SPRINT Evidence Review Workgroup identifies areas potentially ready for a living systematic review and gaps for future research

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SPRINT's Evidence Review Workgroup reviewed current evidence-based clinical practice guidelines[1], prior evidence synthesis reports and publications[2], and active research and evaluation projects in suicide prevention[3] to identify areas in the suicide prevention field which may be ready for the development of a living systematic review (LSR). We also identified current gaps in evidence that warrant additional attention. This information is being provided to the field for consideration.

Living systematic review

We based our evaluation on the following criteria for the appropriateness of establishing an LSR[4]:

- The topic is of sufficient importance to decision-making
- Certainty in existing evidence is low or very low; *new information is likely to change understanding of the evidence base*
- There is likely to be new evidence; the topic area is moving relatively quickly, and new evidence is emerging

Summary of Findings and Considerations: Non-pharmacological, clinical interventions (e.g., psychotherapy), especially among acute-risk individuals, have had considerable attention in the empirical literature and there are several related studies underway. Clinical guideline recommendations conflict with one another on use of modalities such as cognitive behavioral therapy or dialectical behavioral therapy for prevention of suicide. While the 2019 VA-DoD clinical practice guidelines report a "strong for" recommendation for these modalities, our group did not feel that the current strength of evidence supports a strong recommendation, although this could change in the near future. Ongoing studies of other modalities, such as CAMS and brief psychotherapies, may also produce new, important evidence in the short term.

The evidence for use of pharmacological interventions in the clinical setting, especially Ketamine and Lithium, is similarly poised to shift over the short term. Evidence-based practice guidelines conflict in their recommendations for use of these medications for reducing suicide risk, yet there are several ongoing trials that are expected to produce relevant findings in the coming few years. VA-DoD guidelines currently state a "weak" recommendation for use of these medications, while other guidelines provide stronger recommendations for their use. Antidepressants, especially when used alone, remain controversial with respect to influencing suicide outcomes in nearly all guidelines.

Non-pharmacological, non-clinical, individual-level interventions (e.g., caring contacts, educational modalities) as well as technology-assisted/enhanced psychotherapy are also important areas to monitor, though may not be yet ready for an LSR. Non-pharmacological, non-clinical, individual-level interventions are not well studied. Caring contact interventions are by themselves a promising area with several studies underway, but this alone may not be enough to warrant the resources of an LSR. Technology-assisted/enhanced psychotherapy is emerging as a well-studied area but has been methodologically difficult and additional work is needed to create consensus around definitions and approaches in this area.

[1]VA-DoD Clinical Practice Guidelines 2019; Fifth national mental health and suicide prevention plan (Australia); Suicide and Suicide Prevention in Australia: Braking the silence LIFELINE; Spanish CPG for suicide; National Institute for Health and Care Excellence (NICE); Suicide-specific psychotherapy for treatment of suicidal crisis: A review of clinical effectiveness (Canada)
[2]Peterson et al, 2018; Peterson et al 2019; Belsher et al 2019; DAnci et al 2019; Doupnik et al, 2020; Torok et al 2019
[3]SPRINT active projects database; EU Clinical trials register
[4]Elliot et al, 2017.

Finally, as much of the currently ongoing research is focusing on high- or acute-risk patients, we believe that a living systematic review developed in the near-term be focused on this patient population.

1. **Proposed Key Questions for a suicide prevention LSR, in order of priority:**
    a. What is the efficacy/effectiveness and harms of non-pharmacological clinical interventions for acute-risk patients?
    b. What is the efficacy/effectiveness and harms of pharmacological interventions for acute-risk patients?
    c. What is the efficacy/effectiveness and harms of non-clinical, non-pharmacological individual-level interventions for acute-risk patients?
2. **Recommended target populations, in order of priority**: Acute-risk patients (patients with a recent psychiatric hospitalization, recent suicide attempt, or active suicidal ideation with plan); moderate risk patients seen in emergency department or crisis line settings (suicidal ideation)
3. **Recommended outcomes, in order of priority:** Fatal or non-fatal suicidal self-directed violence; Suicidal ideation severity
4. **Recommended frequency of searching all sources for new evidence:** Quarterly

Research gaps

In the process of reviewing evidence-based clinical practice guidelines, evidence syntheses, and ongoing research in the field, we identified a few key gaps in ongoing research that we believe, if addressed, would contribute significantly to the field. These gaps are outlined below.

- a. Community-level interventions, especially those which shift culture
    - i. Multi-component approaches that incorporate education, awareness, and de-stigmatization of help-seeking
        1. Especially useful may be work that builds on findings from military studies in this area[5] in the form of largescale, rigorous trials and/or dismantling studies
    - ii. Peer-to-peer approaches
    - iii. Lethal means safety, including work that addresses and incorporates firearm-owning culture
- b. Populations
    - i. Geriatric, aging Veteran population and their unique needs
    - ii. Chronic pain
        1. Reducing access to opioids and other risky medications
    - iii. Minority populations
- c. Social determinants of health

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[5]e.g., Knox KL, Pflanz S, Talcott GW, et al: The US Air Force suicide prevention program: implications for public health policy. American Journal of Public Health 100:2457–2463, 2010; Knox KL, Litts DA, Talcott GW, et al: Risk of suicide and related adverse outcomes after exposure to a suicide prevention programme in the US Air Force: cohort study. BMJ 327:1376, 2003