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Suicide Crisis Syndrome: A systematic review

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Abstract

Background: The objective of this systematic review is to describe the scientific evidence for the Suicide Crisis Syndrome (SCS), a presuicidal cognitive and affective state consisting of five symptomatic dimensions: entrapment, affective disturbance, loss of cognitive control, hyperarousal, and social withdrawal. The aim of this article is to summarize the emerging literature on the SCS and to assess the extent to which a uniform syndrome can be assumed.

Methods: A systematic literature search was conducted in three different databases (PubMed, PsycInfo, and Google Scholar) using the search terms "Suicide Crisis Inventory," "Suicide Crisis Syndrome," "Narrative Crisis Model of Suicide," and "Suicide Trigger State."

Results: In total, 37 articles from 2010 to 2022 were identified by search criteria. Twenty-one articles published between 2017 and 2022 were included in the systematic review. All but three studies were conducted in the United States and examined clinical samples of adult high-risk psychiatric in- and outpatients. Sample sizes ranged from $N = 170$ to 4846. The findings confirm the unidimensional structure of the proposed disorder and support the predictive validity for short-term suicidal behavior above and beyond suicidal ideation.

Conclusion: Despite the promising predictive validity of the SCS, a precise prediction of future suicidal behavior remains difficult.

KEYWORDS
narrative-crisis model of suicide, risk assessment, suicide, Suicide Crisis Syndrome, suicide risk, suicide trigger state

INTRODUCTION

Suicide is one of the leading causes of death throughout the lifespan; annually around 703,000 individuals worldwide are estimated to die by suicide (WHO, 2021). Scientists and clinical practitioners strive to prevent and understand the mechanisms of suicide, however, recent meta-analyses show that the prediction accuracy of

suicide is alarmingly poor (Franklin et al., 2017; Ribeiro et al., 2019; Woodford et al., 2019).

Considering the poor predictive performance of traditional suicide risk factors, several authors have pointed to the importance of warning signs for acute suicidality instead (Ribeiro et al., 2019; Rudd et al., 2006). To underline the difference between long-term risk factors and acute warning signs, Galynker (2017, p. 3) refers to a

cardiovascular disease analogy by comparing acute warning signs of a heart attack to lifetime risk factors:

> [...] cardiovascular long-term risk factors include hypertension, obesity, diabetes, lack of exercise, and high cholesterol (Hajar, 2016). These factors predict who may have a myocardial infarction during the next decades but not tomorrow. An imminent heart attack is predicted by warning signs that reflect lack of myocardial perfusion or ischemia: crushing chest pain, shortness of breath, and diaphoresis. [...] To continue the cardiovascular disease analogy, a history of mental illness and suicide attempt, depression, hopelessness, helplessness, and suicidal ideation are associated with the lifetime risk for suicidal behavior. The suicide crisis syndrome (SCS) is similar to myocardial ischemia in that warning signs of suicide resemble the signs and symptoms of unstable angina and signify short-term suicide risk.

Hendin et al. (2007) were the first to define an intense, negative affective state in depressed patients as a "suicide crisis." Rudd et al. (2006) proposed the following warning signs of imminent suicide: hopelessness, rage, feeling trapped, social withdrawal, agitation, and anxiety. Other studies identified similar signs and symptoms in the days before a suicidal act, such as anxiety and agitation (Busch et al., 2003), suicidal ideation (Ribeiro et al., 2019), psychosis (e.g., Britton et al., 2012), and severely depressed mood (e.g., Fredriksen et al., 2022). Based on this work, Galynker (2017) proposed the "Suicide Crisis Syndrome (SCS)" described as a negative affective state prior to a suicide attempt, which is considered a warning sign for imminent suicide risk. A similar suicide-specific diagnostic entity termed Acute Suicidal Affective Disturbance (ASAD), characterized by a drastic increase in suicidal intent has been proposed by another research group (Tucker et al., 2016). Both syndromes are supposed to precede suicidal behavior and resemble each other in their symptom domains (Joiner et al., 2018; Rogers, Jeon, et al., 2023). While a recent systematic review supports the evidence with respect to the ASAD syndrome (Claus & Teismann, 2021), the aim of the current article was to summarize the literature on SCS and assess its unidimensional structure as well as its differentiation from other disorders. The definition—as well as the assessment—of the SCS has been revised various times. The following section will first outline the assessment of the SCS over time and then present its current definition and operationalization.

In early studies, the SCS syndrome was labeled "suicide trigger state" (STS) consisting of three components (frantic hopelessness, ruminative flooding, and panic dissociation). To measure the hypothesized construct of a suicide trigger state preceding a suicide attempt, Galynker and his team developed a self-report instrument, the Suicide Trigger Scale (STS-2), derived from a first unpublished questionnaire (STS-1, see Yaseen et al., 2010) and followed by a third, revised version of the questionnaire (STS-3; Yaseen et al., 2012). A shortened version, the Suicide Trigger Scale Short Form (STS-SF; Hawes et al., 2017), was created with eight items including the factors of entrapment and ruminative flooding.

After renaming the syndrome as well as through continuous adaption and revision of the Suicide Trigger Scales (Schuck et al., 2019), Galynker and his co-authors eventually developed the Suicide Crisis Inventory (SCI; Galynker et al., 2017). This instrument comprises five dimensions (1) Entrapment, (2) Panic/dissociation, (3) Ruminative Flooding, (4) Emotional Pain, and (5) Fear of Dying. Just recently, a revised Suicide Crisis Inventory-2 (SCI-2; Bloch-Elkouby et al., 2021), with a selection of 34 items of the original SCI and 27 newly added items, of which 25 were selected from validated scales and two were generated by the authors, was introduced. In addition, a brief SCS-Checklist (SCS-C; Bafna et al., 2022) underwent pilot testing. An overview of the various instruments is shown in Table 1.

The current version of the SCS criteria contains five dimensions (see Table 2): Entrapment, Affective Disturbance, Loss of Cognitive Control, Hyperarousal, and Social Withdrawal. To assess the proposed criteria, the revised Suicide Crisis Inventory-2 (SCI-2) is used (Bloch-Elkouby et al., 2021). The standard threshold examined by the authors for each symptom to meet the diagnostic criteria of the Suicide Crisis Inventory (SCI) is presented in Table 2. Of note, the SCS is currently measured based on a specific response pattern in the SCI-2; yet, a proxy checklist has been published (Bafna et al., 2022) and an abbreviated Suicide Crisis Syndrome Checklist (A-SCS-C; Karsen et al., 2023) is currently under investigation.

In the following, the criteria of the SCS are described in more detail (see Schuck et al., 2019 regarding the empirical data on the different constructs):

> Criterion A: *Entrapment* is considered to be the central affective construct of the SCS (cf. O'Connor & Kirtley, 2018) and is defined as a desire to escape from an unbearable situation, tied with the perception that all escape routes are blocked (Gilbert & Allan, 1998).
> Criterion B: *Affective Disturbance* (B1) complements the affective SCS component (Bloch-Elkouby et al., 2021).

TABLE 1 Measures for the assessment of the Suicide Crisis Syndrome.

Instrument	Authors	Year	Dimensions	Items
STS-2	Yaseen et al.	2010	Two-factor solution: (1) Ruminative flooding and near-psychotic somatization (2) Frantic hopelessness	39
STS-3	Yaseen et al. Cohen et al.	2012; 2014 2017/2018	Three-factor solution: (1) Frantic hopelessness (2) Ruminative flooding, and (3) Near-psychotic somatization	42
STS-SF	Hawes et al. Høyen et al.	2017 2021	Primarily entrapment and ruminative flooding	8
SCI	Galynker et al.	2017	Five- or one-factor solution: (1) Entrapment (2) Panic/dissociation (3) Ruminative flooding (4) Emotional pain (5) Fear of dying	49[a]
SCI-SF	Calati et al.	2020	Primarily entrapment and ruminative flooding	8
SCI-2	Bloch-Elkouby et al.	2021	Five-, three-, or one-factor solution consisting of: (1) Entrapment (2) Affective disturbance (3) Loss of cognitive control (4) Hyperarousal (5) Social withdrawal	61
SCS-C	Bafna et al.	2022	Five-factor solution (see above)	20

[a]In three studies, a 50-item version of the SCI was used (Cohen et al., 2019, 2021; Otte et al., 2020).

This dimension is divided into four distinct symptom clusters: *emotional pain*, referring to psychache, that is, intense feelings of hurt (Galynker, 2017); *rapid spikes of negative emotions*, *extreme anxiety*, defined as a panic-like frantic worry associated with somatic symptoms; as well as *acute anhedonia*, that is, the loss of interest and pleasure. Both emotional pain and extreme anxiety are based on the previous SCS formulation, while rapid spikes of negative emotions and acute anhedonia are newly added symptoms to the SCS (Bloch-Elkouby et al., 2021).

Loss of Cognitive Control (B2) refers to the cognitive component of the SCS (Galynker, 2017). This dimension involves the following four clusters of symptoms: *rumination*, that is, persistent thinking about one's own distress; *cognitive rigidity*, that is, being stuck in negative thought patterns; *ruminative flooding*, referring to an intense pressure in the head caused by uncontrollable negative thoughts; and *failed thought suppression*, that is, failed attempts to eliminate unpleasant thoughts.

Hyperarousal (B3) extends the SCS formulation as a new dimension and describes a somatic overexcitation including four types of symptoms: *agitation*, characterized as arousal on a physical or mental level; *hypervigilance*, an intense sensory awareness and expectation of

danger; *irritability*, the proneness to anger or annoyance; and *insomnia*, the disturbance of falling and/or remaining asleep, which is the only symptom adopted from the previous SCS formulation (Bloch-Elkouby et al., 2021).

Social Withdrawal (B4), another new SCS dimension, focuses on social aspects like feeling isolated and avoiding interaction with others (Bloch-Elkouby et al., 2021).

In a larger context, the Suicide Crisis Syndrome is considered a part of a multivariate, time-sensitive model of the progression to suicide, the so-called Narrative-Crisis Model of Suicide (Galynker, 2017). The model aims to describe the process leading from chronic risk factors to acute suicidality. The model differentiates between trait vulnerability, the suicidal narrative (SN), and the suicide crisis syndrome (SCS). Trait vulnerability describes proneness to suicidality by factors like perfectionism, impulsivity, or hopelessness. The Suicidal Narrative, a cognitive-affective reaction to stressful life events, includes the components of unrealistic life goals, entitlement to happiness, failure to redirect to more realistic goals, humiliating defeat, perceived burdensomeness, and thwarted belongingness, as well as the perception of no future (Cohen et al., 2018; Galynker, 2017). When the cognitive construct of the Suicidal Narrative is activated, it is assumed to trigger the acute, presuicidal affective state of the SCS, which

TABLE 2 SCS criteria and their operationalization using items from the Suicide Crisis Inventory and various other questionnaires (Yaseen et al., 2019; see also Bafna et al., 2022).

Formulation of Suicide Crisis Syndrome (SCS) criteria	
	Operationalization
Criterion A	
(A) Entrapment	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 SCI: scoring ≥39 points on the entrapment subscale
Criterion B	
(B1) Affective disturbance	*Manifested by at least one of the four symptoms*: (1) Intense feelings of emotional pain (e.g., "sense of inner pain that was too much to bear") SCI: scoring ≥12 points on the emotional pain subscale (2) Rapid spikes of negative emotions (e.g., feeling "unusually intense or deep negative feelings or mood swings towards someone else") SCI: scoring ≥4 points on the rapid spikes of negative emotions subscale (3) Extreme anxiety (e.g., "Did you have strange sensations in your body or on your skin?") SCI: ≥3 points on item 1 (nervousness and shakiness) of the Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983) (4) Acute anhedonia (e.g. "Did you feel dissatisfied or bored with everything?") SCI: scoring ≥3 points on the combined score of item 4 (loss of pleasure) and item 12 (loss of interest) of the Beck Depression Inventory (BDI; Beck & Steer, 1987)
(B2) Loss of cognitive control	*Manifested by at least one of the following*: (1) Rumination (e.g., "Ideas kept turning over and over in your mind") SCI: scoring ≥2 points on item 34 of the SCI (2) Cognitive rigidity (e.g., "Did you feel your views were very consistent over time?") SCI: threshold not indicated (item newly added to the SCI-2) (3) Ruminative flooding (e.g., feeling "pressure in your head from thinking too much") SCI: scoring ≥14 points on the 7-item subscale (4) Failed thought suppression (e.g., "Did you want troubling thoughts to go away but they wouldn't?") SCI: scoring ≥3 points on item 39 (wanted troubling thoughts to go away) or 40 (felt powerless to stop upsetting thoughts) of SCI
(B3) Hyperarousal	*Manifested by at least one of the following*: (1) Feelings of agitation (e.g. "Did you feel so restless you could not sit still?") SCI: scoring ≥4 points on either item 38 (feeling "tensed or keyed up") or item 49 (feeling "restless you could not sit still") of the BSI. (2) Hypervigilance (e.g., "Did you feel you were constantly watching for signs of trouble?") SCI: scoring ≥4 points on item 10 (feeling "that most people could not be trusted") of the BSI. (3) Irritability (e.g "Did you feel easily annoyed or irritated?") SCI: scoring ≥4 points on item 6 (feeling "easily annoyed or irritated") of the BSI. (4) Insomnia (e.g., "Did you wake up from sleep tired and not refreshed?") SCI: scoring ≥3 points on either item 1 (waking up "tired and not refreshed") or item 15 ("trouble fallings asleep because of uncontrollable thoughts") of the SCI
(B4) Social withdrawal	*Manifested by at least one of the following*: Avoidance of social interactions and feelings of isolation (1) Withdrawal from or reduction in scope of social activity SCI-2: scoring <2 points on a single item of social connectedness (feeling "isolated from others") (2) Evasive communication with close others SCI-2: scoring unclear (evading communication "with people who care about you")

increases the risk of short-term suicidal behavior (Cohen et al., 2019). The Narrative-Crisis Model of Suicide is illustrated in Figure 1.

The research group of Galynker assumed the SCS to be a unidimensional construct. Although some data supporting this assumption have already been published, a comprehensive analysis is still pending. The determination of diagnostic validity in mental disorders requires five steps according to Robins and Guze (1970): (1) clinical description, (2) laboratory studies, (3) exclusion of other disorders, (4) follow-up studies, and (5) family studies. Phase 1 represents the description of the
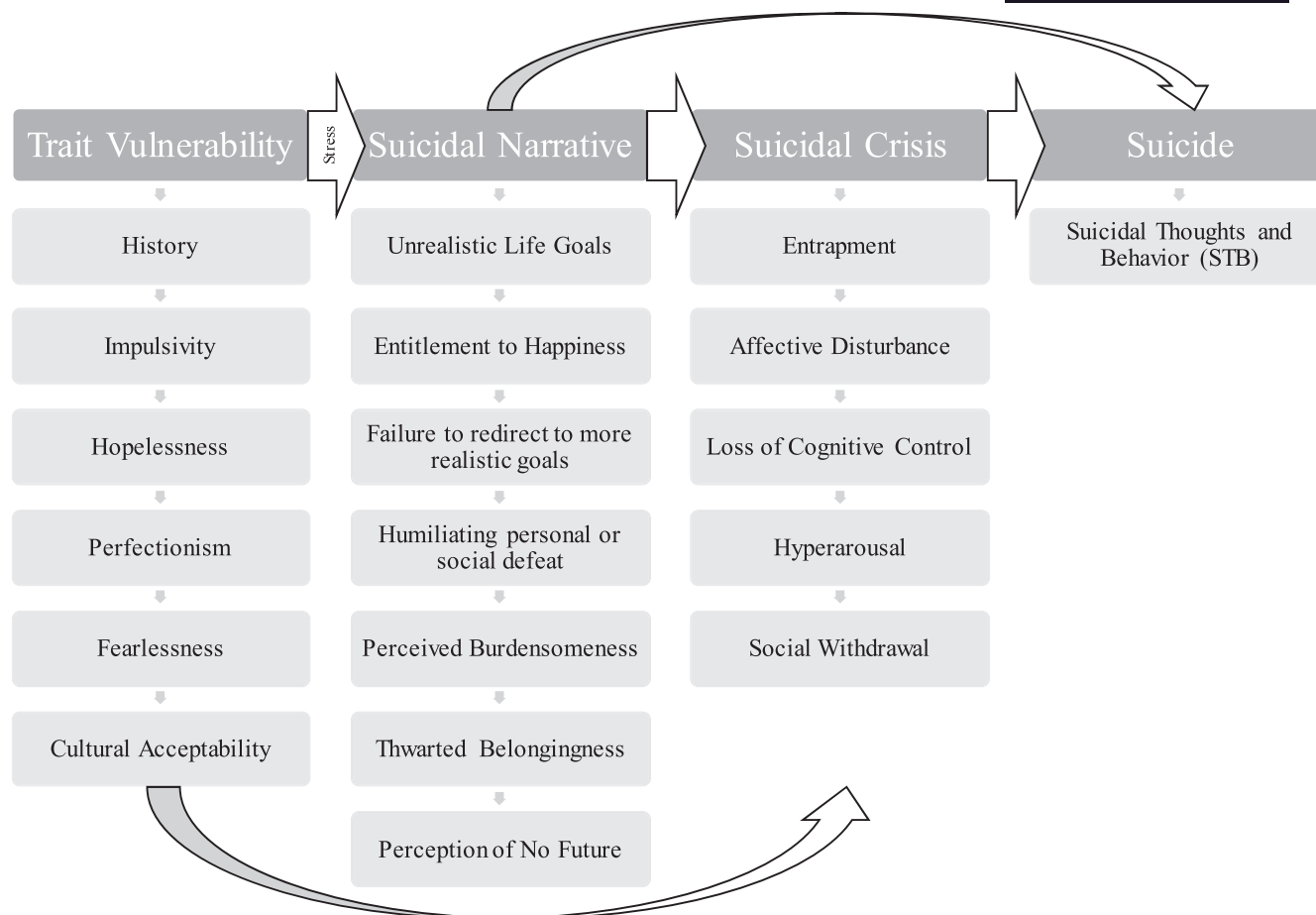
FIGURE 1 The Narrative Crisis Model of Suicide. *Note*: Adapted from *The Suicidal Crisis*, by Galynker (2017) with newly formulated suicide crisis criteria (Bloch-Elkouby et al., 2021).

symptomatic *clinical picture* of the respective disorder, in this case of the SCS. Phase 2 focuses on findings from *laboratory studies* (chemical, physiological, radiological, and anatomical), which, taken together, are intended to confirm the uniform nature of the disorder. Phase 3 aims to differentiate the described disorder from other disorders. For example, the SCS should be different from posttraumatic stress disorder. In phase 4, *follow-up studies* examine the longitudinal course of the postulated disorder. In this context, the SCS should be shown to precede suicidal behavior (Bloch-Elkouby et al., 2021; Yaseen et al., 2014, 2019). Finally, *family studies* assess whether a disorder occurs more frequently in close relatives, which would point to a hereditary component of the disorder.

Given the importance of describing an acute suicidal syndrome, the aim of the present article was to summarize the literature on the SCS (1) to assess the extent to which a discrete syndrome has been demonstrated and (2) to elaborate and evaluate clinical implications regarding the utility and practicability of a suicide-specific

diagnosis for the assessment and treatment of suicidal individuals.

METHODS

Inclusion and exclusion criteria

Studies were included if they met the following inclusion criteria: (1) use of the Suicide Crisis Inventory (SCI, SCI-SF, SCI-2); (2) measurement of suicidal thoughts and behavior (STB) in association with SCS; (3) original study published in a peer-reviewed journal; and (4) the study is written in English. Studies were excluded if they met the following exclusion criteria: (1) other constructs (e.g., ASAD) were assessed instead; (2) only single subscales of the STS or the SCI were used (3); SCS was not associated with suicidal outcome measures; (4) the article describes a review, practice guideline, pilot study, case report, commentary, editorial, letter, or a study protocol.

Data sources and search strategies

An initial systematic computerized search was conducted in June 2022, a final search took place in December 2022 in three different databases: PubMed, PsycInfo, and Google Scholar. The search terms for the study were "suicide crisis syndrome," "suicide crisis inventory," "narrative crisis model of suicide," and "suicide trigger state."[1] Furthermore, the bibliographies of relevant studies were searched for additional results. There was no restriction on publications to a specific time period. The search included all studies published up to December 2022. Additional papers published in 2023 were not included in the review but are addressed in the Discussion section. Identified studies were all uploaded to Citavi and listed in an excel sheet with all duplicates removed. Studies were selected in a two-step process: First, studies were screened based on title and abstract, and second, included studies were screened based on full text (see Figure 2 for more details).

RESULTS

A total of 37 articles from 2010 to 2022 were identified by search criteria and considered in detail. Sixteen of these articles were excluded from further analysis because of the following reasons: eight studies used the Suicide Trigger Scale as an instrument (Cohen et al., 2018; Hawes et al., 2017; Høyen et al., 2021, 2022; Yaseen et al., 2010, 2012, 2014, 2016), three studies only evaluated single dimensions of the SCS (Li et al., 2017; Rogers, Cao, et al., 2021; Yaseen et al., 2017), three studies did not assess STB as an outcome (Bloch-Elkouby, Gorman, Schuck, et al., 2020; Molaie et al., 2019; Ying et al., 2021), and two studies were not written in English (Chang et al., 2022; Vespa et al., 2021). Twenty-one articles were included in the systematic review (see Table 3). Three pairs of studies refer to the same sample (Galynker et al., 2017; Li et al., 2018; McMullen et al., 2021; Parghi et al., 2021; Rogers, Vespa, et al., 2021; Rogers, Bloch-Elkouby, &
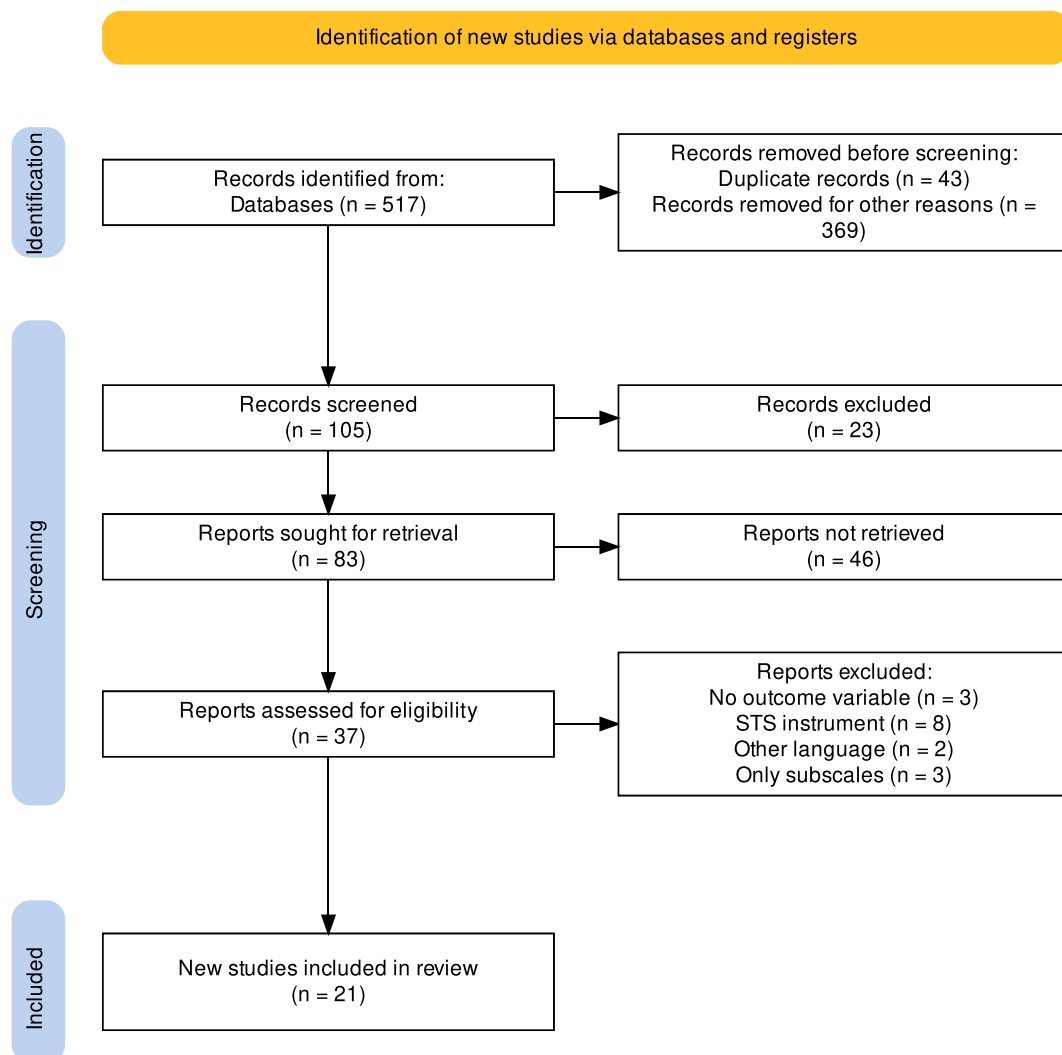

FIGURE 2 PRISMA flow chart. *Note*: Systematic literature search conducted in three different databases.

TABLE 3 Overview of included studies.

Authors	Year	Instrument	Design	N	Sample	Primary outcome focus	Outcome measure	Main results	Comment
Bafna, Rogers, Galynker	2022	SCI SCI-SF Proxy-SCS SCS-C	Longitudinal (4–8 weeks)	903	Psychiatric inpatients and outpatients	Predictive validity and symptom configuration of proposed diagnostic criteria for SCS	C-SSRS	Significant prediction of follow-up SA by five-symptom proxy-SCS configuration, above and beyond intake SI, lifetime SA; strong model fit for one- and five-factor solution of proxy-SCS (CFA)	Sample taken from a larger prospective study (2016–2019); replication study of Yaseen et al. (2019); 32.9% lost to follow-up
Barzilay, Assounga, Veras, Beaubian, Bloch-Elkouby, Galynker	2020	SCI	Longitudinal (1 month)	867	Psychiatric inpatients and outpatient	Consistency and validity of the Suicide Crisis Inventory (SCI)	C-SSRS; BSI	Internal consistency ($\alpha=0.977$); Convergent and discriminant validity (depression, anxiety); predictive of near-term SA with 80% sensitivity; 63.2% specificity ($OR=8.62$, $p=0.000$); good model fit for one- and five-factor solution	Same sample as Calati et al. (2020); 31.8% lost to follow up
Bloch-Elkouby Gorman, Lloveras, Wilkerson, Schuck, Barzilay, Calati, Schnur, Galynker	2020a	SCI	Longitudinal (1 month)	223	Psychiatric inpatients	Assessment of stage components of the Narrative Crisis Model	C-SSRS	Internal consistency of subscales only; predictive validity of prospective SI and SA; one-factor solution (PCA)	Same sample as Hawes et al. (2017); 46% drop-out rate at follow-up
Bloch-Elkouby Barzilay, Gorman, Lawrence, Rogers, Richards, Cohen, Johnson, Galynker	2021	SCI-2	Longitudinal (1 month)	421	Psychiatric inpatients and outpatients	Revision of the Suicide Crisis Inventory (SCI)	C-SSRS; RSQ; GSI (BSI)	Internal consistency: $\alpha=0.971$; convergent, discriminant, and criterion validity; sign. predictive validity for prospective SA; good model fit for one-, three- and five-factor solution (CFA)	Same sample as Hawes et al. (2017); 46.6% dropout at follow-up

TABLE 3 (Continued)

Authors	Year	Instrument	Design	N	Sample	Primary outcome focus	Outcome measure	Main results	Comment
Calati, Cohen, Schuck, Levy, Bloch-Elkouby, Barzilay, Rosenfield Galynker	2020	SCI-SF MARIS	Cross-sectional	618	Psychiatric inpatients and outpatients and their clinicians	Validation of the multi-informant Modular Assessment of Risk for Imminent Suicide (MARIS)	C-SSRS; BSI	Internal consistency: $\alpha = 0.87$; correlation with lifetime STB/SB and past-month STB (all $p \leq 0.003$)	Sample taken from a larger prospective study; see Hawes et al. (2017) using STS-SF; Inpatients were evaluated at discharge, outpatients at intake
Cohen, Gorman, Briggs Jeon Ginsburg Galynker	2019	SCI SNI	Cross-sectional	289	Psychiatric outpatients	Validation of the suicidal narrative construct; SCI total score as mediation variable	C-SSRS	Sig. positive correlation between SCI total score and past-month suicidal phenomena ($r = 0.37$, $p < 0.001$), and past STB ($r = 0.18$, $p < 0.05$); Partial mediation effect for past-month STB ($p < 0.001$)	
Cohen, Mokhtar, Richards, Hernandez, Bloch-Elkouby, Galynker	2021	SCI SNI	Longitudinal (1–2 months)	732	Psychiatric inpatients and outpatients	Validation of the Narrative Crisis Model of Suicide; SCI as a serial mediator	C-SSRS	Internal consistency: $\alpha = 0.978$; significant correlations between SCI total scores and past-month and prospective STB ($p < 0.001$)	Sample taken from Calati et al. (2020); 28.4% dropout at follow-up
Flint, Cohen, Nath, Habib, Guo, Galynker, Calati	2021	SCI	Longitudinal (1 month)	459	Psychiatric outpatients	Moderating effect of personality traits	C-SSRS	Internal consistency: $\alpha = 0.978$; predictive validity of SB at 1-month follow-up ($p = 0.002$); all Big Five personality traits moderated relationship between SCI and SB at 1-month follow-up	Sample taken from larger MARIS study (2016–2020); 31.7% dropout at follow-up

TABLE 3 (Continued)

Authors	Year	Instrument	Design	N	Sample	Primary outcome focus	Outcome measure	Main results	Comment
Galynker, Yaseen, Cohen, Benhamou, Hawes, Briggs	2017	SCI	Longitudinal (4–8 weeks)	201	Psychiatric inpatients	Validation of the Suicide Crisis Inventory (SCI)	C-SSRS	Internal consistency: $\alpha = 0.970$; predictive validity of short-term SB with 64% sensitivity, 88% specificity (OR=13, $P = 0.003$); incremental predictive validity over anxiety and depression; good model fit for five-factor solution (EFA)	32% dropout rate at follow-up
Li, Yaseen, Kim, Briggs, Duffy, Frechette-Hagan, Cohen, Galynker	2018	SCI	Cross-sectional	200	High-risk psychiatric inpatients	Entrapment as a mediator of suicide crisis	SI (BSS)	Good internal consistency for each subscale ($0.796 < \alpha < 0.946$). Significant, unidirectional mediation effects of entrapment	Same sample as Galynker et al. (2017)
McMullen, Parghi, Rogers, Yao, Bloch-Elkouby, Galynker	2021	SCI	Longitudinal (1 month)	591	High-risk psychiatric inpatients	Predictive validity of the Suicide Crisis Syndrome (SCS) using machine learning (ML) analysis	C-SSRS	Combination of current SI and SCI showed slightly higher predictive validity for near-term SB than SCI alone ($p < 0.05$)	Same sample as Parghi et al. (2021); machine learning approach
Menon, Bafna, Rogers, Richards, Galynker	2022	SCI-2	Cross-sectional	302	Indian adults	Factor structure and validity of the Revised Suicide Crisis Inventory (SCI-2)	C-SSRS	Internal consistency: $\alpha = 0.98$ good convergent validity; five-factor model demonstrated superior model fit (CFA)	
Otte et al. Lutz, Streb, Cohen, Galynker, Dudeck, Brüsselmann	2020	SCI-G	Cross-sectional	255	German forensic inpatients	Validation of the German version of the Suicide Crisis Inventory (SCI-G)	Number of prior suicide attempts	Good to excellent values for reliability ($0.832 \geq \alpha \geq 0.950$); construct validity demonstrated; five-factor structure could not be replicated	

TABLE 3 (Continued)

Authors	Year	Instrument	Design	N	Sample	Primary outcome focus	Outcome measure	Main results	Comment
Parghi, Chennapragada, Barzilay, Newkirk, Ahmedani, Lok, Galynker	2021	SCI	Longitudinal (1 month)	591	High-risk psychiatric inpatients	Predictive ability of the SCI for near-term suicidal behavior using machine learning (ML)	C-SSRS	Enhanced bootstrap approach predicted near-term SB best with random forest (98.0% precision; 33.9% recall, 71.0% AUPRC, and 87.8% AUROC)	Same sample as McMullen et al. (2021); machine learning analysis
Pia, Galynker, Schuck, Sinclair, Ying, Calati	2020	SCI	Longitudinal (1 month)	336	Psychiatric outpatient participants	Association between perfectionism, fear of humiliation, SCS, and prospective near-term STB	C-SSRS	Significant indirect effect of perfectionism on STB, through serial mediation by fear of humiliation and the SCS ($p = 0.007$, 95% CI [0.003, 0.013]). Positive correlation between SCI and STB at follow-up ($r = 0.30$, $p < 0.001$)	Sample taken from larger MARIS study (see Flint et al., 2021)
Rogers, Vespa, Bloch-Elkouby, Galynker	2021b	SCI-SF MARIS	Longitudinal (1 month)	1039	Psychiatric inpatients and outpatients and their clinicians	Validation of multi-informant Modular Assessment of Risk for Imminent Suicide (MARIS)	C-SSRS	Internal consistency: $\alpha = 0.87$; MARIS total scores and Module 1 (SCI) predicted STB at 1-month follow-up	Same sample as Rogers, Bloch-Elkouby, and Galynker (2022); 35.5% dropout rate at follow-up
Rogers, Bafna, Galynker	2022a	SCI-2	Longitudinal (1 month)	382	Psychiatric inpatients and outpatients	Comparative clinical utility of screening for SCS vs. SI in relation to SI and SA at 1-month follow-up	C-SSRS	Internal consistency: $\alpha = 0.97$; descriptively, not statistically significantly predictive of SCS *only* for STB at follow-up ($ps = 0.186$); higher rates for *both SCS & SI*	Sample taken from a larger prospective study (2018–2019); 42.4% drop-out rate at follow-up

TABLE 3 (Continued)

Authors	Year	Instrument	Design	N	Sample	Primary outcome focus	Outcome measure	Main results	Comment
Rogers, Bloch-Elkouby, Galynker	2022b	SCI	Longitudinal (1 month)	1039	Psychiatric inpatients	Differential disclosure of SI to clinicians versus researchers	C-SSRS	Internal consistency: $\alpha = 0.96$; Patients who reported SI had higher concurrent SCS symptoms than those who denied SI	Same sample as Rogers, Vespa, et al. (2021); 35.5% dropout rate at follow-up
Yaseen, Hawes, Barzilay, Galynker	2019	SCI	Longitudinal (4–8 weeks)	170	Psychiatric patients	Predictive Validity of SCS for imminent STB	C-SSRS	Predictive validity of post-discharge SA with 44.4% sensitivity and 92.8% specificity; sevenfold increase in risk	Sample taken from Galynker et al. (2017); 37.6% drop-out rate at follow-up
Ying, Cohen, Lloveras, Barzilay, Galynker	2020	SCI	Longitudinal (1 month)	451	Psychiatric outpatients	Predictive validity of SCS criteria and the Therapist Response Questionnaire Suicide Form (TRQ-SF) for near-term SB	C-SSRS	Meeting SCS criteria were associated with near-term SA ($\chi^2 = 5.987$, $p < 0.01$); predictive validity for SA with 43% sensitivity and 88% specificity; combination had incremental predictive validity for SA over traditional risk factors	Sample taken from Hawes et al. (2017); 20.4% dropout rate at follow-up
Wu, Lee, Rogers, Chan, Chen, Richards, Galynker	2022	SCI-2	Cross-sectional	4846	Taiwanese adults	Validation Study of the Taiwanese SCI-2 in an Online Population Survey	C-SSRS items	Internal consistency: $\alpha = 0.98$; good convergent validity; poor model fit for one-factor solution; after removing two items assessing anhedonia (56 and 57) good model fit for one- and five-factor solution (CFA) with superiority of five-factor model	Sample taken from the International Suicide Prevention Assessment Research for COVID-19 (I-SPARC)

Abbreviations: SA, suicide attempts; SCI, Suicide Crisis Inventory; SCS, Suicide Crisis Syndrome; SI, suicidal ideation; STB, suicidal thoughts and behaviors.

Galynker, 2022); five samples overlap, three referring to the sample used by Hawes et al. (2017), and two referring to the sample used by Calati et al. (2020); and in five studies, samples were taken from a larger, prospective study, as such there might be some overlap of the included samples (Bafna et al., 2022; Flint et al., 2021; Pia et al., 2020; Rogers, Bafna, & Galynker, 2022; see Table 3).

All but three studies were conducted in the United States and examined clinical samples of adult high-risk psychiatric patients (outpatients and inpatients). Otte et al. (2020) investigated German forensic inpatients, whereas adults of the general population were investigated in India by Menon et al. (2022) and in Taiwan by Wu et al. (2022). Sample sizes ranged from $N = 170$ to 4846. In most studies ($n = 19$), suicidal thoughts and behaviors were assessed with the Columbia-Suicide Severity Rating Scale (C-SSRS; Posner et al., 2011). All articles were co-authored by Igor Galynker. Regarding the criteria published by Robins and Guze (1970) to establish diagnostic validity, eight studies examined aspects regarding a homogeneous disorder entity (Bafna et al., 2022; Barzilay et al., 2020; Bloch-Elkouby et al., 2021; Bloch-Elkouby, Gorman, Lloveras, et al., 2020; Galynker et al., 2017; Menon et al., 2022; Otte et al., 2020; Wu et al., 2022) and 15 studies examined the course of the disorder (Bafna et al., 2022; Barzilay et al., 2020; Bloch-Elkouby et al., 2021; Bloch-Elkouby, Gorman, Lloveras, et al., 2020; Cohen et al., 2021; Flint et al., 2021; Galynker et al., 2017; McMullen et al., 2021; Parghi et al., 2021; Pia et al., 2020; Rogers, Bafna, & Galynker, 2022; Rogers, Bloch-Elkouby, & Galynker, 2022; Rogers, Vespa, et al., 2021; Yaseen et al., 2019; Ying et al., 2020). No included study has analyzed the differentiation of the SCS from other disorders and no family study has yet been conducted. All the included studies are limited to dimensional measures of SCS symptoms, which allow for correlative analysis, but do not evaluate a diagnostic measure in general (Bafna et al., 2022).

In the following, the studies are summarized and then discussed in terms of Robins and Guze's (1970) differentiation.

Evidence for unidimensional disorder entity and SCS correlates

Overall, four studies investigated the factor structure of the SCI (Barzilay et al., 2020; Bloch-Elkouby, Gorman, Lloveras, et al., 2020; Galynker et al., 2017; Otte et al., 2020), three studies investigated the factor structure of the SCI-2 (Bloch-Elkouby et al., 2021; Menon et al., 2022; Wu et al., 2022) and one study investigated the factor structure of the proxy-SCS (Bafna et al., 2022). In relation to all instruments, a five-factor structure—corresponding to the five subordinate symptom clusters—and a unidimensional structure were examined. Empirical support was found for both the five-factor solution (Bafna et al., 2022; Barzilay et al., 2020; Bloch-Elkouby et al., 2021; Galynker et al., 2017; Menon et al., 2022; Wu et al., 2022) and the one-factor solution (Bafna et al., 2022; Barzilay et al., 2020; Bloch-Elkouby et al., 2021; Menon et al., 2022; Wu et al., 2022) using confirmatory factor analyses (CFA) in all but two studies (Bloch-Elkouby, Gorman, Lloveras, et al., 2020; Galynker et al., 2017). In three cases, the five-factor solution (Bafna et al., 2022; Menon et al., 2022; Wu et al., 2022) proved to be superior to the one-factor solution. However, in a German study of forensic inpatients, no support was found for the five-factor solution (Otte et al., 2020), with the single-factor structure not being examined in this study. Of note, the total score of the SCI is described as including 13 items that do not load on any of the five subscales (Barzilay et al., 2020; Galynker et al., 2017).

The studies in which the SCI was used consistently demonstrated excellent internal consistencies, with regard to the total scale (Cronbach's $\alpha = 0.97$–0.98), as well as the five subscales: (1) Entrapment ($\alpha = 0.94$–0.95), (2) Panic/Dissociation ($\alpha = 0.88$), (3) Ruminative Flooding ($\alpha = 0.89$–0.90), (4) Emotional Pain ($\alpha = 0.88$–0.90), and (5) Fear of Dying ($\alpha = 0.80$) (e.g., Barzilay et al., 2020; Cohen et al., 2021; Galynker et al., 2017). This applies also to the SCI-2: total score ($\alpha = 0.97$–0.98), subscale scores for its five dimensions: (1) Entrapment ($\alpha = 0.96$), (2) Affective Disturbance ($\alpha = 0.91$–0.93), (3) Loss of Cognitive Control ($\alpha = 0.82$–0.87), (4) Hyperarousal ($\alpha = 0.91$–0.94), and (5) Social Withdrawal ($\alpha = 0.90$–0.93) (Bloch-Elkouby et al., 2021; Menon et al., 2022; Rogers, Bafna, & Galynker, 2022; Wu et al., 2022). Finally, the internal consistency of the 8-item short-form version (SCI-SF) was shown to be good: Cronbach's $\alpha = 0.87$ (Calati et al., 2020; Rogers, Vespa, et al., 2021).

The SCS—as assessed with the SCI and the SCI-2— was associated with concurrent, past month, and lifetime suicidal ideation (e.g. Barzilay et al., 2020; Bloch-Elkouby et al., 2021; Flint et al., 2021; Menon et al., 2022; Wu et al., 2022; Yaseen et al., 2019), as well as past month and lifetime suicide attempts (e.g. Barzilay et al., 2020; Bloch-Elkouby et al., 2021; Calati et al., 2020; Galynker et al., 2017; Menon et al., 2022) and past month and lifetime suicidal behavior (a composite measure including preparatory behavior, aborted, interrupted and actual suicide attempts: Flint et al., 2021). However, the SCS did not differentiate between individuals with versus without lifetime suicide in one study (Yaseen et al., 2019). Finally, several studies found significant associations between SCS and depression, anxiety, paranoia, psychoticism, obsessive-compulsive symptoms (e.g., Barzilay

et al., 2020; Calati et al., 2020; Galynker et al., 2017), hopelessness (Otte et al., 2020), hostility, and inferiority (Wu et al., 2022), perceived stress, thwarted belongingness and perceived burdensomeness (Menon et al., 2022; see also Cohen et al., 2019) as well as socially prescribed perfectionism and fear of humiliation (Pia et al., 2020). However, the findings are not entirely consistent, as another study (Galynker et al., 2017) found no correlation between the SCS and somatization, hostility, psychoticism, obsessive-compulsion, interpersonal problems, and phobic anxiety as assessed with the Brief Symptom Inventory (Derogatis & Melisaratos, 1983).

Furthermore, all Big Five personality traits were significantly correlated with the SCS (Flint et al., 2021): The SCI total score was positively correlated with openness to experiences and negatively correlated with agreeableness, neuroticism, extraversion, and conscientiousness. In addition, the DSM-format proxy-SCS symptom configurations (Criterion A plus one, two, three, or four Criterion B symptoms) showed a significant positive association with the SCI and the SCI-SF as well as suicidal ideation and suicide attempts (Bafna et al., 2022).

Using structural equation modeling the SCS was found to partially mediate the path from the Suicidal Narrative (see above) to past-month suicidal ideation and behavior (Cohen et al., 2019). This finding was complemented by a serial mediation analysis conducted by Cohen et al. (2021). However, in the latter study, both the proposed pathway from the Suicide Narrative to the SCS as well as the reversed way demonstrated concurrent validity for suicidal ideation and behavior. Finally, Li et al. (2018) found entrapment to mediate the effect of the other dimensions of the SCS (ruminative flooding, panic dissociation, fear of dying, emotional pain) on suicidal ideation. This finding underscores the special importance of entrapment, which is taken into account in the current understanding of the SCS (see Table 2).

In general, the proposed unidimensional structure of the SCS was supported, the self-report instruments demonstrated excellent internal consistency, and associations with lifetime and concurrent suicidal ideation and behavior were found.

Course of the disorder and predictive validity

Fifteen longitudinal studies were conducted to investigate the predictive validity of the SCS for suicidal outcomes at 4–8 weeks follow-up. The SCI was used in 11 studies (Barzilay et al., 2020; Bloch-Elkouby, Gorman, Lloveras, et al., 2020; Cohen et al., 2021; Flint et al., 2021; Galynker et al., 2017; McMullen et al., 2021; Parghi et al., 2021; Pia

et al., 2020; Rogers, Bloch-Elkouby, & Galynker, 2022; Yaseen et al., 2019; Ying et al., 2020), the SCI-2 was used in two studies (Bloch-Elkouby et al., 2021; Rogers, Bafna, & Galynker, 2022), the SCI-SF was used in one study (Rogers, Vespa, et al., 2021), and the SCS-C was used in one study (Bafna et al., 2022).

The SCS was shown to be predictive of near-term suicide attempts at 4–8 weeks follow-up assessment, using logistic regression analysis (e.g., Bafna et al., 2022; Barzilay et al., 2020; Galynker et al., 2017; Yaseen et al., 2019; Ying et al., 2020), Fisher's exact test (Rogers, Bafna, & Galynker, 2022; Rogers, Vespa, et al., 2021), structural equation modeling (Bloch-Elkouby, Gorman, Schuck, et al., 2020), as well as machine learning approaches (McMullen et al., 2021; Parghi et al., 2021). SCS at discharge was a better predictor of postdischarge suicidal behavior than SCS at admission (Galynker et al., 2017) and out of the different components of the SCS, the strongest predictors were entrapment (Galynker et al., 2017) and loss of cognitive control (Bloch-Elkouby et al., 2021), whereas social withdrawal was no significant predictor (Bloch-Elkouby et al., 2021).

In three studies the SCS was the only predictor of near-term suicide attempts—controlling for factors such as depression, anxiety, suicidal ideation, and suicide attempts (Bloch-Elkouby et al., 2021; Galynker et al., 2017; Yaseen et al., 2019), whereas in other studies, the SCS was not the only predictor but showed incremental predictive validity over traditional risk factors (suicidal ideation, lifetime suicide attempts, e.g., Bafna et al., 2022; Barzilay et al., 2020; Parghi et al., 2021; Rogers, Vespa, et al., 2021; Ying et al., 2020). In this regard, some studies showed that suicidal ideation and SCS were independent predictors of suicide attempts at follow-up (Barzilay et al., 2020; Rogers, Bafna, & Galynker, 2022), and two further studies found the combination of SCS and current suicide ideation to be of special predictive power for suicidal behavior at 1-month follow-up (McMullen et al., 2021; Rogers, Bafna, & Galynker, 2022).

In total, area under the curve (AUC) scores for the prediction of near-term suicide attempts ranged between 0.733 and 0.883 (Barzilay et al., 2020; Bloch-Elkouby et al., 2021; Galynker et al., 2017), with the specificity and sensitivity being optimized when all five symptom clusters of the SCS (see Table 2) are met (Yaseen et al., 2019). In the study by Yaseen et al. (2019), it was furthermore shown that of those who met SCS criteria, 36.4% attempted suicide after discharge, whereas 63.6% did not. Furthermore, 5.3% of those who did not meet SCS criteria, attempted suicide after discharge, whereas 94.7% did not. In a study by Rogers, Bafna, and Galynker (2022), one (8.3%) out of 12 who met SCS criteria without current suicidal ideation, and six (22.2%) out of 27 who met SCS criteria and

disclosed current suicidal ideation attempted suicide at a 1-month follow-up assessment. Finally, in a study by Ying et al. (2020), 3 (7%) out of 45 who met SCS criteria attempted suicide at a 1-month follow-up assessment. These findings translate into a Positive Predictive Value (PPV) of 0.07–0.36. In regard to the prediction of suicide attempts, a cutpoint of 163 on the SCI-2 was proposed by Bloch-Elkouby et al. (2021) based on a sample of psychiatric in- and outpatients (cf. Rogers, Bafna, & Galynker, 2022; Rogers, Bloch-Elkouby, & Galynker, 2022).

In line with their analysis of concurrent suicidal ideation and behavior (see above), Cohen et al. (2021) found both the Suicide Narrative as well as the SCS to mediate each other's effect on suicidal ideation and behavior 4–8 weeks later (see also Bloch-Elkouby, Gorman, Schuck, et al., 2020). In a serial mediation analysis, it was also shown that the association between socially prescribed perfectionism and suicidal ideation/behavior 1 month later was mediated by fear of humiliation and severity of the SCS (Pia et al., 2020). Finally, Flint et al. (2021) found all Big Five personality traits (extraversion, agreeableness, conscientiousness, openness, and neuroticism) to significantly moderate the association between SCS and suicidal behavior at a 1-month follow-up assessment, with high levels of extraversion, agreeableness, conscientiousness, and openness offering protection against suicidal behavior and high levels of neuroticism increasing risk for suicidal behavior.

In general, SCS showed predictive validity for near-term suicide attempts above and beyond suicidal ideation and other known risk factors.

DISCUSSION

The prediction of suicide remains difficult, despite ongoing research on different risk factors (Flint et al., 2021). In this context, Galynker et al. (2017) have proposed a suicide-specific syndrome, the Suicide Crisis Syndrome (SCS; Galynker, 2017), which is understood as a pre-suicidal state. This review was designed to examine the syndromal character of the SCS.

In general, findings on the SCS support the postulated syndrome character: Various studies using different samples (psychiatric in- and outpatients, general population) and different assessment instruments (SCI, SCI-2, SCI-SF) showed that the five symptom clusters (entrapment, affective disturbance, loss of cognitive control, hyperarousal, social withdrawal) occur together in the sense of a uniform syndrome. As such, both a one-factor and a five-factor solution have been supported in different studies (Bafna et al., 2022; Barzilay et al., 2020; Bloch-Elkouby et al., 2021; Bloch-Elkouby, Gorman,

Lloveras, et al., 2020; Galynker et al., 2017; Menon et al., 2022; Wu et al., 2022). Results are complemented by a recent network analysis, that did not match the inclusion criteria of the current review, but nonetheless supported the suggested symptoms of the SCS (Bloch-Elkouby, Gorman, Schuck, et al., 2020). It was furthermore shown that entrapment mediated the effect of all other symptom clusters of the SCS (Li et al., 2018) on suicidal behavior, underscoring its special importance for the development of suicidal ideation and behavior (cf. O'Connor & Portzky, 2018).

It should be noted that the description of the SCS has undergone various revisions. On the one hand, this corresponds to good scientific practice, which is rarely found in this rigor. On the other hand, this procedure naturally reduces the comparability of findings and makes dissemination of the findings more difficult. This could be one reason for the fact that the SCS is dealt with almost exclusively in Galynker's research group. This is particularly astonishing because the SCS has been shown to be predictive of near-term suicide attempts and/or suicidal behavior—controlling for other risk factors—in an array of studies; with all respective studies coming to the same result. Again, the predictive validity of the SCS was established using the different assessment instruments (SCI, SCI-2, SCI-SF) as well as different methodological approaches (e.g., logistic regression, machine learning). Furthermore, it was shown that the SCS mediated the association between various risk factors and suicide attempts. These findings support the assumptions about the suicidal process that are proposed in the Narrative-Crisis Model of suicide (Galynker, 2017).

Given that suicidal ideation is not disclosed by many individuals (Calear & Batterham, 2019), one goal in conceptualizing and describing the SCS was to explicitly omit suicidal ideation as a component of the syndrome. However, study findings suggest that assessing suicidal ideation as part of a suicide risk assessment should not be left out (e.g., Rogers, Bafna, & Galynker, 2022). In this sense, the combination of SCS and suicidal ideation proved to be particularly predictive of near-term suicide attempts (McMullen et al., 2021; Rogers, Bafna, & Galynker, 2022). From a clinical-practical point of view, the problem arises anyway how the presence of risk factors—as the SCS—without explicit evidence of suicidal intent could inform treatment decisions. For example, involuntary hospitalization might not be possible in such a case; even though it might be especially necessary in case of severe forms of the SCS.

Taken together, the SCS satisfies three of the five steps for achieving diagnostic validity according to Robins and Guze's (1970) criteria. Therefore, the study group seems to have succeeded in providing a good

clinical description of a syndromal presuicidal state. This appraisal is further supported by the fact that an independent working group has made a very comparable proposal to characterize an acute suicidal state: the Acute Suicidal Affective Disturbance (ASAD) described by Joiner and co-workers (2018; see also Rogers, Cao, et al., 2023). Still, family studies and studies on the exclusion of other disorders are missing from the SCS literature by now. With regard to the latter the differentiation between SCS and posttraumatic stress disorder (PTSD) might be of special importance due to possible symptom overlap (Bloch-Elkouby, Gorman, Schuck, et al., 2020): hypervigilance is both a criterion of the SCS and PTSD, the SCS loss of cognitive control cluster might overlap with intrusion symptoms in PTSD, and the SCS affective disturbance cluster might overlap with negative alterations in cognitions and mood seen in PTSD. Future studies on this issue have to be awaited.

In addition, studies are needed in which the presence of the SCS is determined using a clinical interview rather than a questionnaire score. Studies have shown on several occasions that the prevalence of psychopathological syndromes is overestimated on the basis of self-report questionnaires (Scott et al., 2023; Thombs et al., 2018) so a more rigorous investigation of the phenomenon appears to be advisable. From a practical perspective, the administration of a 61-item measure (i.e., the SCI-2) also appears to be rather impractical in certain contexts; albeit clinicians just recently endorsed the clinical utility of the SCS (Mitelman et al., 2023). The development and evaluation of a clinician-rated SCS-Checklist (SCS-C; Bafna et al., 2022), an abbreviated SCS checklist (A-SCS-C; Karsen et al., 2023), and a Five-item Suicide Crisis Scale (SCS-5; Lee et al., 2023) might be a step into the right direction.

In principle, it is important to acknowledge that events with a low base rate, such as suicide attempts and suicides, can never be precisely predicted—no matter which assessments and methods are used (Belsher et al., 2019; Bryan, 2021). As such, a possible SCS diagnosis will never be a precise predictor of suicidal behavior. In this sense, the present studies showed that the vast majority of patients who met SCS criteria did not attempt suicide during the study period and that a small proportion of those who did attempt suicide did not meet SCS criteria at the time of the assessment (Lee et al., 2023; Rogers, Bafna, & Galynker, 2022; Yaseen et al., 2019; Ying et al., 2020). With this in mind, one has to be cautious of not expecting too much from the "diagnosis" of an SCS (c.f. Berman & Silverman, 2023). Same as suicide risk scales should not be used to determine access to treatment facilities (https://www.nice.org.uk/guidance/ng225) the SCS should not be used to decide on treatment conditions; yet, a positive SCS

should definitely investigate further assessment and intensification of treatment. From a prevention perspective, the detection of SCS symptoms may nevertheless be of great importance. For example, just-in-time interventions adapted to a temporally high-resolution EMA detection of SCS symptoms would be conceivable (Coppersmith et al., 2022). In general, research on warning signs for imminent suicide can be expected to benefit in particular from newer (statistical) methods, such as high-resolution EMA studies (Kivelä et al., 2022; Sedano-Capdevila et al., 2021) and machine learning approaches (cf. Ribeiro et al., 2019). For example, (Coppersmith, Wang, et al. 2023) just published a case report in which continuous smartphone and sensor data were collected before, during, and after a suicide attempt made by a psychiatric inpatient. Studies like these have the potential to really expand our knowledge on the warning signs and near-term suicide prediction (cf. Coppersmith, Ryan, et al., 2023; Kiekens et al., 2023).

The goal of this review was to systematically evaluate and summarize findings on the SCS. It was possible to identify a large number of studies. At the same time, no dissertations or non-English language publications were included, potentially overlooking relevant work on a relatively new research topic. Furthermore, no meta-analytic evaluation of the predictive significance of the SCS was performed. The described study situation suggests that this could and should be done in future investigations. A further limitation refers to the fact, that it was not always identifiable whether articles refer to identical, overlapping, or independent samples. Especially with regard to a meta-analytical evaluation, precise consultation with the respective authors is required to avoid duplicate use of data sets. Finally, no studies were included in which the SCS was not associated with a measure of suicidal ideation and behavior. Thus, some studies were not included in the present study, although they might contain relevant information on the SCS. Since the literature search only included studies published up to December 2022, it is important to note that more recent publications on the SCS and the Narrative-Crisis Model were not considered in the current review (Karsen et al., 2023; Lee et al., 2023; Mitelman et al., 2023; Park et al., 2023; Rogers, Jeon, et al., 2023; Rogers, McMullen, et al., 2023; Rogers, Richards, et al., 2023; Wu et al., 2023). Among the various studies, a global collaboration (Rogers, Jeon, et al., 2023; Rogers, McMullen, et al., 2023; Rogers, Richards, et al., 2023) has to be highlighted that examined the prevalence of the Suicide Crisis Syndrome in 10 countries worldwide: It was shown that the SCS occurred crossnationally, with rates ranging from 3.6% (Israel) to 16.2% (Poland; Rogers, Jeon, et al., 2023; Rogers, McMullen, et al., 2023; Rogers, Richards, et al., 2023). Furthermore, participants who were older, identified as cisgender men,

and were married tended to have lower rates of SCS than their respective counterparts (cf. Lee et al., 2023).

CONCLUSION

Taken together, the evidence suggests that Galynker and colleagues succeeded in describing a presuicidal state. However, further studies—including temporally high-resolution EMA studies—have to be awaited. In general, it must be kept in mind that suicidal behavior occurs in complex ways (de Beurs et al., 2021; Huang et al., 2019) and that the "diagnosis" of a suicidal syndrome will therefore never allow a precise prediction of future suicidal behavior.

CONFLICT OF INTEREST STATEMENT
On behalf of all authors, the corresponding author states that there is no conflict of interest.

DATA AVAILABILITY STATEMENT
The data sets are available from the corresponding author upon reasonable request.

CONSENT FOR PUBLICATION
All authors listed have approved the publication of the manuscript.

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ENDNOTE
[1] The search term "suicide trigger state" was used to ensure that studies possibly using the terms "suicide trigger state" and "Suicide Crisis Syndrome" synonymously would not be overlooked. Still, due to different construct definitions, studies assessing the suicide trigger scale were not included in the current study.

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