Perseveration as a Risk Factor for Suicide

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Suicide is the 10th leading cause of death in the US.

In 2018, there were an estimated 1.4M suicide attempts.

Of those who attempted suicide, 20% will make another attempt within 1 year.
National Suicide Prevention Week is Sept. 4-10th

afsp.org/nspw

988
SUICIDE & CRISIS LIFELINE
The Research Prioritization Task Force of the National Action Alliance for Suicide Prevention highlights as a top priority identifying *risk factors* that predict who is likely to make a suicide attempt.
Novel Approaches Are Needed

Perseverative thoughts can include 3 major forms

Ruminations – recurrent, self-reflective and uncontrollable focus on depressed mood and its causes and consequences

Obsessions – intrusive thoughts, images, or urges that increase anxiety

Suicidal ideation – thoughts about [or preoccupation with] suicide
A Modifiable Risk Factor

Ruminations have emerged as a promising risk factor for suicidal desire and/or attempts in 10 out of 11 studies reviewed.

Suicidal ideation and obsessions can be reduced by ketamine and are a promising target.

Increased suicidal ideation in months before a suicide attempt is a risk factor for suicide attempts.

Morrison and O’Connor 2008; DiazGranados et al., 2010; Price et al., 2009; B et al. 2014; Rodriguez et al., 2013; Ballard et al., 2016.
Thoughts

Actions
Thoughts

Actions
Thoughts

Cognitive Control
Flexible switching
Regulate thought content

Digit Span  Short-term working memory capacity

Verbal Interference  Capacity to inhibit one piece of well-learned information in order to focus on another or new aspect

Switching of Attention  Information processing efficiency, under time demands

Go/No-Go  Balance between automatic responding and response suppression (impulsivity, inhibition)

Actions
Thoughts

EMOTION
- Emotional Awareness
- Non-Conscious Negativity
- Emotion Flexibility

FEELING
- Anxiety
- Stress
- Depression

SELF-CONTROL
- Social Connectivity
- Resilience
- Conscious Negativity

COGNITION
- Memory
- Focus
- Planning

Actions

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We hypothesize that:

1. The **severity of perseverative thinking** is a modifiable risk factor for suicide attempts across the diagnoses.

2. **Cognitive control**, which enables humans to flexibly switch between thought and action and to regulate perseverative thought content, may also be a modifiable risk factor for underlying vulnerability for suicidal behavior.
We will examine:

The possibility of predicting suicide attempts at the individual level with a useful level of accuracy (e.g., at least 70-80% accuracy) to predict risk of a suicide attempt by 3 and 12 months after baseline evaluation using machine learning techniques.
Identify Objective Risk Factors for Suicide Attempts Among Ideators

N=200

0 months

3 months

12 months
Contamination & Washing

Symmetry & Ordering

Harm & Checking

Taboo Thoughts & Mental Rituals

Taboo Thought

Prayer Phrase Counting
Multimodal/Multilevel Approach

1. Rapidly Relieve Symptoms
2. Understand Mechanism
3. Improve Precision
Molecular: Translational Therapeutics

Compulsive Behaviors → Novel Compounds → Compulsive Behaviors

![Image of a mouse and handwash]
Circuit: Neuroimaging and Neuromodulation

Cortical Stimulation

Deep Stimulation
Contact Us About:

Research Studies (Study Participants)

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Research Collaborations
Translate discoveries into treatments

Follow us: @RodriguezLabSU and @CRodriguezMDPhD
National Suicide Prevention Week

September 4 – 10, 2022

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988 Suicide & Crisis Lifeline
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References


