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The narrative crisis model of suicide as a framework for suicide prevention

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ABSTRACT

The Narrative Crisis Model of Suicide (NCM) is an iterative, dynamic, diathesis-stress model that conceptualizes individuals' progression to suicidal behavior through the incorporation of four distinct and successive stages. The NCM strives to reflect a paradigm change in the prevention of suicide: rather than assessing individuals' suicide risk and categorizing them along different risk levels based on their self-reported suicidal ideation at a given time, the NCM proposes to assess psychological vulnerabilities and processes characteristic of critical milestones in the progression from chronic factors to acute suicidal mental states. As a comprehensive model, the NCM provides an empirically grounded conceptual framework for intervention at each stage of the psychological progression towards suicidal action. In this article, we propose stage-specific treatment modalities, moving progressively from acute to chronic risk. Such treatments would first target the acute Suicide Crisis Syndrome (Stage 4), the subacute suicidal narrative (Stage 3), deficits in stress management (Stage 2), and finally long-term risk factors/trait vulnerabilities (Stage 1). Although future research is needed to establish the optimal combination and sequence of empirically-supported interventions, the NCM may be a useful framework to guide innovations in clinical intervention and research.

Suicide is a significant global public health issue, claiming over 700,000 lives annually worldwide [135], with over 49,000 of these occurring in the United States [25]. Although there was a slight decline in suicide rates in 2019 and 2020 [46], rates have consistently risen over the last five decades, peaking in 2022, with notable sociodemographic differences based on age, gender, and minoritized identities [37,127]. The COVID-19 pandemic accentuated disparities in suicide rates, with an increase in suicidal behaviors observed in certain demographic groups, such as non-Hispanic American Indian/Alaskan Native and non-Hispanic Black youth [17]. However, in the general public, there was no evidence of greater-than-expected suicide rates during the COVID-19 pandemic [98]. Despite suicide prevention efforts, suicidal thoughts and behaviors have become increasingly prevalent among all minoritized populations, with the highest age-adjusted suicide rates observed among American Indian/Alaskan Native individuals [37]. LGBTQ+ individuals also face an elevated risk of suicidal ideation and attempts compared to their heterosexual counterparts [58,111], and youth identifying as both racial/ethnic and sexual minorities are at a particularly heightened risk [96]. Finally, there is evidence that suicide risk is elevated in the presence of nearly every single psychiatric disorder [60], highlighting the need for targeted suicide risk assessment and intervention procedures that do not solely target psychopathology.

Opportunities for intervention are ample: up to half of suicide decedents made contact with a healthcare provider within a month [82], and up to 80 % within a year [126], of their deaths. However, such opportunities are often missed, leading to tragic outcomes. Recent research indeed indicates that the majority of individuals who attempt or die by suicide deny suicidal thoughts, even when asked directly by healthcare providers [6,81]. While both adults [7,8,15,10,106] and adolescents [61,77] often conceal their suicidal thoughts, this denial can be genuine due to the rapid fluctuations in suicidal ideation and intent [59,74], sometimes emerging just minutes or hours prior to suicidal behaviors [42,120].

The idea that suicide risk can be assessed by clinicians solely through

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direct inquiry about patients' suicidal thoughts is thus flawed. It can lead clinicians and patients alike to miss the important psychological markers of suicidal mental states, which have been repeatedly linked to suicidal behaviors in the literature [4,11,136,138,137]. Furthermore, establishing risk categories based on patients' self-reported suicidal ideation at a given moment contradicts the growing body of literature demonstrating that such ideation fluctuates very rapidly and that risk levels may thus change within minutes after patients' visits with their providers [59,74]). Instead, a growing number of experts in suicide prevention emphasize the importance of developing and disseminating evidence-based models that provide clear conceptualizations of the psychological processes that trigger suicidal mental states [52,76]. One such theoretical framework is the Narrative Crisis Model of Suicide (NCM; [14,52]), which provides a comprehensive, empirically-supported, and clinically-relevant framework to understand, assess, and treat suicidal thoughts, urges and behaviors. The purpose of the present article is to describe the potential utility of the NCM in identifying discrete and staged mental processes in individuals' progression from underlying vulnerabilities to actual suicidal behaviors, and to propose stage-relevant and empirically-supported interventions to prevent suicide. We begin with a brief overview of the NCM and its distinct stages and then discuss applicable treatment models at each stage of the NCM. Finally, we close with relevant clinical and research implications, as well as future directions for both clinical practice and research.

Overview of the narrative crisis model of suicide

The NCM is a four-stage, dynamic, diathesis-stress model that incorporates chronic (Stage 1), stress-related (Stage 2) subacute (Stage 3), and acute (Stage 4) factors associated with suicidal behaviors in an effort to (1) conceptualize individuals' progression from underlying and chronic vulnerabilities to acute suicidal crisis states; and (2) provide a framework for the design and implementation of efficacious treatments that specifically target each stage in the suicidal process (see Fig. 1). This model was initially developed with the goal of establishing a conceptual framework that highlights complex interactions between chronic, subacute, and acute suicide risk, provides direct treatment targets for each stage of risk, and, as such, bridges gaps between theory, research, and clinical practice. Moreso, the NCM is intended to provide insights on transdiagnostic risk (as opposed to focusing on any one diagnostic category or population) and risk in which suicidal ideation is not openly disclosed, thereby innovating upon existing paradigms at the time of its development.

The NCM suggests that individuals with an inherent vulnerability to suicide who are faced with a stressor (also referred to as stressful life event) may develop a "suicidal narrative," which features a distorted perception of themselves and others. Within this narrative they struggle to disengage from unrealistic life goals, believing their happiness relies solely on achieving them. As these goals remain frustratingly unattainable, they perceive profound social defeat, humiliation, and become convinced they are a burden on others, incapable of belonging. The intense and unyielding nature of this self-image becomes extremely anguishing, leading to a perception of having no future [30]. When this subacute state reaches a critical intensity, perhaps triggered by additional stressors or by accumulation, it may trigger the Suicide Crisis Syndrome (SCS), an acute suicidal mental state that involves an intense feeling of entrapment accompanied by severe cognitive and affective dysregulation, hyperarousal, and social withdrawal [52,117]. A comprehensive list of symptoms associated with the SCS is presented in Table 1. Notably, suicidal ideation is not explicitly assessed or included as part of the SCS, as research has shown suicidal ideation to be an unreliable predictor of suicidal behaviour [54,103]. The staged components of the NCM and the model as a whole demonstrated significant association with concurrent and prospective suicidal behaviors (for a review, see Bloch-Elkouby et al. [14]). Specifically, there have been two tests of the full model to date [12,31], in addition to numerous partial tests. First, among a small sample of psychiatric inpatients, direct pathways from trait vulnerabilities (i.e., childhood abuse, lack of perseverance, impulsivity, preoccupied attachment, perfectionism, and insecure attachment) to the suicidal narrative (i.e., thwarted belongingness, perceived burdensomeness, defeat, fear of humiliation, goal disengagement, and goal reengagement), to the SCS (i.e., entrapment, emotional pain, rumination, panic/dissociation, and fear of dying), and to suicidal thoughts and behaviors at one-month follow-up were statistically significant, explaining approximately 10 % of the variance in future suicidal ideation and 40 % of the variance in future suicide attempts [12]. Second, among a large sample of psychiatric inpatients and outpatients, chronic risk factors were associated with suicidal thoughts and behaviors, both concurrently and at one-month follow-up, indirectly through stressful life events, the suicidal narrative, and the SCS in a serial mediation model [31]. Although the four stages of the NCM are conceptualized to be successive, and partially demonstrated to follow the described sequence [12,31], one's progression to suicidal behaviors may also follow different pathways, also falling within the NCM framework For example, an individual may develop SCS immediately after experiencing a stressor, without *fully* engaging in the internal cognitive stage described in the Suicidal Narrative. A different pathway may involve several recurrent SCS episodes. For example, one may experience a first SCS, during which the individual may engage some degree of suicide planning. Such planning may be "mentally shelved" as described by Jobes and Joiner [139], and thus more readily available to the individual upon the emergence of a new crisis. The formulation of a possible plan may in fact alleviate the distress caused by the individual's experience of entrapment [140], and thus contribute to the reduction of

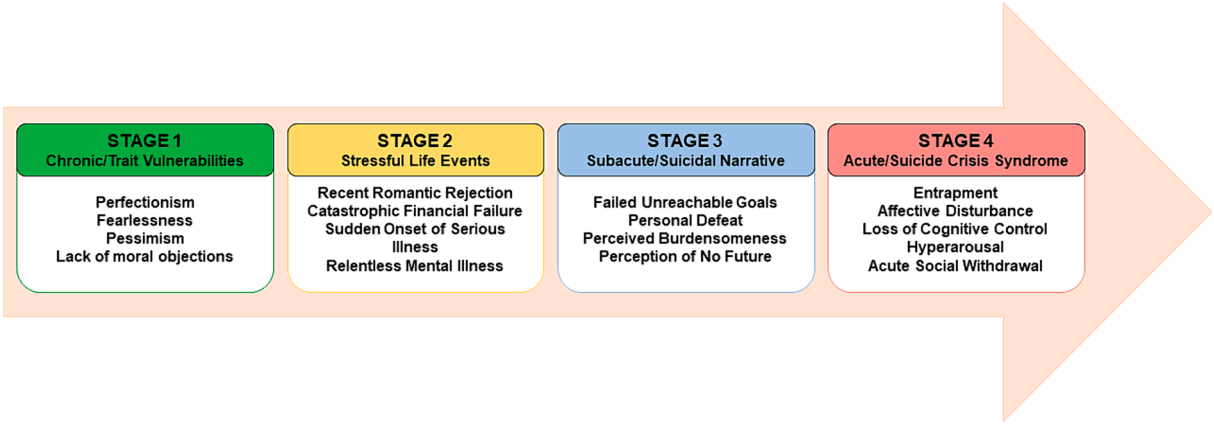

Fig. 1. The Stages of the Narrative Crisis Model of Suicide.

Table 1
Proposed Criteria for the Suicide Crisis Syndrome.

A. **Entrapment/Frantic Hopelessness:** A persistent or recurring overwhelming feeling of urgency to escape or avoid an unacceptable life situation that is perceived to be impossible to escape, avoid, or endure
B. **Associated Disturbances:**
Affective Disturbance: Manifested by at least one of the following:
Emotional pain
Rapid spikes of negative emotions or extreme mood swings
Extreme anxiety that may be accompanied by dissociation or sensory disturbances
Acute anhedonia (i.e., a new or increased inability to experience or anticipate interest or pleasure
Loss of Cognitive Control: Manifested by at least one of the following:
Intense or persistent rumination about one's own distress and the life events that brought on distressAn inability to deviate from a repetitive negative pattern of thought (cognitive rigidity)An experience of an overwhelming profusion of negative thoughts, impairing ability to process information or make a decision (ruminative flooding/cognitive overload)
Repeated unsuccessful attempts to suppress negative or disturbing thoughts
Disturbance in Arousal: Manifested by at least one of the following:
Agitation
Hypervigilance
Irritability
Global insomnia
Social Withdrawal: Manifested by at least one of the following:
Withdrawal from or reduction in scope of social activity
Evasive communication with close others

the SCS intensity until its re-emergence caused by a subsequent stressor.

Overall, the NCM strives to reflect a paradigm change in the prevention of suicide. Rather than assessing individuals' suicide risk and categorizing them along different risk levels based on their self-reported suicidal ideation at a given time, the NCM proposes to assess psychological vulnerabilities and processes characteristic of critical milestones in the progression from chronic factors to acute suicidal mental states [52,15,10].

Utilizing the narrative crisis model as a framework for clinical intervention

The NCM introduces numerous potential avenues for intervention through its progressive conceptual framework, highlighting all stages of the suicidal process from long-term baseline vulnerabilities to the acute suicidal mental state reflected in the Suicide Crisis Syndrome. By providing clinicians with an empirically-supported formulation of the progression from long-term vulnerabilities to suicide-related outcomes, the NCM can guide clinicians' assessments of their patients as well as their decision-making with regard to treatment selection and/or escalation. Furthermore, the NCM can guide clinicians to conduct psychoeducation, an intervention showed to be very effective to enhance patients' engagement in treatment [13]. In the subsequent sections, we highlight specific empirically-supported interventions—including psychotherapy, psychopharmacology, skills coaching, crisis management, and lethal means counseling—that have demonstrated promise in preventing suicidal outcomes, and can be uniquely applied to each NCM stage to address its specific mental processes.

This comprehensive treatment approach for suicide prevention addresses symptoms and processes across the four NCM stages in reverse order, from most to least acute (see Fig. 2). Once SCS symptoms (Stage 4) are treated and resolved (or at least reduced substantially), clinicians are then able to address the subacute symptoms of the suicidal narrative (Stage 3). Finally, after the suicidal narrative is restructured to a viable life narrative (i.e., after acute and subacute suicidal episodes abate), stress management interventions (Stage 2) and long-term treatment for chronic symptoms (i.e., trait vulnerabilities, Stage 1) is warranted. Although we believe these treatment modalities should be utilized sequentially, this hypothesis ultimately should be tested empirically through clinical trials. It is also possible that treatments might be implemented iteratively, as patients might cycle back over time—or

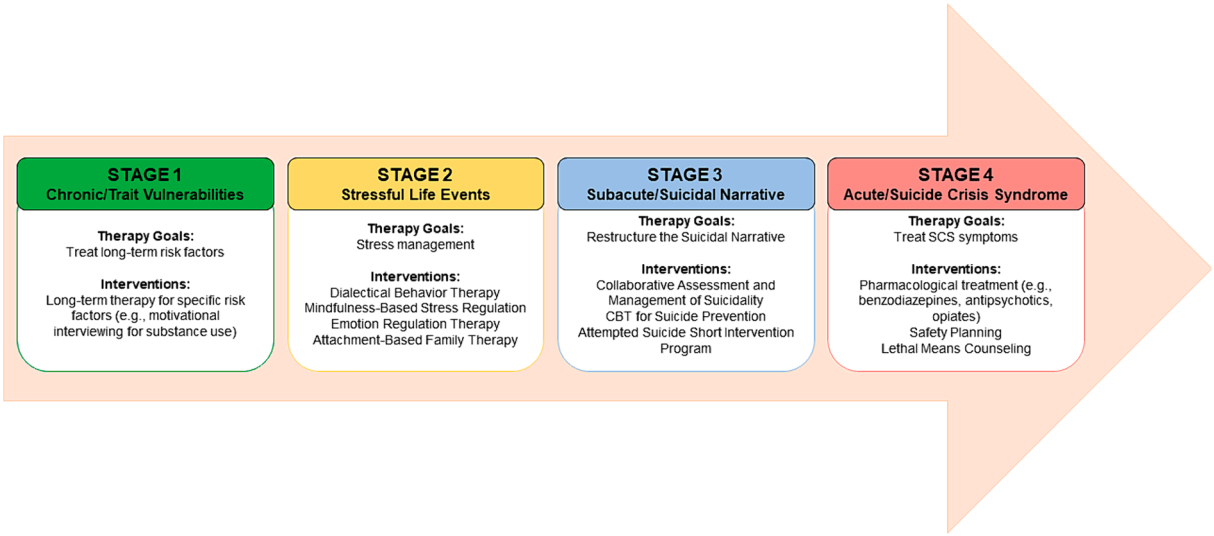

Fig. 2. The Narrative Crisis Model of Suicide Staged Treatment Framework.

even within one episode—to different stages of the model.

Stage 4: treatment of the suicide crisis syndrome

Step 1: pharmacological treatment

The SCS is characterized by cognitive-affective dysregulation featuring perceptions of entrapment/frantic hopelessness, affective and physiological arousal and lability, cognitive dysfunction, and social isolation. Given the near-psychotic nature of its presentation, with difficulties in cognitive functioning and extreme affective dysregulation often accompanied by unusual somatic sensations, some have theorized that pharmacological intervention may be essential in managing and improving an acute suicidal crisis [51–52], analogous to treatment of an epileptic state. In other words, in the full throttle of the SCS, patients are unable to think clearly and flexibly, and thus their ability to fully engage in psychotherapy is impaired. Several biological underpinnings of SCS symptoms may serve as neural, neuroendocrine, genetic, and physiological mechanisms through which the SCS could be targeted through pharmacological intervention (see [1,5,23], for overviews). For instance, frantic hopelessness/entrapment and severe anxiety may be linked to disturbances in the hypothalamic–pituitary–adrenal (HPA) axis with dysregulated corticotropin-releasing hormone and cortisol levels. Affective disturbances may, in part, relate to alterations in dopaminergic circuits that are involved in reward and antireward systems. Loss of cognitive control could be considered a form of thought disorder and may be associated with disrupted neurocognitive functioning, including deficits in executive functioning, attention, and decision-making. Hyperarousal may be linked to autonomic dysregulation, characterized by reductions in both heart rate variability and electrodermal activity, and amygdala hyperactivity. Acute social withdrawal may be associated with HPA axis activation, alterations in endogenous opioid and cannabinoid systems, and low oxytocin availability. Finally, across each of these symptoms, inflammation and inflammatory processes may play a contributory role.

Accordingly, we could theorize that the use of medications or neuromodulation strategies targeting some of these implicated biological underpinnings may aid in mitigating suicide risk within the context of a suicidal crisis. Theoretically, the frantic aspect of entrapment/frantic hopelessness (criterion A of the SCS) as well as hyperarousal (criterion B3) and panic-somatization aspect of affective disturbances (criterion B1) could be treated with long-acting benzodiazepines (e.g., Clonazepam), positive allosteric modulators (PAMs) of the GABA A receptor (inclusive of a wide range of sedative agents), some of the sedating second-generation antipsychotics (e.g., Quetiapine or olanzapine), and/or corticotropin-releasing hormone receptor 1 antagonists (e.g., Antalarnin). Emotional pain (B1) could be targeted with a pulse treatment of ketamine-related agents or exogenous opiates, the latter with or without adjunct naloxone, though abuse liability is obviously a concern. Whereas naloxone can lower abuse potential and reduce euphoria with opiates, it is important to note that naltrexone pretreatment completely blocked the antisuicide effects of IV ketamine [133]. Loss of cognitive control (B2), and its most severe form of ruminative flooding, could be treated acutely with small doses of potent first-, second-, and third-generation antipsychotics. Acute social withdrawal (B4)—and possibly anhedonia (B1)—may be responsive to oxytocin receptor agonists, although at this stage such treatments are not available. Alternatively, advances in neuromodulation, mainly with accelerated theta burst transcranial magnetic stimulation (TMS), was safe [32] and has shown promise in reducing suicidal ideation [132] and low-intensity focused ultrasound (LIFUS) has the potential, for example, to reduce the hyperarousal and emotional reactivity of the SCS via reduced amygdala hyperactivity (Fonzo, Barksdale, & Nemeroff, unpublished observations). Electroconvulsive Therapy (ECT) has also been reported to reduce acute suicide risk associated with severe depression [71].

Moreover, it is worth exploring the efficacy of several psychiatric medications that have been shown to alleviate suicidality long-term in acute management of the SCS. For instance, clozapine has been associated with reductions in suicidal behavior among individuals with schizophrenia [86,129]. Similarly, lithium is linked to reductions in suicidal behaviors and deaths by suicide [28,121], possibly through reductions in patients' impulsivity [94], though this effect has also been found in the absence of mood stabilization [116].

Additionally, ketamine, as noted above, has received increasing attention as being efficacious in producing acute reductions in suicidal ideation [38,134]. Of note, the first report of its kind by Terefe and colleagues [141] showed promising results using a combination of ketamine treatment with CBT to treat a patient who presented with acute SCS. Although the opioidergic mechanisms underlying ketamine's effectiveness for SCS treatment remains to be confirmed, this report demonstrates the feasibility of frontline pharmacological intervention for the management of the SCS. Notably, there is also some support for the role of esketamine in managing acute suicidal ideation [24], though findings are mixed across studies and in need of future research (see [69], for systematic review of the use of ketamine and esketamine). The interventions must be effective enough to fully treat or substantially reduce the SCS intensity within the 3-to-7-day timeframe of extended emergency room stays or inpatient hospitalization [53].

Step 1b: new SCS-specific psychotherapy crisis intervention

In addition, Bloch-Elkouby and colleagues [13] have developed a crisis intervention to alleviate the crisis-state experienced by individuals with SCS and to allow patients to engage in foundational therapy work that sets the ground for effective interventions to take place upon resolution of the SCS stage. Their intervention strives to reduce the intensity of the SCS while taking advantage of the window of opportunity for change triggered by patients' experience of crisis, on the one hand, and change their response to future crises, on the other. The approach features one to four sessions through which therapists help patients reflect on the state of crisis they are experiencing, develop an NCM-based individualized model of their progression to suicide, and engage in immediate self-regulation and co-regulation strategies. Throughout this process, alliance-focused normalization and self-compassion principles are prioritized to avoid patients' disengagement from the process and to enhance their ability to develop self-reflection and self-regulation skills in real time [9–10,15]. The intervention was piloted in an adult psychiatric unit between 2021 and 2023, and yielded promising anecdotal evidence and preliminary indications of feasibility [13].

Step 2: safety planning

Additional psychosocial interventions that require few cognitive resources, yet aid patients in managing acute periods of arousal and suicidal thoughts and urges, may be useful. In particular, two comparable brief (i.e., 20–45 min) single-session interventions involving the creation of a written safety plan have been developed and validated: crisis response planning [114]) and safety planning intervention [123]. Safety planning involves the creation of written individualized steps that patients can follow during moments of intense emotional distress and/or suicidal crises, when these skills may otherwise be challenging to cognitively access. Six primary components are emphasized: (1) recognizing warning signs (e.g., thoughts, images, physiological sensations, affects/moods, behaviors) that typically precede a suicidal crisis; (2) using self-directed or internal coping strategies that function as an intentional form of distraction from suicidal urges and intense affects; (3) engaging with social contacts for distraction (i.e., without explicitly focusing on one's distress) and/or support (i.e., discussing one's emotions and experiences with the goal of receiving support) in managing crises; (4) connecting with mental health professionals or agencies in the event that the aforementioned steps do not help mitigate the crisis; (5) identifying patients' individualized reasons for living; and (6) means

safety planning to reduce environmental risk for suicidal behavior.

Patient use of safety/crisis response plans is high [19], and patients and staff each perceive safety plans to be highly useful in increasing safety, preventing suicidal behavior, and increasing treatment engagement [26,125]. Consistent with these perceptions, safety planning interventions have demonstrated efficacy in reducing suicidal ideation [20,113] and decreasing engagement in suicidal behaviour [21,124] among patients presenting to an emergency department and active duty military service members. Although mechanisms of safety planning have not yet been empirically examined, several possible factors have been proposed to explain why safety planning may work, including providing distraction, increasing connection, promoting autonomy, building competence, reducing engagement in impulsive urges, hindering engagement in suicidal behavior, and reducing patients' cognitive load (see Rogers et al. [108,112], for overview). Whether safety planning may also be useful in mitigating several symptoms of the SCS, such as entrapment, affective disturbances, loss of cognitive control, hyperarousal, and social withdrawal, should be tested empirically.

Step 3: lethal means counseling

Engaging in means safety is critical for ensuring the safety of one's environment during a suicidal crisis to minimize the possibility of making a suicide attempt. Suicide risk is exponentially magnified when patients report a suicide plan involving readily accessible and potentially lethal means [68]; lethal means counseling aims to limit access to, or decrease the lethality of, means for suicide [3,72]), in order to mitigate risk of engagement in suicidal behavior, both in general and within the context of suicidal crises. Such strategies may involve removing means entirely from the environment (e.g., giving medications to a loved one for storage) or making their use more difficult (e.g., using a gun lock and storing ammunition separately from firearms). This is particularly the case for firearm safety, given the high lethality of firearms [119] and the notably elevated suicide risk among individuals with access to firearms [92,91]. In essence, creating physical and psychological distance (i.e., reduced cognitive accessibility and attachment to specific means; see [109,107] between at-risk individuals and potential suicide methods reduces the likelihood of using those means for a suicide attempt during a crisis. Within the context of the SCS, environmental and contextual measures, such as means safety, may allow time for the crisis to pass without requiring the use of substantial, and possibly unavailable, cognitive resources to ensure safety. However, notably, lethal means counseling should not be limited to acute stages; although it may take place at this time, it is also a directly relevant upstream initiative that should be incorporated broadly among potentially at-risk individuals.

Stage 3: treatment of the suicidal narrative

After management of the SCS, short-term psychotherapies aiming to restructure the suicidal narrative into an acceptable life narrative [85] and/or address individual components of the suicidal narrative (i.e., thwarted belongingness, perceived burdensomeness, defeat, fear of humiliation, difficulties with goal disengagement and reorientation) are relevant to prevent the onset of future crises and diminish one's identity-based connection with suicide-related beliefs and cognitions. Several psychosocial interventions specifically intended to treat suicidality have been developed and validated. The most widely utilized and empirically-supported psychosocial interventions include the Collaborative Assessment and Management of Suicidality (CAMS; [63] Cognitive-Behavioral Therapy for Suicide Prevention (CBT-SP; [122], the Attempted Suicide Short Intervention Program (ASSIP; [90], and Family Therapy [93], among others. Although these treatments were designed to treat general suicide risk, within the NCM framework, they are slated for the treatment of the suicidal narrative. Whether this sequential approach yields superior results to utilizing psychosocial interventions concurrently with or prior to psychopharmacological treatment of the SCS requires a direct comparison in prospective randomized clinical trials. However, psychosocial interventions require relatively intact cognitive focus and flexibility, which is compromised in the SCS. Hence, in the context of the NCM, these interventions most appropriately target the subacute stage of the suicidal narrative.

Collaborative Assessment and Management of Suicidality. CAMS [63] is an empirically-supported framework for suicide risk assessment and intervention that was designed to manage suicidal thoughts and behaviors through a time-limited, flexible, approach. Originally designed for use in university counseling centers and with outpatients experiencing suicidal ideation [62,66], CAMS has since been implemented virtually in emergency departments [44], with active duty military/veteran samples [65,67], and in inpatient settings [47,115]. CAMS is unique in that it emphasizes collaboration and transparency, alongside an empathetic, non-judgmental stance, throughout the consent, assessment, intervention, and termination processes [63]. It is agnostic with regard to theoretical orientations and thus can be administered by psychotherapists from various theoretical and practice backgrounds. Treatment continues until suicidality resolves and typically lasts approximately 12 sessions [33].

Treatment is guided by the Suicide Status Form (SSF; [64], which is completed at the start of each session. The first-session version of the SSF contains three sections focused on assessment and treatment planning; quantitative ratings and qualitative responses assessing several empirically-derived risk factors for suicide are assessed in the first section: psychological pain, hopelessness, self-hatred, agitation, and perceived suicide risk. The second section assesses other proximal risk factors and histories (e.g., lifetime suicide attempts), whereas the third section of the SSF guides the development of the treatment plan, which focuses on addressing self-harm, creating a stabilization plan, and reducing patients' individual factors (identified in the first section) that are driving their suicidal thoughts and behaviors. Subsequent sessions utilize tracking versions of the SSF that can be used to assess suicidal thoughts and guide treatment planning and updates as necessary. In this way, CAMS can be flexibly adapted to focus on factors driving a patient's suicidal narrative (e.g., perceived burdensomeness, social defeat, thwarted belongingness), thereby mitigating the risk of subsequent episodes of the SCS. Treatment concludes after a patient has three consecutive sessions in which they have low suicide risk (i.e., no or manageable suicidal ideation, no self-injurious behaviors). Overall, a *meta*-analysis of nine studies indicated that CAMS results in significantly lower suicidal ideation, general distress, and hopelessness, and significantly higher treatment acceptability, than other commonly used interventions or treatment as usual [128]. Future research can assess the efficacy of CAMS in preventing future episodes of the SCS.

Cognitive Behavioral Therapy for Suicide Prevention. Several approaches to CBT for suicide prevention have been developed in the last two decades [22,122]. We focus here on CBT-SP, specifically, though all may have relevance. CBT-SP is a manualized cognitive-behavioral therapy that was originally designed to treat adolescents with recent (i.e., < 90 days) suicide attempts, although its applications extend to those who experience acute suicidal ideation in which precipitating factors can be identified [122]. The primary objectives of CBT-SP are to identify and reduce suicide risk factors, improve coping, and develop cognitive, behavioral, emotional, and interpersonal skills that aid in preventing suicidal behavior. CBT-SP is based on the principles of diathesis-stress models, like the NCM, in which trait vulnerabilities interact with stressors to trigger suicidal behaviors in individuals who possess vulnerabilities yet lack appropriate skills in regulating emotions, solving problems, tolerating distress, and/or addressing negative thoughts or beliefs (e.g., hopelessness, worthlessness). Treatment usually consists of approximately 10 to 12 sessions [122] and involve a chain analysis of the events leading up to a suicide attempt, developing a safety plan for future suicidal crises, psychoeducation, building reasons for living and hope, improving individual skills (e.g.,

behavioral activation, emotion regulation, distress tolerance, cognitive restructuring, goal setting), enhancing family support and communication, and various other strategies to mitigate future suicide risk. The suicidal narrative component of the NCM can be utilized to guide treatment planning and tailoring, as deficits in social support (i.e., thwarted belongingness), cognitive restructuring (i.e., perceived burdensomeness, social defeat, fear of humiliation), and goal-setting (i.e., goal disengagement and reorientation) can be identified and explicitly targeted through CBT-SP. Empirical support for the components of CBT-SP has accumulated, and these components are recommended as part of standard care with suicidal patients [18,122].

Attempted Suicide Short Intervention Program. ASSIP is a manualized brief psychotherapy for patients who recently attempted suicide [90], in recognition of the fact that previous suicide attempts are often cited as strong risk factors for future suicide attempts [16,103]. Consisting of only three to four sessions, ASSIP focuses on the development of an early therapeutic alliance, in conjunction with psychoeducation, a cognitive case conceptualization, safety planning, and continued long-term outreach contact via personalized letters over a two-year period (every three months in the first year, followed by every six months in the second year; [57]. Consistent with the principles of the NCM's suicidal narrative, the first session involves a narrative interview, during which patients provide biographical context to their recent suicide attempt. Then, in the following session, clinicians and patients collaboratively view a video recording of the first session to reactivate the patient's suicidal crisis in a safe environment, in order to extract relevant emotional, cognitive, physiological, and behavioral changes that occurred during the transition from psychological pain to suicidal actions. Psychoeducation is provided through a handout during this session. In the final session, patients' long-term goals, individual warning signs and triggers, and safety strategies are discussed, alongside the creation of a written safety plan. Evidence to date highlights the efficaciousness of ASSIP in reducing suicidal behaviors [57], its cost-effectiveness [97], and its adaptability to addressing substance use problems alongside suicidality in hospital settings [34].

Family Therapy. Involving family-focused approaches in psychosocial interventions of the suicidal narrative, as well as in suicide prevention efforts more broadly, may be incrementally useful [93]. Family approaches generally explicitly focus on altering interactions between or among family members while seeking to improve the holistic functioning of the family unit, as well as the individual members of the family [35]. Numerous models of systemic family therapy exist, including Minuchin's structural family therapy (which posits that problems result from inappropriate family structure and organization), Milan and post-Milan therapies (which was based on the idea that family systems need problems to maintain equilibrium), brief solution-focused therapy (which proposes that problems are maintained by the way in which difficulties are viewed and repetitive behaviors in attempts to solve them), and narrative therapy (which highlights the importance of the process of comparisons for learning in the presence of a family unit). Readers are directed to Cottrell and Boston [35] for a comprehensive overview of these family-focused approaches. Through the lens of the NCM, individuals struggling with a disrupted life narrative and/or suicide-related symptoms may report substantial problems in multiple aspects of family functioning, including perceptions of burdensomeness and thwarted belonging, difficulties disengaging from goals in the face of familial pressures, and familial conflict/stressors. Although evidence regarding specific components of the suicidal narrative has not yet been reported, results from a systematic review and *meta*-analysis indicated that family therapy was superior compared to other treatments in managing suicidal ideation among adolescents [130].

Stage 2: stress management

Stressful life events are hypothesized to play a central role in triggering more acute phases of the NCM in people with preexisting trait vulnerabilities [31,51,110], under review). Thus, addressing propensity to react strongly to stressful life events and/or negative emotions would likely be helpful in weakening the link between the inevitable stressors of life and activation of the suicidal narrative and/or SCS. Although not explicitly focused on suicidality, several existing, empirically-supported, psychosocial interventions are designed to address reactivity to stressors and stress management more generally, focusing on building skills in tolerating distress, mindfulness, and emotion regulation.

Dialectical Behavior Therapy. Dialectical Behavior Therapy (DBT; [78–79] is a cognitive-behavioral treatment designed to manage the symptoms of borderline personality disorder, including chronic suicidality and self-injury. Specifically, the biosocial model of borderline personality disorder proposes that it is primarily a disorder of self-dysregulation, particularly emotional and behavioral dysregulation, that emerges from a dynamic interaction between biological/trait vulnerabilities and certain dysfunctional environments [78]. Individuals with borderline personality disorder experience heightened emotional sensitivity along with an impaired ability to downregulate intense and painful emotions, such that stressful life events may exacerbate these symptoms and lead to suicidal behavior as a response to these unbearable emotional experiences [79]. Thus, DBT is an ideal mechanism through which to intervene on processes that exacerbate the impact of stressful experiences on baseline vulnerabilities. Of note, although we place DBT in this section, it has also accumulated empirical support in treating life-threatening behaviors (e.g., suicidality) and is applicable at more acute stages of this framework as well. Specifically, its focus on distress tolerance (e.g., the TIP skill) can reduce vulnerability to the SCS. Nonetheless, the skill-building format of DBT requires cognitive stability at time of intervention to learn skills associated with managing emotional and behavioral dysregulation. Hence, we feel DBT may be best utilized at the stress management stage of the NCM.

DBT consists of multiple components, including weekly individual therapy, skills training in a group setting, and phone-based coaching between therapy sessions. Four modules encompass DBT: core mindfulness (i.e., focusing on the present moment, both internally and externally, in a non-judgmental manner), interpersonal effectiveness (i.e., communicating more effectively and dealing with challenging people, while balancing desires to maintain a relationship and one's self-respect), emotion regulation (i.e., identify emotions, change unwanted emotions, and build more positive emotions), and distress tolerance (i.e., accept oneself and current situation through both crisis management and radical acceptance). As a whole, several formats of DBT, especially those that include skills training [80], have demonstrated efficacy in reducing non-suicidal and suicidal behaviors [41,75], possibly through reductions in emergency department visits [36]. Overall, the myriad ways in which DBT can target suicide risk—through managing suicidal crises, addressing the suicidal narrative, and reducing vulnerability to stressful life events (see [40], for examples)—makes it an ideal intervention for the management of suicide risk and an excellent match for the tenets of the NCM.

Mindfulness-Based Stress Reduction. Other upstream interventions addressing cognitive-affective processes underlying responses to stressors may also be effective in mitigating risk for triggering the NCM. Mindfulness-based stress reduction (MBSR; [70] is a structured program of mindfulness training that emphasizes both focused attention (i.e., object-based selective attention in the present moment) and open monitoring (i.e., settling attention into observation or monitoring of the present moment without any explicit focus on an object or any given experience)[83]. Altogether, MBSR aims to enhance one's ability to observe their immediate experience, including the transient nature of thoughts, emotions, memories, images, and physical sensations. Coinciding with the goal of influencing responses to stressful life events within the framework of the NCM, MBSR has been shown to diminish emotional reactivity and ruminative thinking in response to transient thoughts and sensations [99], enhance emotional and behavioral self-regulation [55,84], modify distorted views of oneself [56], and

subsequently reduce symptoms of stress, depression, and anxiety [27,48,118].

Emotion Regulation Therapy. Emotion Regulation Therapy (ERT) is a psychosocial intervention designed to address mechanisms underlying distress-based disorders, including self-referential thinking (e.g., rumination, worry, self-criticism), behavioral responses (e.g., avoidance, reassurance-seeking), and contextual learning consequences [87]. It consists of 16 manualized weekly sessions that focus first on the cultivation of mindful emotion regulation skills through the promotion of intentional and flexible responses to intense emotional experiences. Activities in this phase include psychoeducation, self-monitoring of one's emotional experiences, gaining competency in mindful emotion regulation skills, and practicing actions opposite to their current feelings and urges to restore emotional equilibrium. Then, in the next phase of treatment, behavioral proactivity through identification of one's values and taking actions reflective of these values and their meaning is emphasized [100]. This phase involves applying one's emotion regulation skills to activities that reflect a meaningful and rewarding life, imaginal exposures that focus on specific actions, addressing perceiving obstacles to action, and practicing valued actions between sessions. Preliminary evidence supports the efficacy of ERT in reducing symptoms of anxiety, worry, rumination, depression, and functional impairments, and increasing patients' quality of life [89,88].

Stage 1: long-term trait vulnerabilities

After acute (i.e., SCS) and subacute (i.e., suicidal narrative) risk for suicide has been managed, and patients have developed coping skills for responding to stressful life events, psychotherapy and pharmacology to address long-term risk factors and trait vulnerabilities underlying baseline risk for suicide may be warranted. Given the myriad factors that may encompass long-term risk factors for suicide, and since many of these factors are not malleable (e.g., sociodemographic characteristics), we will not provide a comprehensive overview of all applicable interventions in this section. Rather, we direct the reader to consider interventions that are empirically-supported for each particular risk factor. For instance, trauma resulting in symptoms of posttraumatic stress may be treated through gold standard psychosocial interventions: cognitive processing therapy [101,102] and prolonged exposure [49,50]. Problematic alcohol and/or substance use may be addressed through a variety of psychosocial interventions, such as contingency management [39], motivational interviewing/enhancement [43], and other cognitive-behavioral approaches (see [45], for *meta*-analysis). Perfectionism and other maladaptive cognitive processes may be addressed through a variety of therapeutic approaches (e.g., cognitive-behavioral therapies). Tendencies to engage in rumination and/or other forms of repetitive negative thinking are treatable through rumination-focused cognitive-behavioral therapies as well as mindfulness-based approaches [118,131]. Insecure attachment and maladaptive interpersonal schemas have been effectively treated with depth-oriented psychotherapies, such as psychodynamic, mentalization-based, and schema focused therapy (see [29], for review). Altogether, clinicians should assess the spectrum of long-term risk factors for suicide collaboratively with patients and address those that are most distressing, impairing, and/or malleable.

Implications for future research and clinical practice

Together, the NCM provides a comprehensive sequential framework for understanding, assessing, and intervening upon suicide risk across chronic, subacute, and acute stages featured in the four stages of the model. Implementation of the full framework into clinical practice in a variety of settings (e.g., hospitals, community mental health centers, Veterans Affairs medical centers) may be a fruitful avenue of future work, given the potential to measurably impact rates of suicidal thoughts and behaviors. Given that most work on the NCM to date has focused on hospital and psychiatric patient settings, future work should assess the generalizability and clinical utility of the NCM staged treatment model across settings and unique populations (e.g., across the lifespan, among racial/ethnic/sexual/gender minoritized individuals, among those with military service, among those with chronic illness, and cross-culturally). Similarly, the ease of implementation of the NCM as a treatment framework across disparate settings may differ; future work may benefit from assessing the feasibility, acceptability, and appropriateness of assessment and intervention components of the NCM in a variety of clinical settings (e.g., hospitals, inpatient units, community mental health centers).

First and foremost, however, randomized clinical trials are needed to establish optimal pharmacological or neuromodulation treatment for the SCS. These should include single-drug or neuromodulation trials targeting individual categories of symptoms included in SCS criteria. For example, benzodiazpines, PAMs of the GABA A receptor, and sedating low-potency first and second generation antipsychotics could be studied for treatment of extreme anxiety and disturbances in arousal, as well as emotional pain. Third generation antipsychotics could be tested to treat the loss of cognitive control. Long-acting opiates could be evaluated for their modulation of emotional pain and entrapment, not necessarily as a solution but to determine the role opiate systems may play in this syndrome. Combination treatments targeting all or most symptoms of the SCS also need to be studied so that both optimal combinations and doses can be found. In a similar vein, the new SCS-focused psychotherapy intervention developed by Bloch-Elkouby and colleagues [13,14] needs to be investigated empirically using a clinical trial. Furthermore, future research will need to investigate whether pharmacological and SCS-focused psychotherapy interventions are more effective when used alone or in combination. One avenue for testing this hypothesis may be through a crossover trial, in which in one arm, medications for the SCS are administered alone, whereas in the other arm, it is used in conjunction with SCS- focused psychotherapy.

Second, as alluded to previously, the sequential nature of intervention, spanning from psychopharmacological treatment of SCS in Stage 4 (with or without additive psychotherapy) to psychosocial treatment of subacute risk in Stage 3 (suicidal narrative), stressful life events in Stage 2, and long-term risk factors in Stage 1, has not yet been established. Future work may also be beneficial in expanding the NCM to differentiate risk for non-fatal suicide attempts versus death by suicide.

Finally, it may be beneficial to examine whether the NCM staged-treatment framework may be enhanced by the use of cutting-edge treatment delivery methods. For instance, much of suicide research has benefited from the examination of real-time risk for suicidal thoughts and behaviors utilizing intensive longitudinal methods, like ecological momentary assessment [73]. Intervening in real time may be similarly useful. In particular, the development and implementation of strategies that target subacute and acute risk (i.e., the suicidal narrative and SCS) as they occur in real life, including just-in-time [95] or ecological momentary interventions [2], may mitigate risk of suicidal behavior occurring in those moments. Preliminary evidence examining a DBT coaching mobile application has indicated that these types of interventions may be efficacious in reducing distress and self-injurious behaviors [104–105]. However, few suicide-specific just-in-time or real-time interventions have been developed or evaluated, highlighting an area in need of future work. Altogether, should the NCM staged treatment framework be used to guide innovations in intervention research, it may have impactful results on clinical practice and on patient outcomes.

Conclusions

All in all, empirically-supported frameworks are essential to the understanding, assessment, and treatment of suicidal thoughts, urges, and behaviors. The NCM provides a comprehensive treatment framework through which suicidal behavior can be understood and prevented,

with specific guidance and applicable interventions at each distinct stage of the model. Utilization of this framework, as well as future research and clinical efforts to further refine the NCM, has the potential to save lives and reduce rates of death by suicide.

CRediT authorship contribution statement

Megan L. Rogers: Writing – review & editing, Writing – original draft, Visualization, Conceptualization. **Sarah Bloch-Elkouby:** Writing – review & editing, Writing – original draft, Conceptualization. **Inna Goncearenco:** Writing – review & editing, Writing – original draft. **Lisa J. Cohen:** Writing – review & editing, Conceptualization. **Charles B. Nemeroff:** Writing – review & editing, Conceptualization. **Igor Galynker:** Writing – review & editing, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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