New Diagnostic Tools to Predict Symptom Improvements in Personality Disorders

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Why is it important to study suicide risk in personality disorders?

- Between 70-92% of people with Borderline Personality Disorder will attempt suicide in their lifetime (Chesney et al., 2014; Warrender et al., 2020)
- People with BPD have an average of at least 3 suicide attempts in their lifetime (Soloff et al., 1994; 2000)
- Up to 1 in 10 people with BPD will die by suicide (APA, 2000; Black et al. 2004)
- People with Narcissistic Personality Disorder (NPD) are at a higher risk of having a very medically serious or fatal suicide attempt than people without NPD (Coleman et al., 2017)

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Why is it important to study suicide risk in personality disorders?

- **50% of clinicians report fears about the usefulness of current assessments to manage suicide risk in personality disorders and want more training and tools** (Black et al., 2011; Day et al., 2018; James & Cowman, 2007; Giannoulli et al., 2009; Markham et al., 2003; Sansone & Sansone, 2013)
- Lack of clinicians trained in specialized personality disorder treatments
- Long wait times for treatment
- Substantial emergency healthcare use by people with BPD who are in a suicidal crisis and do not have a therapist (Ansell et al., 2007; Bagge et al., 2005; Bender et al., 2001; Comtois et al., 2003)

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Why is it important to study suicide risk in personality disorders?

- Although there are many treatments available for people who have suicidal thoughts (Stoffers-Winterling et al., 2022), treatment doesn't work for everyone (Woodbridge et al., 2022)
- For some people, suicidal thinking persists after treatment (DeCou et al., 2019)
- More research is needed to understand why.

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Many Available Treatments for People with Suicidal Thinking Vary In Their Degree of Specialization, Intensity, & Length

- Long term, specialized BPD treatments (e.g., 12+ months of dialectical behavior therapy, mentalization-based therapy, psychodynamic therapy)
- Brief, specialized BPD treatments (6 months of dialectical behavior therapy, psychodynamic therapy)
- 7-day intensive day hospital treatment
- 12-week outpatient treatment
- General supportive counseling
- Peer support group
- Mental health crisis line

Not all people require specialist, intensive, or lengthy treatments to experience a reduction in suicidal thinking (Links et al., 2015)

But which ones do?

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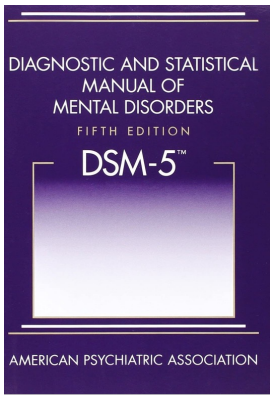
Traditional DSM-5 Assessment:

BPD = 5 of 9 possible symptoms



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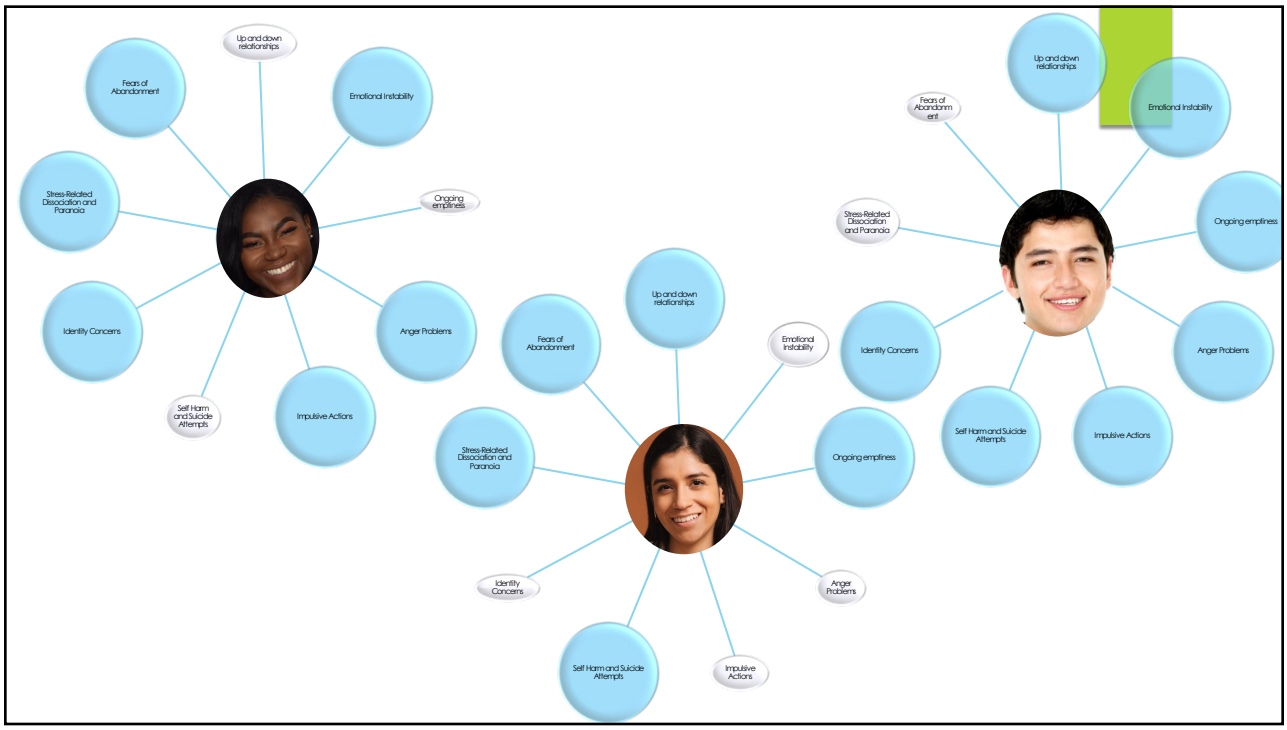
Up and down relationships
Fears of Abandonment
Emotional Instability
Stress-Related Dissociation and Paranoia
Ongoing emptiness
Identity Concerns
Anger Problems
Self Harm and Suicide Attempts
Impulsive Actions
Up and down relationships
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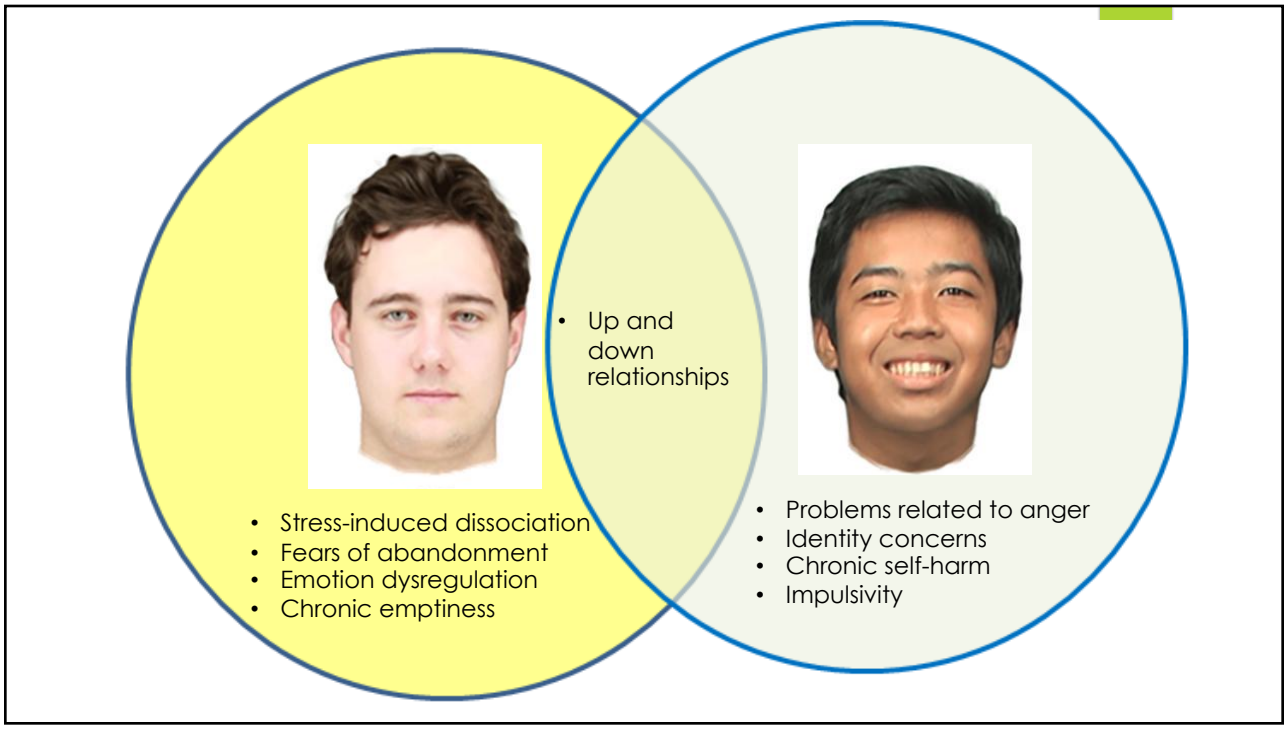
• Up and down relationships
• Stress-induced dissociation
• Fears of abandonment
• Emotion dysregulation
• Chronic emptiness
• Problems related to anger
• Identity concerns
• Chronic self-harm
• Impulsivity

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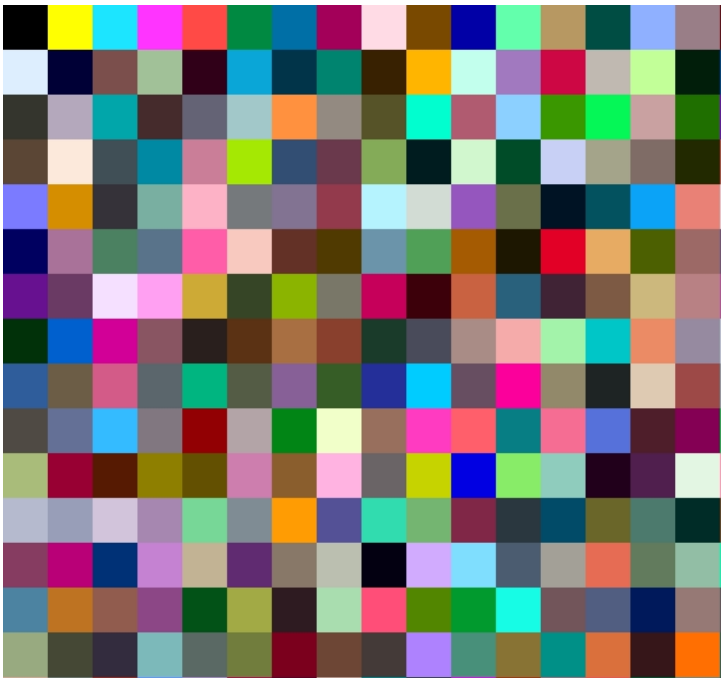

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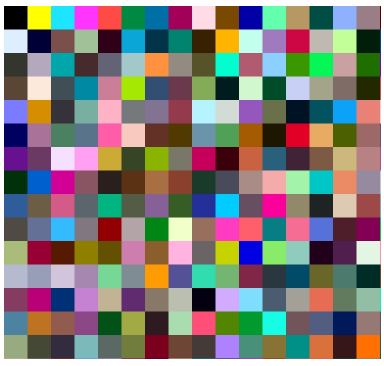

Across 256 different people with BPD, who each have a different combination of BPD symptoms:

- What "disorder" or phenomena are we really studying when we have a group of people with BPD?
- Who is going to get better with treatment "for BPD" ?
- Which type of treatment does any one of these different individuals need?
- Who needs more intensive treatment?
- Who needs longer treatment?
- Who is going to recover from BPD?
- Who is going to stop thinking about suicide after they get treatment?

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- Who is going to get better with treatment?
- Which type of treatment does each one of these individuals need?
- Who needs more intensive treatment?
- Who needs longer treatment?
- Who is going to recover from BPD?

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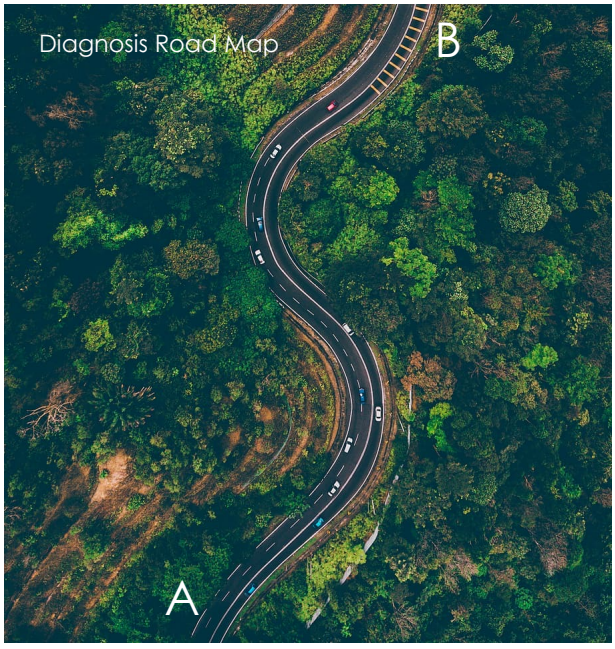

There are important problems with our current approach to diagnosis!

- DSM-5 threshold of 5 of 9 symptoms required for a BPD diagnosis is arbitrary (Krueger, 2013)
- Someone with 4 severe BPD symptoms might need more help than someone with 6 mild symptoms
- There is often disagreement between clinicians about whether someone should be diagnosed with BPD
- A BPD diagnosis itself doesn't tell us a lot about how someone is going to function in the future or about how well they are going to do in any one treatment
  - 50% of people aren't helped by DBT
- People with 1 personality disorder often meet criteria for other personality disorders at the same time

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PERSONALITY DISORDERS (K BERTSCH, SECTION EDITOR)

Check for updates

Mental

tion

DSM-5 Personality Disorders
- Borderline PD
- Antisocial PD
- Narcissistic PD
- Schizoid PD
- Schizotypal PD
- Paranoid PD
- Avoidant PD
- Dependent PD
- Obsessive-Compulsive PD
- Histrionic PD

The NIMH Research Domain Criteria (RDoC) Initiative and Its Implications for Research on Personality Disorder

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Abstract

Purpose of Review We discuss the implications of the Research Domain Criteria (RDoC) initiative for neuroscience research on personality disorder (PD). To organize our review, we construct a preliminary conceptual mapping of PD symptom criteria onto RDoC constructs. We then highlight recent neuroscience research, often built around concepts that correspond to RDoC elements, and discuss the findings in reference to the constructs we consider most pertinent to PD.

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New Way of Assessing Personality Disorders
DSM-5 Alternative Model
Levels of Personality Functioning

- **Personality disorder is being redefined**
  - International Classification of Diseases-11th Edition (World Health Organization, 2018)
  - Diagnostic and Statistical Manual-5th Edition Alternative Model (American Psychiatric Association)
- **New assessments propose that impairment in <u>self and interpersonal functioning are the core problems of anyone with a personality disorder</u>**
  - **Empathy** (interpersonal)
  - **Intimacy** (interpersonal)
  - **Identity** (self)
  - **Self direction** (self)

0 — no impairment

4 — extreme impairment

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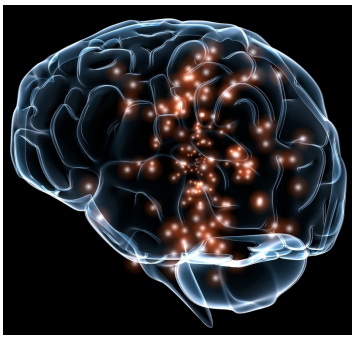
- **Is there a relationship between newly defined aspects of personality disorder impairment and functioning in the brain?**
- **Are newly defined aspects of personality disorder more strongly linked to brain function compared to traditional DSM-5 PD assessment method?**

- **Empathy** (interpersonal)
- **Intimacy** (interpersonal)
- **Identity** (self)
- **Self direction** (self)



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Participants and Methods

- 45 inpatients with personality disorder (78% female, mean age 27.5)
- All had BPD and the majority had 1+ additional personality disorder diagnoses
- Participants completed a resting-state fMRI scan

- **New way of measuring symptoms:**
  - **Severity of empathy, intimacy, identity, self-direction impairments**
- **Traditional way of measuring symptoms:**
  - **9 BPD symptoms in the DSM-5 (Bohus et al., 2009)**

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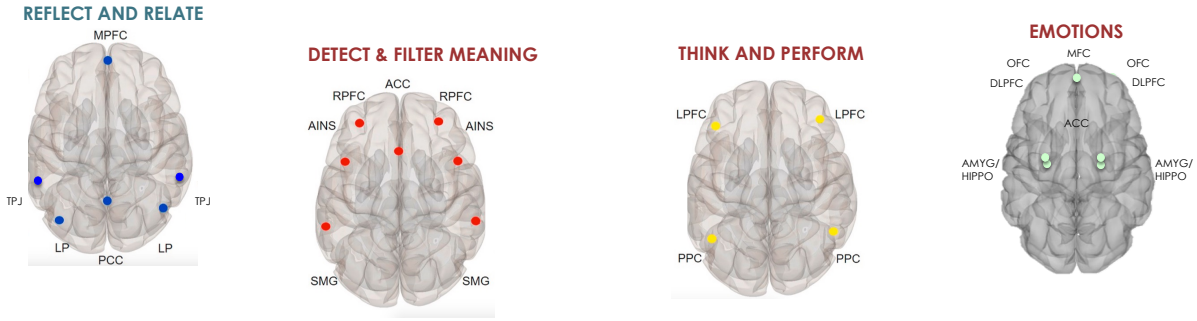
Brain Networks of Interest



Figures adapted from Kronke et al., 2020; Linder et al., 2018

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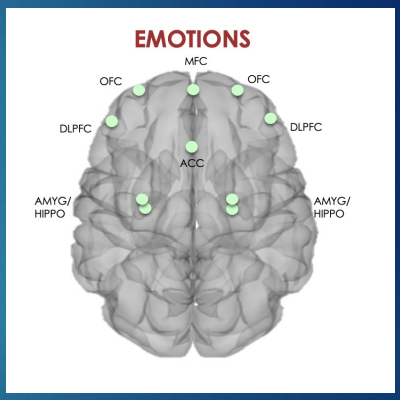
What did we find?

NEW ASSESSMENT:
More severe ***impairments in empathy were linked to*** strong ***connections*** between areas of the ***emotion*** network ($p < 0.05$)

TRADITIONAL ASSESSMENT:
No significant links between BPD symptom severity and brain function ($p > 0.05$)

CONCLUSION:
New measures may be able to capture more information about how the brain is working in people with personality disorders, compared to traditional assessment approach



Traynor et al., (2021) *Psychological Medicine*

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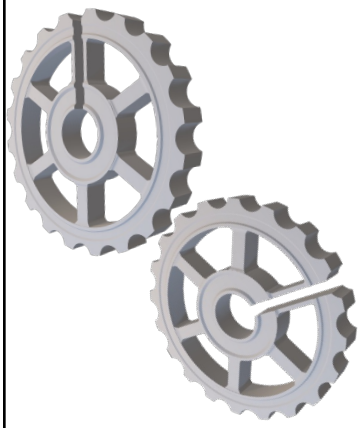
How These Findings Inspired My **BBRF-Funded Project Aims:**



- If this new way of assessing personality disorder symptoms was able to capture a stronger signal in the brain…..
- **Could this assessment method also give us more reliable information about which people are best suited to specific types of interventions for suicidal thinking?**
- **Can we use this measure to proactively identify people who are likely to respond to specific treatments for suicidal thinking?**
- **If possible, this may better streamline patients into the right treatments for them and increase the number of people who respond optimally to that treatment**

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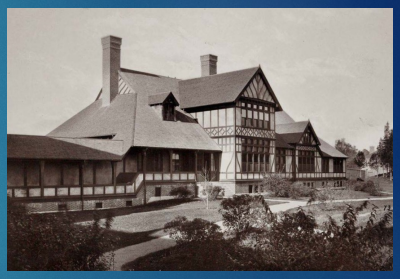
Participants:

- Beginning treatment at Behavioral Partial Hospital Program (BHP)
- Runs daily 9-3pm and includes:
  - individual therapy
  - group psychotherapy and skills training
  - medication and case management
- Typical length of stay is 12 days (very brief intervention!)
- Participants do NOT need a specific diagnosis to be in the study, but they do need to report suicidal thinking at intake
- Participants have moderate to severe mood, anxiety, substance use, and personality disorders



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Measurements At Intake

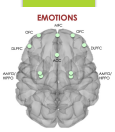
- Empathy
- Intimacy
- Identity
- Self-Direction

New Way of Assessing Symptoms

Levels of Personality Functioning Scale (LPFS; Morey 2017)

Traditional Way of Assessing DSM-5 disorders

- BPD
- Antisocial PD
- Mood Disorders
- Anxiety Disorders
- PTSD
- Obsessive-compulsive disorder
- Substance Use Disorders



MRI Brain Scan

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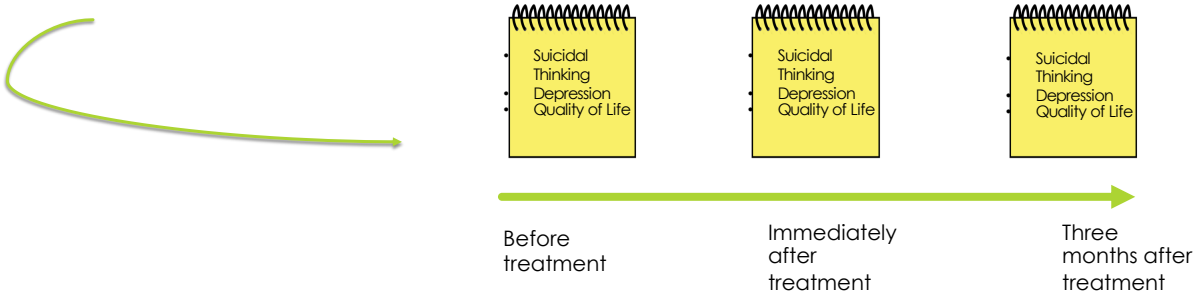

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Hypotheses

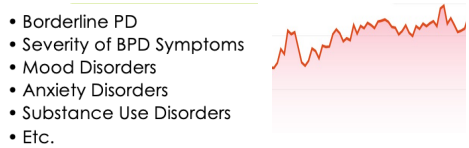
1) Individuals will experience an improvement in their symptoms across the partial hospital treatment

2) Measuring symptoms using these two different methods will give us different information about whether someone is going to continue to experience suicidal thinking after treatment is over (i.e., treatment response)

- More severe impairments in areas of self-interpersonal functioning will predict more suicidal thinking at the end of treatment

VS.

- Traditional diagnosis approach will not tell us a lot about who is going to experience a reduction in suicidal thinking at post treatment



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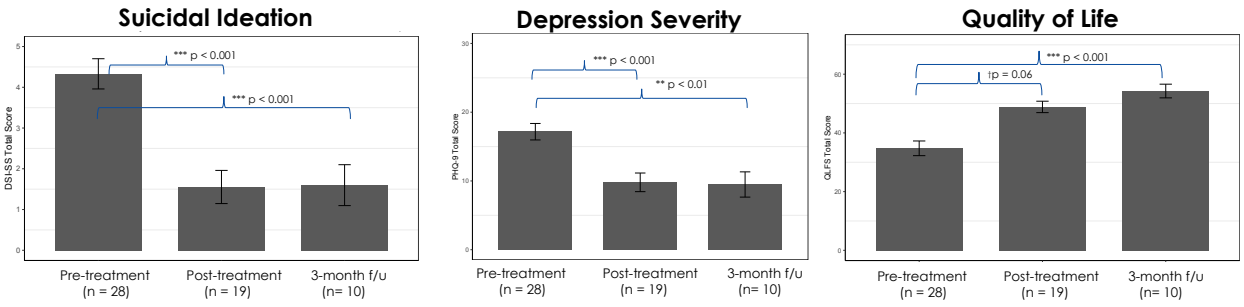
Result #1: Is the partial hospital treatment helpful?

A brief partial hospital stay is associated with improvements in suicidal thinking, depression, and quality of life (n=28)



Traynor et al., unpublished data

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Result #2: What predicts improvement in suicidal thinking?

Scores on the new diagnostic tool are the <u>only</u> predictor of the presence or absence of suicidal thinking at post-treatment

- Empathy
- Intimacy
- Identity
- Self-Direction

(predicts) → **Suicidal thinking vs. no suicidal thinking**
(LPFS Total score; p = 0.056)

- Borderline PD
- Severity of BPD Symptoms
- Mood Disorders
- Anxiety Disorders
- Substance Use Disorders
- Etc.

(does not predict) → **Suicidal thinking vs. no suicidal thinking**
(BPD symptom severity: p = 0.23; Total no. of current psychiatric diagnoses: p = 0.81)

Traynor et al., unpublished data

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Poorer self-functioning predicts the presence ideation at post-treatm

- Empathy
- Intimacy
- Identity
- Self-Direction

Relating to oth

Relating to the

<u>Self Functioning</u>

<u>Identity</u>
- I don't waste my time thinking about my experiences, feelings, and actions
- I have little understanding of how I feel or what I do
- Life is a dangerous place without a lot of meaning to it

<u>Self-Direction</u>
- I have difficulty setting and completing goals
- I have trouble deciding between different goals. (Morey, 2017)

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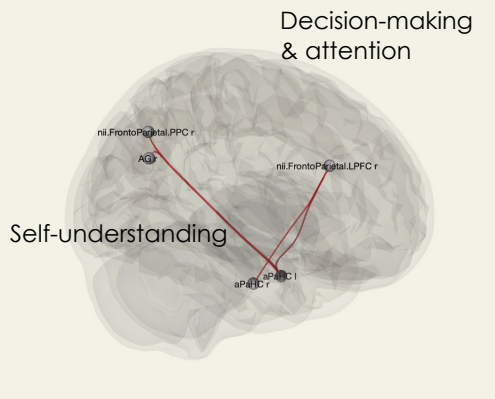
Result #3: Is there a relationship between brain function and scores on the new diagnostic tool?

Self- impairments in **identity and self-direction is** associated with the strength of functional brain connections

- Poorer self-functioning is associated with:

  1) stronger resting-state functional connectivity of the **posterior parietal cortex and the angular gyrus with the left parahippocampal gyrus** ($F = 8.55$, $p_{FDR} = 0.03$)

  2) stronger resting-state functional connectivity between the **right lateral prefrontal cortex and bilateral parahippocampal gyrii** ($F = 7.33$, $p_{FDR} = 0.03$)



Traynor et al., unpublished data

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What are the next steps in this research?

- ✓ Are there thresholds of severity (e.g., mild vs. severe impairment in self-understanding) that predict response to partial hospital?
- ✓ Can markers of brain function provide unique information to add to new assessments, to give us a more comprehensive picture of someone's response trajectory?

How will findings from this research impact the mental health field?

- ✓ Greater impairments in self-functioning at intake are associated with the persistence of suicidal ideation at post-treatment
- ✓ DSM-5 categories do not provide prognostic information about who is likely to experience remission from suicidal ideation
- ✓ New dimensional measures of personality disorder symptoms may offer better prognostic utility for understanding which suicidal people are more likely to respond to partial hospital

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Thank you!

FAMILIES FOR BORDERLINE PERSONALITY DISORDER RESEARCH

BRAIN & BEHAVIOR RESEARCH FOUNDATION
Awarding NARSAD Grants

Government of Canada / Gouvernement du Canada
Canadian Institutes of Health Research

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