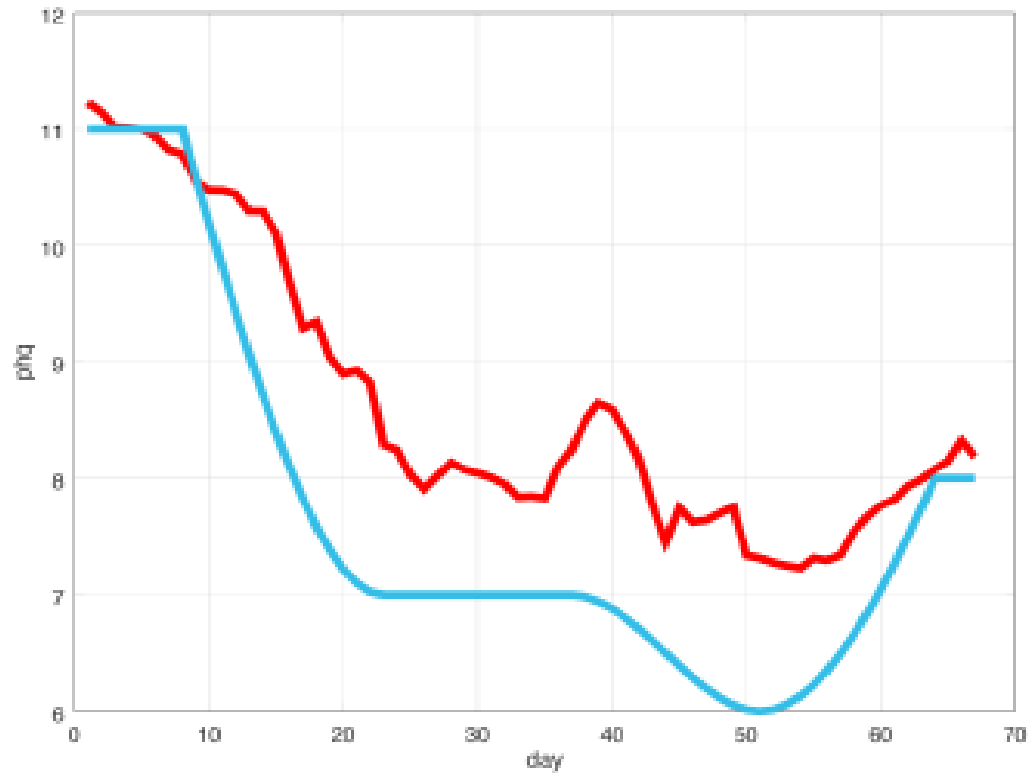


Figure 3. Predicted (Red) vs. Actual PHQ Scores (Blue): Participant 01

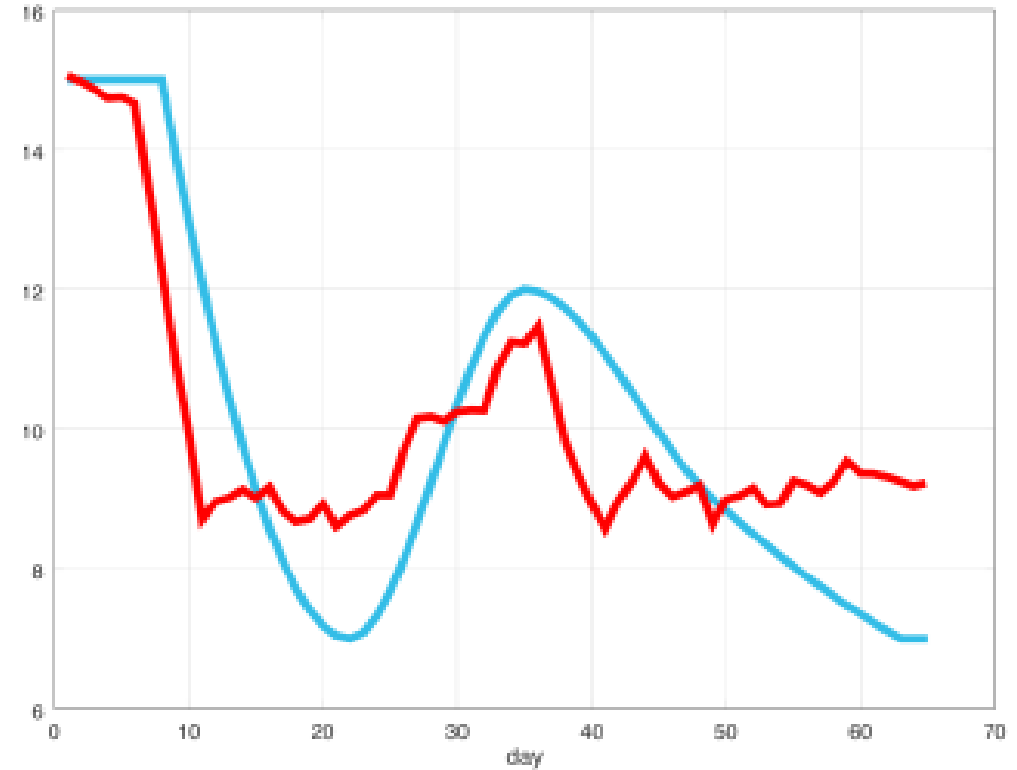


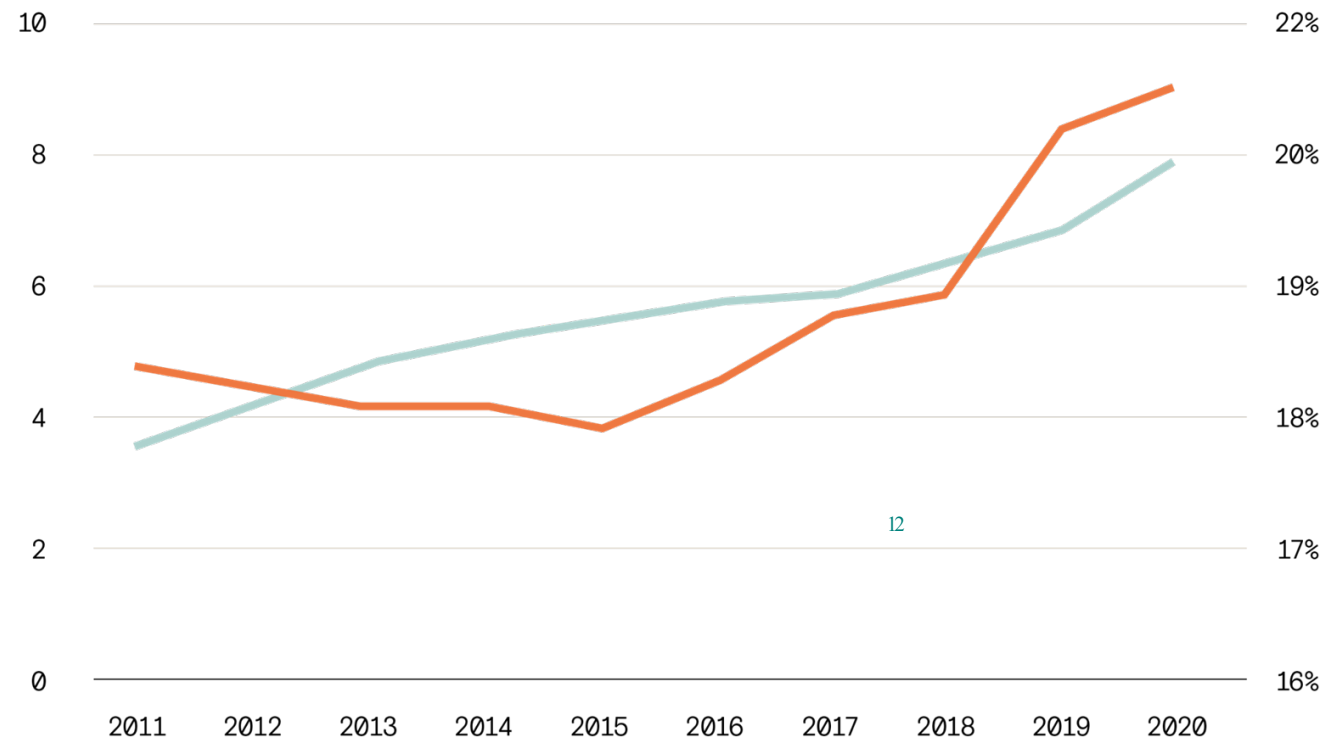
Figure 4. Predicted (Red) vs. Actual PHQ Scores (Blue): Participant 04

Today, behavioural science is used to make tech addictive. At all costs.

Remember when Google used to say “don’t be evil”?

Does the date June 29, 2007 ring a bell?

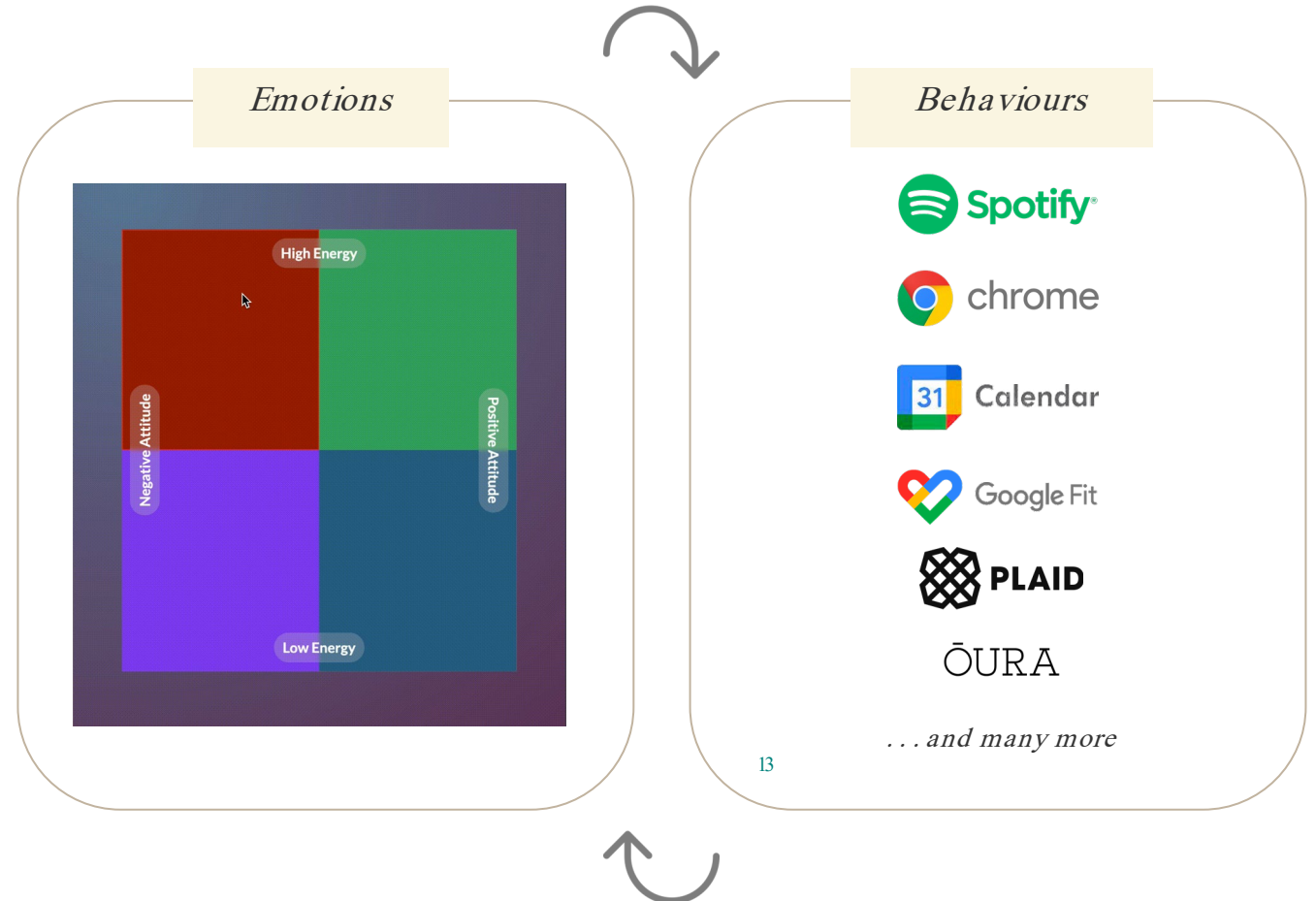
- Hours of Digital Media Usage
- Mental Health Disorders as % of Population



<https://www.statista.com/statistics/565628/time-spent-digital-traditional-media-usa/>
<https://www.samhsa.gov/data/report/2020-nsduh-annual-national-report>

We can use the same behavioural science to help people feel and perform better.

Classify Patterns in



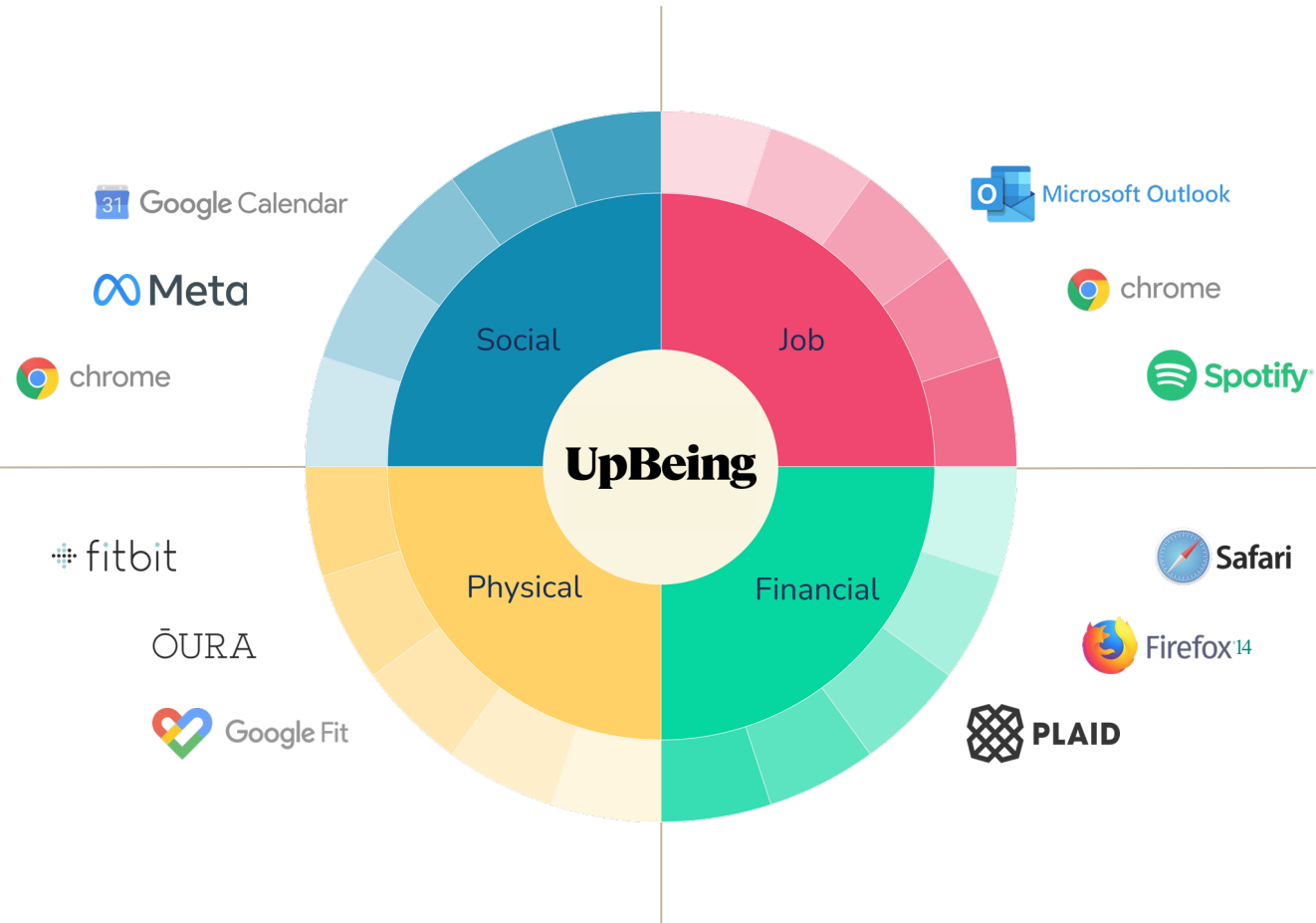
Results in and Predict

We encapsulate individual wellbeing into a model of “activators” providing actionable insights to people’s most pressing questions.

Who are the people that lift me up and bring me down?

How much do my loved ones contribute to my wellbeing and how do I support their wellbeing?

Does my level of social media usage affect my wellbeing and how?



What music gets me motivated?

How do meetings affect my wellbeing?

Where is the best place to work from and how often?

What’s the best time to workout?

What’s the best time to go to bed?

Does hitting my step goal really matter?

What spends lift me up and bring me down and what other parts of my life relate to my spending behaviour?

How much does what I spend on influence my wellbeing?

Am I more motivated by spending more?

Reduce Barriers to Treatment

2/3 of people do not obtain treatment

Stigma

Cost

Location

Scheduling

Lack of Trained Providers

How Mindbeacon Works

1 Online Assessment

Users complete a thorough 20 to 30-minute online assessment to provide BEACON therapists with rich insight and to confirm BEACON suitability.

2 Tailored Therapy

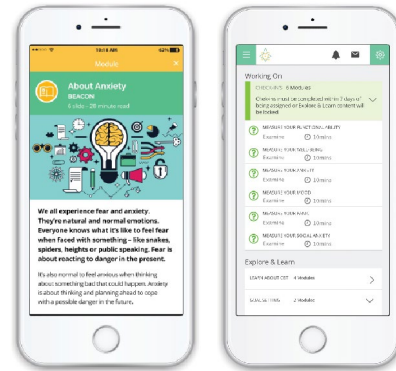
Assessment results are closely reviewed by a BEACON therapist and used to determine the appropriate care path.

3 Evidence-based Care

The user completes readings and activities selected by the therapist to develop skills specific to their condition.

4 Dedicated Therapist

Our iCBT therapy program is augmented with asynchronous messaging with the BEACON therapist whose role includes supporting and guiding users through therapy.



7 Relapse Prevention

Following therapy, clients have access to the BEACON platform to revisit readings, and skill building exercises for up to 12 months.

6 Therapy Completion

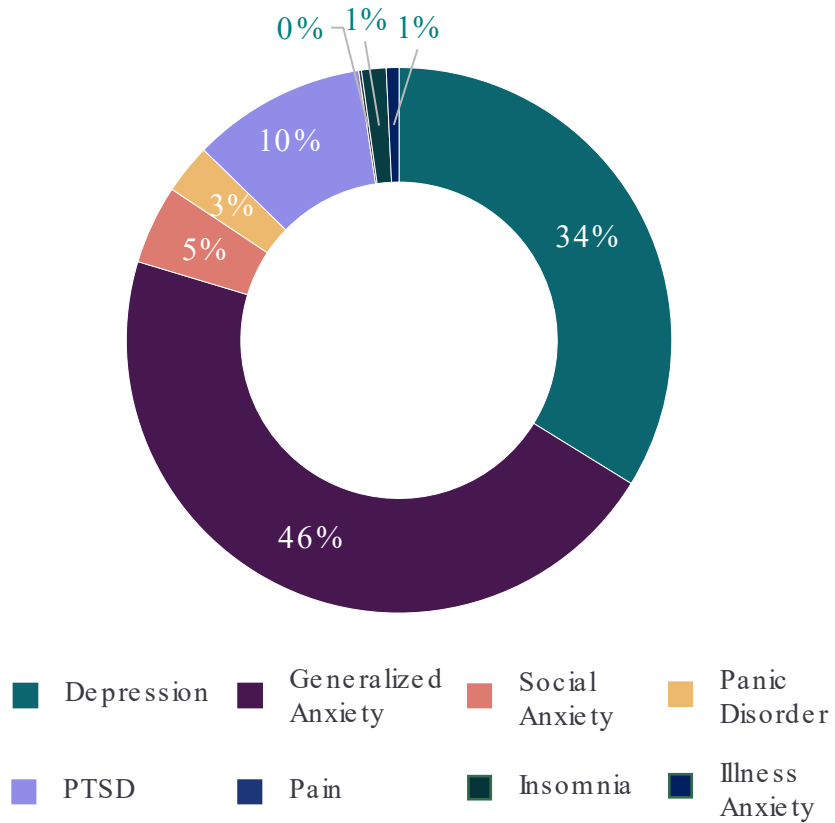
By the end of 12 consecutive weeks of therapy, users benefit from having developed coping skills to effectively adapt to stressful or difficult situations, gained the ability to alter their thinking, and effectively address negative emotions.

5 Progress Driven-Therapy

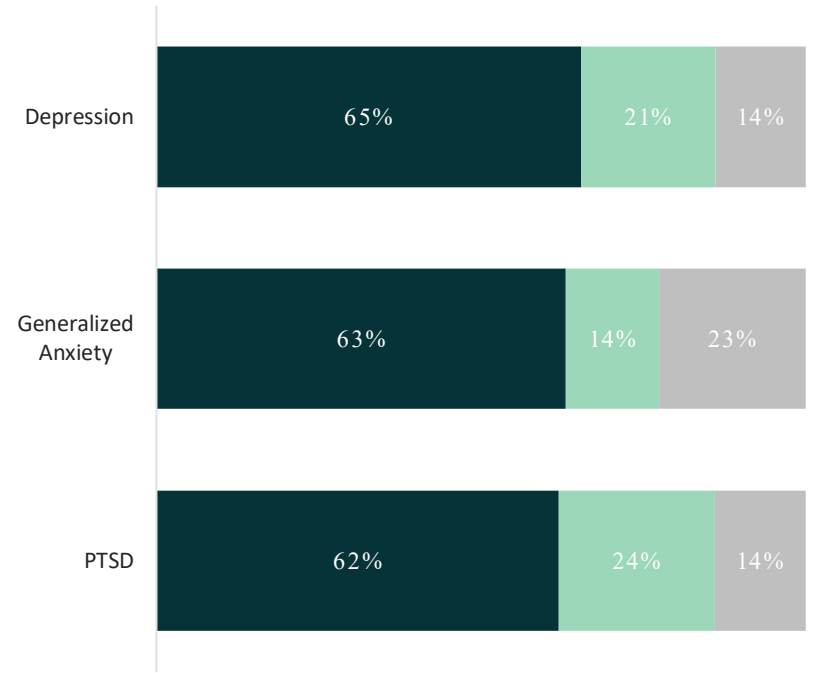
Clinically-validated outcome measures, activity completion and messaging communications are closely monitored by the therapist as inputs to adjust therapy activities.

It Works

OTN Self Referral
Primary Mental Health Condition



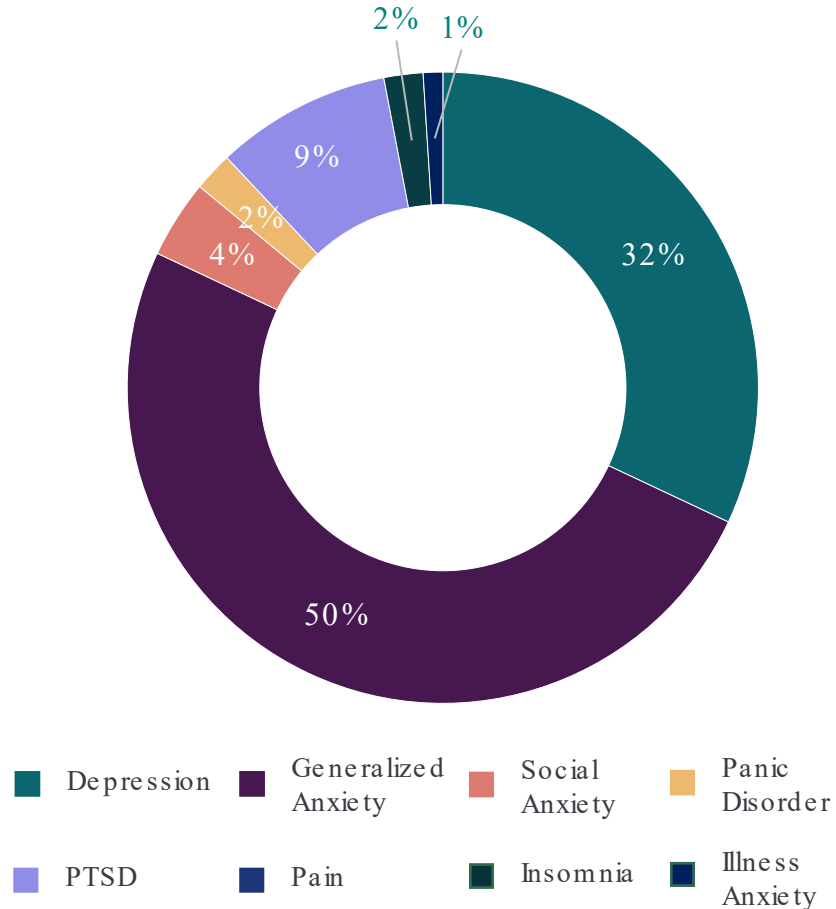
Top 3 Protocols



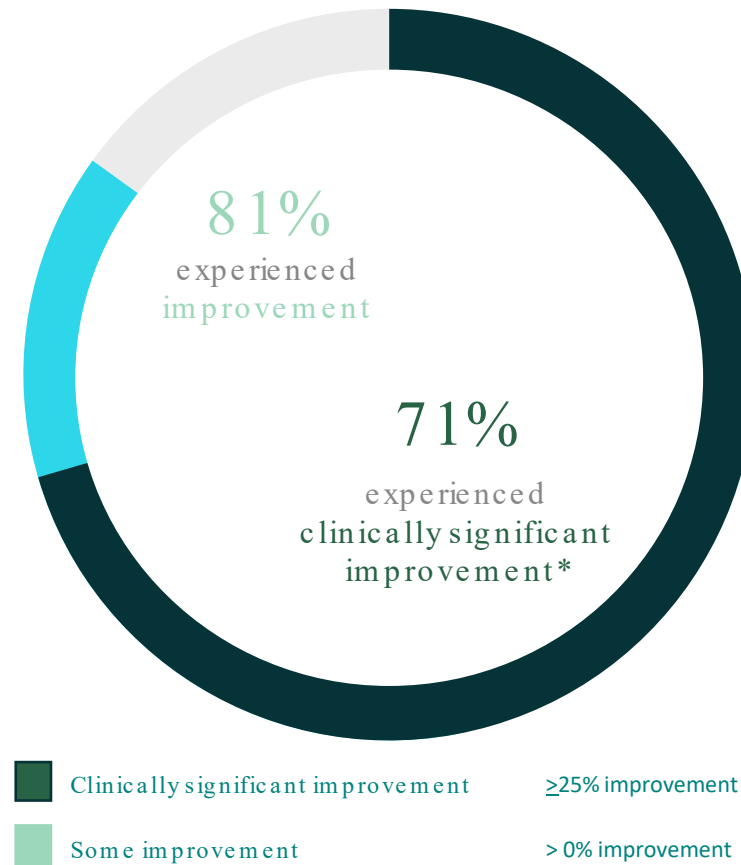
■ Clinically significant improvement ≥25% improvement
■ Some improvement > 0% improvement

It Works for Health Care Workers

HCW: Primary Mental Health Condition of onboarded clients



HCW: Symptom Reduction 3 or more Outcome Measures



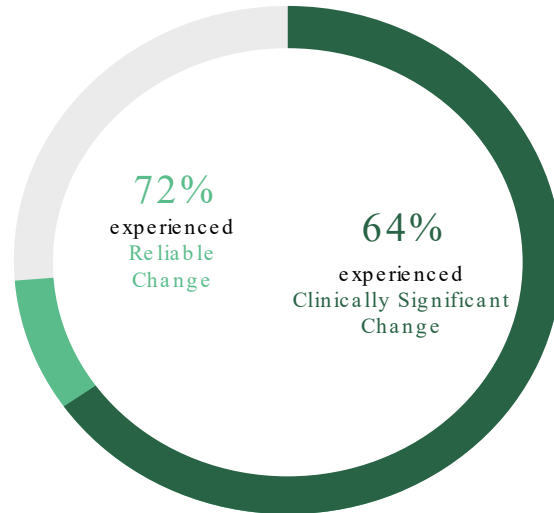
PTSD (Sept 2020)



September 3, 2020

More Real-World Evidence for the Effectiveness of Trauma-Focused Therapist-Assisted iCBT for Posttraumatic Stress Disorder and Acute Stress Disorder

By Peter Farvolden, PhD, CPsych, Meredith S.H. Landy, PhD, CPsych, Andrew Gentile, PhD, Psych (Supervised Practice), Vicki Kam, MSc



- Sample of **163** individuals
- PCL-5 Average at Assessment: **45.99**
- PCL-5 Average at Discharge: **30.54**

[Link to Article](#)

ABSTRACT

Trauma-focused therapist-assisted internet-delivered cognitive behavioural therapy (TF-TAiCBT) has been demonstrated to be effective treatment for reducing symptoms of posttraumatic stress disorder (PTSD). Internet-delivered interventions reduce common barriers to accessing evidence-based treatment such as including cost, stigma, geography, scheduling difficulties, fidelity to treatment and system capacity. However, more research is required to demonstrate their effectiveness in real-world settings and with different populations.

Given the need for more real-world evidence (RWE) to support the wide implementation of TF-TAiCBT in the treatment of PTSD and Acute Stress Disorder (ASD), we report here on the results of TF-TAiCBT for PTSD and ASD in a sample of 163 individuals who completed self-report assessments and participated in treatment.

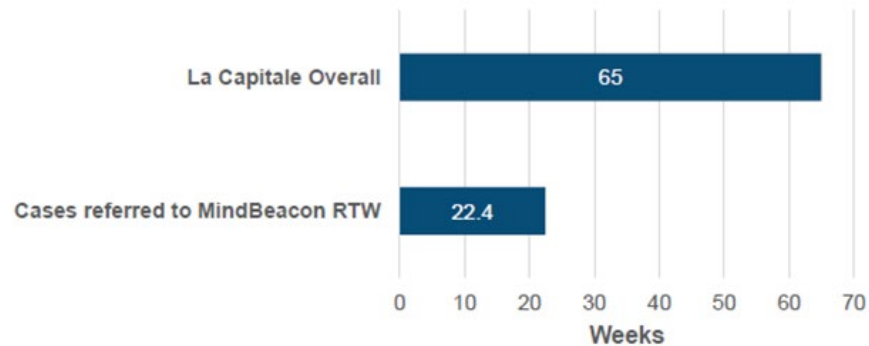
We obtained excellent results with participants who completed the assessment, were invited to treatment and completed at least two weeks of treatment, with approximately two-thirds of participants experiencing clinically significant benefit. On average they experienced a 33.59% reduction in PTSD symptoms. 72.39% reported reliable change and 64.41% reported clinically significant change according to change in scores on the PCL-5. 69.67% of participants who met the Increasing Access to Psychological Therapies (IAPT) "caseness" cut-off score of 38 for PTSD at the beginning of treatment reported clinically significant change and 63.93% of participants who met the IAPT cut-off score at the beginning of treatment no longer met that criteria at the end of treatment.

Using a benchmarking approach and analyses of within group (uncontrolled) effect sizes, we obtained results for participants who met the IAPT "caseness" cut off score at the beginning of treatment ($d=1.09$) consistent with the large effect sizes reported in meta-analyses of RCTs of evidence-based psychotherapies for PTSD and ASD.

In summary, these data suggest that Beacon TF-TAiCBT for PTSD and ASD is as effective as other first-line treatments for PTSD and ASD, including medications and face-to-face trauma-focused Cognitive Behavioural and Cognitive Processing Therapies. These results are consistent with past research and further support the wide implementation of Beacon TF-TAiCBT as an evidence-based treatment for PTSD and ASD in stepped care models in real world settings.



Average Length of LTD Cases (in weeks)



- 86% of LTD cases who participated in iCBT returned to work; 66% reduction in absence time compared to the company average, represents a reduction in cost of \$24,605 /case

“ The overall results were very positive – the group that used Digital Therapy shortened the duration of their leave by 17%, compared to the control group. This is an outstanding outcome. When we intervened within 6 weeks of the absence, we saw a 37% reduction in absence durations compared to when we intervened beyond 6 weeks.

”



Manulife

Therapist-Assisted iCBT Return to Work Program was utilized and it resulted in:

- Nurses returned to work 101 days earlier than the CISSS average (42.4% reduction in disability duration).
- In the first 35 cases, 2424 total days were saved which is equivalent to hiring 10.6 full-time nurses.
- The first 35 cases represented a savings of \$920,600 and a 19.8X ROI.

Centre intégré
de santé
et de services sociaux
des Laurentides

Québec 

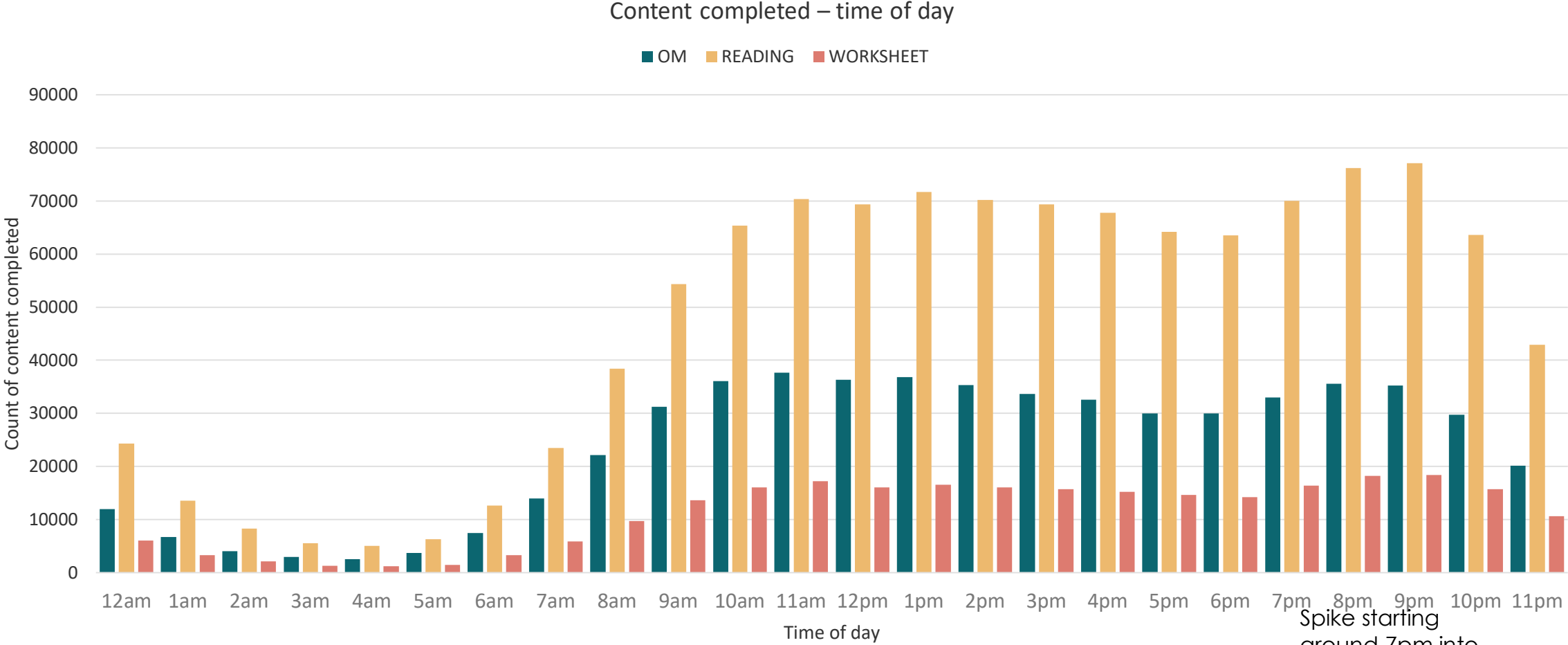
- 76 hospitals & clinics
- 17 long-term care homes
- 15K employees incl 4500 nurses

Challenges Addressed:

- Avg of 238 days off work for nurses
- \$400/day replacement cost for nurses that were on leave

It makes treatment more accessible

47% of all content is completed outside of typical office hours

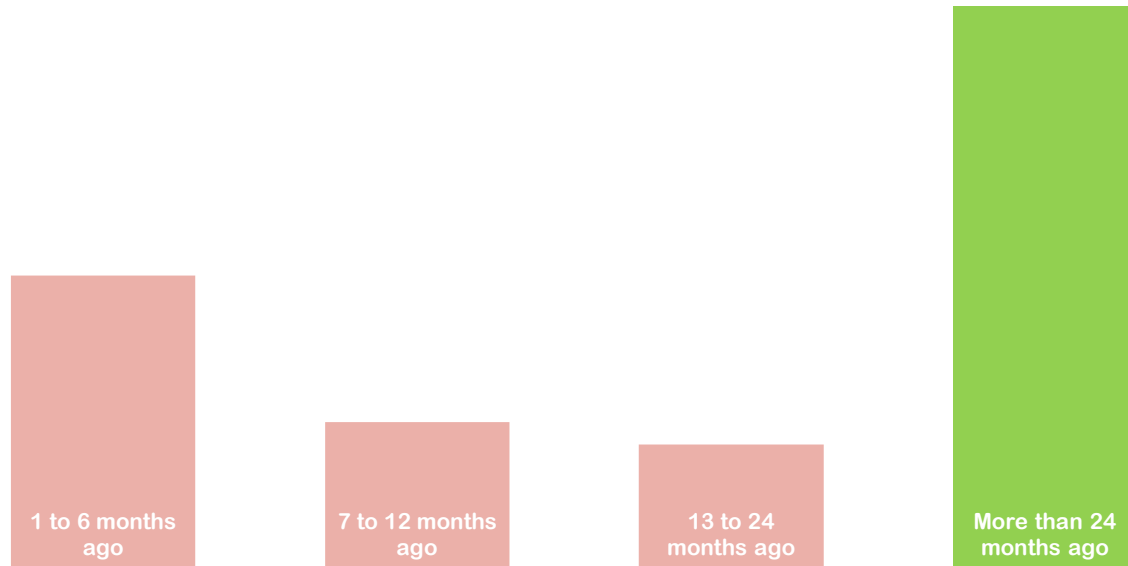


Data from May 2020 to March 2022

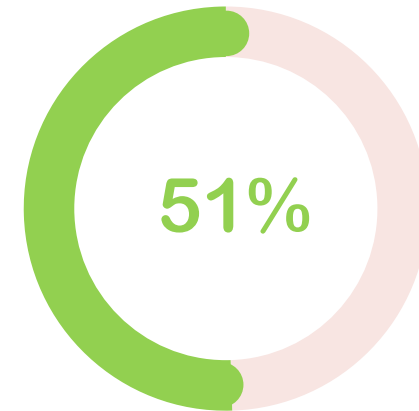
Spike starting around 7pm into late evening hours

People often wait to get help and MindBeacon is their first step

First noticed your mental health concern



First time seeking MH counselling



61% of clients waited more than a year to before seeking treatment and for more than half of our clients, ICBT is their first time seeking mental health counselling

Psychotherapy Effectiveness for Depression

DODO BIRD | Everything is equally effective

BRAND | Medication, CBT, IPT, Brief Psychodynamic Therapy, Behavioural Activation, Supportive Psychotherapy

EFFECTIVENESS WINDOW | 1/ 3 and 1/ 3 and 1/ 3

	<i>g</i>	95% CI
Barber, 2011	0.06	-0.33 to 0.45
Barrett, 2001	-0.00	-0.31 to 0.31
DeRubeis, 2005	0.31	-0.05 to 0.67
Dimidjian, 2006 BA	0.24	-0.21 to 0.67
Dimidjian, 2006 CT	0.27	-0.17 to 0.71
Elkin, 1989 CBT	0.23	-0.12 to 0.59
Elkin, 1989 IPT	0.36	0.00 to 0.71
Hegerl, 2010	0.34	0.01 to 0.67
Jarrett, 1999	0.58	0.11 to 1.05
Mynors-Wallis, 1995	0.68	0.14 to 1.21
Sloane, 1985	0.08	-0.59 to 0.75
Williams, 2000	0.20	-0.03 to 0.44
Pooled	0.25	0.14 to 0.36

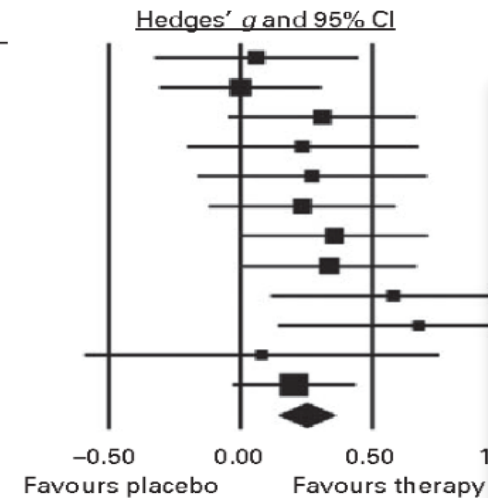


Fig. 2. Standardized effect sizes of psychotherapy for adult depression compared with control conditions.

Fig. 2. Standardized effect sizes of psychotherapy for adult depression compared with control conditions: Hedges' *g*.

So Why Bother?

UBER | Black Box

BIG DATA | Digital phenotyping, AI and data science

POTENTIAL | Understand what treatment or combination of treatments works for whom and why

Use digital phenotyping and treatment response data to predict and solve the relapse problem

Controlling the Cost of Psychological Injury Claims

- Selection and recruitment
- Education, awareness and prevention
- Early intervention
- Workplace intervention
- Claims management

Selection and Recruitment

- Don't be evil
- Should we really judge people based on a social media post at age 11?
- The human condition = everyone makes mistakes
- Virtuous people have “lapses of virtue” that do not necessarily indicate underlying “evil” (Plutarch)

Pros and Cons of Classic Apprenticeship Model

Pros

- Stress test included
- People fail
- High attrition

Cons

- Non-inclusive
- Hierarchical
- Brutal

Current Selection Methods

- What exactly are they for high-risk occupations?
- Are they “evidence-based”?
- Can they be “gamed”?

Selection Methods

- We can do better with technology
- With A/I and predictive analytics we can predict who is going to be at risk
- Hard to game digital phenotyping, e.g., heart rate variability

<https://www.runnersworld.com/training/a40208072/stress-affects-performance-heart-rate-variability/>

Create Off Ramps

- Young people have a very limited view of career options
- Encourage young people to explore other career opportunities
- Is there a role for WCBs in selection?

Education, Awareness and Prevention

- Wellness monitoring
- Including critical incident data
- Promote individual resiliency

Create Off Ramps

- People get trapped into working high paying unionized jobs until retirement
- Occupational injuries often occur early in a career
- Some signs of struggling to cope are probably evident early on
- Support lifestyle change and making different lifestyle choices before disability
- Provide opportunities for continuing education
- Remove barriers to continuing education
- Support transition to alternative employment before disability
- Plan for transition to alternative employment for some (many?,most?) people from the beginning

Early Intervention

- Wellness monitoring
- Reduce barriers to access
- Make it fast and free
- Create off ramps

Workplace Intervention

According to the Mental Health Commission of Canada, the 13 factors of psychological health and safety in the workplace are:

Organizational Culture

Psychological and Social Support

Clear Leadership & Expectations

Civility & Respect

Psychological Demands

Growth & Development

Recognition & Reward

Involvement & Influence

Workload Management

Engagement

Balance

Psychological Protection

Protection of Physical Safety

Workplace Intervention

- Wellness monitoring
- Similar organizations and units of organizations that do the same work can have very different rates of disability
- Similar organizations and units of organizations can have very different levels of interpersonal dysfunction
- Live in York Region? – you can file a Road Watch Complaint
- Use technology to identify organizational problems
- Guarding Minds at Work

<https://www.ncbi.nlm.nih.gov/books/NBK2668>

<https://www.workplacestrategiesformentalhealth.com/resources/guarding-minds-at-work>

Claims Management

- Wellness monitoring to early intervention/treatment
- Technology is reducing barriers to effective evidence-based treatment
- Technology supports measurement-based care
- Measurement-based care provides outcome and effectiveness data
- Look to support innovation in contracts

Assist Employers to Support Mental Health

WCB premium breaks/rebates. For employers implementing selection, prevention, early intervention, workplace intervention, and treatment programs that meet rigorous standards

Recognize broader array of qualified providers and innovation in contracts. e.g. MSWs, psychotherapists

Provide supports in underserviced communities – early intervention and maintenance/relapse prevention in areas lacking local mental health providers

Provide multiple points of entry – barrier free at work, home and school to encourage multiple ways in for employees and their family members; especially early intervention “pre-claim”



THANK-YOU

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