



Exploring associations between the Modular Assessment of Risk for Imminent Suicide (MARIS) questionnaire and recent suicidal ideation and behavior among patients admitted at an acute psychiatric inpatient department

Karina Sagmo Høyen, Lisa Janet Cohen, Stian Solem, Astrid Prestmo, Kjetil Sørensen, Øyvind Salvesen, Odin Hjemdal, Arne Einar Vaaler & Terje Torgersen

To cite this article: Karina Sagmo Høyen, Lisa Janet Cohen, Stian Solem, Astrid Prestmo, Kjetil Sørensen, Øyvind Salvesen, Odin Hjemdal, Arne Einar Vaaler & Terje Torgersen (2023) Exploring associations between the Modular Assessment of Risk for Imminent Suicide (MARIS) questionnaire and recent suicidal ideation and behavior among patients admitted at an acute psychiatric inpatient department, *Nordic Journal of Psychiatry*, 77:3, 266-275, DOI: [10.1080/08039488.2022.2100929](https://doi.org/10.1080/08039488.2022.2100929)

To link to this article: <https://doi.org/10.1080/08039488.2022.2100929>



© 2022 St. Olavs Hospital. Published by Informa UK Limited, trading as Taylor & Francis Group



[View supplementary material](#)



Published online: 22 Aug 2022.



[Submit your article to this journal](#)



Article views: 419




[View related articles](#)



[View Crossmark data](#)

Exploring associations between the Modular Assessment of Risk for Imminent Suicide (MARIS) questionnaire and recent suicidal ideation and behavior among patients admitted at an acute psychiatric inpatient department

Karina Sagmo Høyen^{a,b}, Lisa Janet Cohen^c, Stian Solem^d , Astrid Prestmo^{a,b}, Kjetil Sørensen^a, Øyvind Salvesen^e , Odin Hjemdal^d , Arne Einar Vaaler^{a,b} and Terje Torgersen^{a,b,f}

^aDepartment of Acute Psychiatry, Division of Mental Health Care, St. Olavs Hospital, Trondheim, Norway; ^bDepartment of Mental Health, Norwegian University of Science and Technology (NTNU), Trondheim, Norway; ^cCarl Icahn School of Medicine, Mount Sinai/Mount Sinai Beth Israel, New York, NY, USA; ^dDepartment of Psychology, NTNU, Trondheim, Norway; ^eDepartment of Public Health and Nursing, Faculty of Medicine and Health Sciences, NTNU, Trondheim, Norway; ^fNidelv District Psychiatric Centre, Division of Mental Health Care, St. Olavs Hospital, Trondheim, Norway

ABSTRACT

Purpose: The aim of the present study was to investigate the psychometric validity of the Modular Assessment of Risk for Imminent Suicide (MARIS) questionnaire in relation to recent suicidal ideation and behavior among a sample of patients admitted to an acute psychiatric inpatient department in Norway.

Methods: The MARIS was completed within the first 24 h after admission by 338 patients and their clinicians. Information on recent suicidal ideation and behavior was extracted from patients' medical charts. Two out of four MARIS modules, the Suicide Trigger Scale Short-Form (STS-SF; modified version), and the Therapist Response Questionnaire Short-Form (TRQ-SF) demonstrated good internal consistency. The relationships between the STS-SF, addressing symptoms of the suicide crisis syndrome, and the TRQ-SF, exploring therapist emotional responses, and recent suicidal ideation was investigated by logistic regression analysis.

Results: In the logistic regression analysis including pre-selected diagnoses, age, and gender as covariates, both STS-SF and TRQ-SF showed significant associations with recent suicidal ideation (inclusive of suicidal behavior in 27% of the patients with suicidal ideation).

Conclusion: Both the STS-SF and the TRQ-SF showed concurrent and incremental validity with regard to suicidal ideation. This is the first study showing the cross-cultural validity of the MARIS and supports its clinical utility as a suicide risk assessment tool in inpatient settings. Additionally, this study adds to the literature supporting the value of assessing clinicians' emotional responses to high risk patients.

ARTICLE HISTORY

Received 3 March 2022
Revised 31 May 2022
Accepted 23 June 2022

KEYWORDS

Suicidal ideation; suicidal behavior; MARIS



1. Introduction

Suicide risk among psychiatric inpatients during admission and following discharge is greatly elevated compared to that of the general population [1,2]. Nonetheless, despite substantial research efforts, relevant risk factors for *imminent* suicide risk remain poorly known [3,4], and clinical suicide risk assessments thus remain insufficient. Many of the non-modifiable risk factors reported by prior research (e.g. age or male sex) have limited clinical value [4,5]. Such factors provide neither indication of the severity of the present risk, nor specify a target for intervention [6].

The recently developed Modular Assessment of Risk for Imminent Suicide questionnaire (MARIS; [7–9]) aims at assessing imminent suicide risk. The instrument surveys both patient and therapist, and is completed within a matter of

minutes, thus making it applicable to high-activity clinical settings. The MARIS questionnaire is comprised of four individual modules, each measuring separate risk dimensions. The Suicide Trigger Scale-Short Form (STS-SF) measures symptoms of the Suicide Crisis Syndrome (SCS; [10,11]), and the Therapist Response Questionnaire-Short Form (TRQ-SF) addresses the emotional reactions of the therapist in response to the patient. The two remaining modules are the Suicide Opinion Questionnaire Short-Form (SOQ-SF) and the Short Clinical Assessment of Risk for Suicide (SCARS).

The SCS is an acute mental affective state characterized by subjective experiences of entrapment, emotional pain, loss of cognitive control, and hyper arousal. Acute psychological states, such as mental pain [12] and disturbances [13], have been increasingly implicated in the understanding of acute suicide risk [14]. Measures of the SCS have

CONTACT Karina Sagmo Høyen  karina.sagmo.hoyen@stolav.no  St. Olavs Hospital HF, Division of Mental Health, Department of Acute Psychiatry, PO box 3250 Torgarden, NO-7006, Trondheim, Norway

 Supplemental data for this article is available online at <https://doi.org/10.1080/08039488.2022.2100929>

© 2022 St. Olavs Hospital. Published by Informa UK Limited, trading as Taylor & Francis Group

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

demonstrated concurrent [15] and predictive [16,17] validity with regard to suicidal thoughts and behaviors. The STS-SF has previously shown associations with recent [7] and future [9] suicidal thoughts and behavior. Importantly, the STS-SF items do not address whether or not the patients experience or express suicidal ideation. This may be seen as a strength in terms of suicide risk assessment, as a study by Busch, Fawcett and Jacobs [18] reported that 78% of patients who died by suicide during or post-hospital discharge denied suicidal ideation, as documented in their last assessment.

Prior studies have also shown that the emotional response of the therapist to the patient represents a separate contribution to clinical suicide risk assessment, though one not typically formalized into the evaluation [19,20]. The TRQ-SF module identifies the therapist's emotional response, incorporating this information as part of the suicide risk assessment. The TRQ-SF has shown significant associations with recent ([7,21]; $r_s = 0.16$ in 21) and future suicidal thoughts and behavior ([21]; $r_s = 0.12$) as well as suicidal ideation ([21]; $r_s = 0.22$).

The SOQ-SF module address patients' attitudes towards suicide [22] and the remaining SCARS module addresses chronic risk factors of suicide, such as prior suicide attempt [7–9].

To date, three prior studies have reported on the MARIS in the United States (U.S; [7–9]). In all three studies, inclusion criteria for inpatients have included suicidal ideation or suicide attempts. There is thus a need for expanding the investigation of the MARIS in terms of inpatients sample characteristics as well as to patient populations outside of the US. The present study was conducted among patients admitted to an acute psychiatric inpatient department in Norway, with the aim of testing the psychometric properties of the MARIS in relation to recent suicidal ideation and behavior.

2. Methods

2.1. Study setting

The study was conducted among a sample of patients acutely admitted to a locked-door, psychiatric inpatient department at St. Olavs hospital, Norway, between January 2016 and June 2017. In Norway, acute psychiatric services are catchment area based and publicly funded. All patients living in the catchment area needing acute psychiatric inpatient care are admitted to the department. The department consisted of 40 beds in three subunits, and the total patient population admitted to the acute department during the project period was 1,231. A previous report has been published by our research group based on a sub-sample from the larger research project of which the current study is a part [23].

2.2. Ethics

The study was part of a broader prospective and register-based project, the Genetic and Affective Prediction study

(GAP-Study), investigating potential predictors of affective impulsivity. The project was approved by the Regional Ethical Committee (REC Central Norway; reference number 9565(2014/1751). The Clinical Trials number for the study is NCT02625818. An inclusion criterion for the GAP-study was that the patients had to speak Norwegian or English. Patients were excluded from the study if their mental condition made them unable to give an informed consent, as assessed by a psychiatrist or specialist in clinical psychology. The evaluation of the patient's ability to provide an informed consent was done when the specialist did a clinical assessment of the patients within 24-hours of admission.

All patients eligible for inclusion were provided information about the study and invited to participate after signing an informed consent form. For the present analysis, an additional inclusion criterion was the availability of some completed modules of the MARIS questionnaire.

2.3. Participants

Initially, 347 patients were entered into the study, but for nine patients the complete MARIS questionnaire was unanswered, and therefore the final sample for this study included 338 participants. A description of the study sample is shown in Table 1.

2.4. Procedure

As the patients were admitted to the hospital, the physician on duty completed a research intake form, from which selected demographic information was extracted for the current study. In accordance with Norwegian national guidelines [26], at intake the physician on duty at the acute psychiatric department performed a standardized suicide risk assessment. As part of this assessment, patients were asked if they had thoughts about suicide and whether they had a past suicide attempt. A psychiatrist or specialist in clinical psychology assessed the patients within 24 h of admission and performed a second suicide risk assessment. The clinicians' suicide risk assessments were documented in the patients' medical charts. The MARIS questionnaire was administered in the context of the assessment by specialist. The information from the routine clinical suicide risk assessments provided the data on suicidal ideation and behavior used in this study. Extraction and coding of such information from patients' medical charts was based on definitions from the Columbia-Suicide Severity Rating Scale (C-SSRS; [27]).

Diagnoses were determined according to the ICD-10 'Criteria for Research' [24] in joint assessment meetings at the department. At least two specialists in psychiatry or clinical psychology, one of whom having personally assessed the patient, were present in the meetings.

2.5. Measures

2.5.1. The MARIS (7-9)

The English language MARIS (available in Calati et al. [7]) was translated to Norwegian by author A.E.V then translated back

Table 1. Demographic and clinical descriptions of study sample (N = 338).

	M	SD
Demographic variables		
Age	38.32	15.87
Sex (women)	n	%
Marital Status (n = 336)	182	53.8
Single	185	55.1
Married/Cohabiting/Partner	105	31.3
Divorced/separated	35	10.4
Widow/widower	11	3.3
Clinical variables		
Voluntary referral for admission	288	85.2
Compulsory referral for admission	50	14.8
Diagnosis ^a	Primary diagnosis	Primary and/or secondary diagnosis
	n (%)	n (%)
Disorders due to use of alcohol (F10)	33 (9.8)	53 (15.7)
Disorders due to substance use (F11–F19)	24 (7.1)	50 (14.8)
Schizophrenia, schizotypal and delusional disorders (F20–F29)	28 (8.3)	31 (9.2)
Bipolar affective disorder, current episode hypomanic or manic (F31.0–F31.2)	15 (4.4)	15 (4.4)
Bipolar affective disorder, current episode depression (F31.3–F31.6) ^b	22 (6.5)	22 (6.5)
Bipolar affective disorder, remission, other, or unspecified (F31.7–F31.9)	13 (3.8)	15 (4.4)
Depression (depressive episode or recurrent depressive disorder (F32, F33)	72 (21.3)	82 (24.3)
Anxiety disorders (F40–F42)	9 (2.7)	13 (3.8)
Reaction to severe stress, and adjustment disorders (F43.0–F43.9)	31 (9.2)	48 (14.2)
EUPD ^c	23 (6.8)	31 (9.2)
Personality disorders (F60–F62; F60.3 excluded)	13 (3.8)	27 (8.0)
Hyperkinetic disorders (F90)	2 (0.6)	22 (6.5)
R or Z-diagnosis ^d	20 (5.9)	38 (11.2)
Other diagnoses	33 (9.8)	74 (21.9)

^aDiagnosis of 'mental and behavioural disorders' according to 'The ICD-10 Classification of Mental and Behavioural Disorders: Diagnostic Criteria for Research' [24]. ^b Includes current episode mixed (F31.6, n = 5), ^c Emotionally unstable personality disorder (F60.3 in ICD-10). ^d R diagnosis = 'Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified', Z diagnosis = 'Factors influencing health status and contact with health services' [25].

to English by O. Linaker (M.D, PhD). In a joint meeting, Z. Yaseen (M.D) and A.E.V finalized the systematic translation.

MARIS Module STS-SF measures the extent to which patients have experienced symptoms of the SCS (e.g. 'Did you feel like you were getting a headache from too many thoughts in your head?') and asks the patients to report based on 'In the past couple of days, when you felt your worst'. The STS-SF consists of eight items, with responses ranging from 0 (*not at all*) to 4 (*extremely*); item scores are summed to produce a total score. The scale is a brief version of the longer Suicide Trigger Scale [28], with two additional items addressing fear of dying. Past studies have indicated satisfactory reliability for the STS-SF ($\alpha = .87$ (7) and $\alpha = .87$ (9)). Based on preliminary analyses (see section 2.5.1.2.), a six-item modified version of the STS-SF was used for this study, excluding the original item 1 ('Did you become afraid that you would die?') and item 2 ('Did you think something, like a heart attack or accident, would suddenly kill you?').

The TRQ-SF describes ten emotional responses to a patient that the clinician might experience during a clinical assessment (e.g. 'This patient gave me chills'). The scale is comprised of items from existing scales [29,30] as well as workshop generated items [31]. Scores range from 0 (*not at all*) to 4 (*extremely*). The emotional responses described in the TRQ-SF reflect distress and lack of affiliation and hopelessness [21,31]. Four statements in the TRQ-SF are positively framed and reverse scored prior to calculating a total score. The total TRQ-SF has demonstrated adequate reliability (Cronbach's alpha at $\alpha = .86$ [7]); and is reflective of a general negative emotional response of the therapist upon assessing

the patient [7]. The TRQ-SF was completed in the context of the assessment by specialist within 24-hours after admission.

The SOQ-SF addresses patients' general attitudes towards suicide, and consists of selected items from the Suicide Opinion Questionnaire [22,32]. The scale consists of eight items and response categories ranges from 0 (*strongly disagree*) to 4 (*strongly agree*). In recent studies, published after the present study was initiated, Cronbach's alpha for SOQ-SF has been reported to be unacceptably low at $\alpha = .17$ (9) and $\alpha = .23$ (7). A sample item is 'Sometimes suicide is the only escape from life's problems'.

The SCARS consists of seven dichotomous items that assess known long-term risk factors. SCARS items were drawn from a modified 5-item SAD PERSONS subscale [33], as well as two items addressing previous suicide attempts and substance use (7). A negative answer received a score of 0, and a positive answer was scored 1 or 2 depending on severity of the risk factor measured. Similar to the SOQ-SF module, recent studies have also reported unacceptably low Cronbach's alphas for module SCARS at $\alpha = .45$ (9) and $\alpha = .44$ (7). A sample item include 'Recent relapse or escalation in drug/alcohol use?'.

2.5.1.1. Missing information on MARIS modules. To handle missing scores, for three out of the four MARIS modules (STS-SF, TRQ-SF and SOQ-SF), a guideline of replacing a maximum of 25% of each patient's scores on the individual modules with that patient's mean score on the relevant module was applied. After replacement, there were two patients with missing scores for the STS-SF, 28 for the TRQ-SF, and 7 for

the SOQ-SF. For the SCARS, 35 patients had one or more missing responses; 16 had a missing value on a total of one or two items, out of which 7 could be replaced with information available from medical charts.

2.5.1.2. Reliability and component structure of MARIS modules. For the modules SOQ-SF and SCARS, Cronbach's alphas were low at $\alpha = .22$ and $\alpha = .47$. Due to the low reliability, these modules were not included in further analyses.

For the STS-SF module, two of the original items ('Did you become afraid that you would die?', $M = 1.27$, $SD = 1.47$ and 'Did you think something, like a heart attack or accident, would suddenly kill you?', $M = 0.77$, $SD = 1.23$) had a moderate correlation with each other ($r = .35$) but both had low correlations ($< .3$) with the remaining six items (corrected item-total correlations for the two items = $.28$ and $.27$). Principal components analyses (PCA; Kaiser-Meyer-Olkin = $.78$; Bartlett's test of Sphericity $p < .001$) indicated two components with eigenvalues > 1 , and inspection of the initial component matrix and the rotated solutions (oblique rotation by direct oblimin) further indicated that the two items formed a separate component from the remaining items (see [Supplementary Tables 1 and 2](#) for Pattern- and Structure matrices). Based on these preliminary findings, the two items were not included in further analyses.

The modified version of the STS-SF used for analyses thus consisted of six items and had a Cronbach's alpha of $\alpha = .79$ (mean inter-item correlation = $.38$). Distribution of the STS-SF total scale scores showed skewness = $-.15$ ($SE = .13$) and kurtosis = $-.83$ ($SE = .27$). Scores ranged from 0-24. A box-plot of distribution of scores on the modified six-item version of the STS-SF is included in the [Supplemental Material \(Supplementary Figure 1\)](#).

For TRQ-SF, PCA indicated two components with eigenvalues > 1 (Kaiser-Meyer-Olkin = $.87$; Bartlett's test of Sphericity $p < .001$). Examination of scree plot and initial- and pattern matrices also indicate a possible two-component grouping of the TRQ-SF items. The two components were correlated ($.32$), and structure matrix thus show double loadings for some items (see [Supplemental Material Supplementary Tables 3 and 4](#) for Pattern- and Structure matrices). Also, the items with the highest loading on the second component were solely items that were positively worded and required reverse scoring, which might explain the grouping of these items. Given the aforementioned considerations, as well as a low Cronbach's alpha value for the second component ($\alpha = .62$), the TRQ-SF was analyzed as a full-scale score. Analyzing the TRQ-SF as a full scale score is in line with prior research [7].

The overall Cronbach's alpha for the TRQ-SF was satisfactory at $\alpha = .83$. The TRQ-SF total scores were non-normally distributed (skewness = 1.92 ($SE = .14$); kurtosis = 4.52 ($SE = .28$)). Scores ranged from 2-30. A box-plot of distribution of scores on the TRQ-SF is included in the [Supplemental Material \(Supplementary Figure 2\)](#).

2.5.2. Suicidal ideation and behavior

The first author performed the final coding of data on suicidal ideation and behavior. The primary source of

information were the intake assessments by the physician on duty. When information in these assessments was missing, information from the assessment by specialist was used. Prior to the final coding, inter-rater agreement was assessed by the first author and a master's level psychiatric nurse (author K.S) for a subset of cases ($n = 27$) from the original research project sample ($n = 347$). Any cases regarded as difficult to code or missing information were coded by consensus by the first and last author. For actual suicide attempts, the lethality of the attempt was coded by the last author.

The C-SSRS [27] provides standardized definitions of suicidal ideation and behavior. The severity of suicidal ideation subscale describes increasingly severe levels of suicidal ideation, ranging from passive thoughts of wishing to no longer to be alive to active thoughts including the intention to commit suicide. For the purpose of this study, the variable measuring suicidal ideation (SI) was coded as a dichotomous variable indicating the absence (0) or presence (1) of recent suicidal ideation, i.e. at time of intake assessments or within the last month preceding admission. The definition of SI was inclusive of all levels of the C-SSRS suicidal ideation severity scale described above.

For inter-rater agreement on recent suicidal ideation, raters agreed in 92.6% of cases (25 cases; $\kappa = .71$; 24 cases were rated as positive for suicidal ideation by one or more raters and 5 cases as negative or missing (1) by one or more raters). A variable measuring lifetime suicidal ideation (last month preceding admission excluded) did not demonstrate satisfactory inter-rater reliability and was therefore not included in data collection.

The C-SSRS defines four different types of suicidal behavior: preparations for suicide attempt; aborted suicide attempt (actions towards a suicide attempt have been initiated but the person interrupts oneself before the attempt has been performed); interrupted suicide attempt (the attempt was interrupted by something or someone other than the person); and actual suicide attempt. For actual suicide attempts, the lethality of the attempt is also scored [27]. In the present study, suicidal behavior was coded according to the corresponding type of suicidal behavior defined by the C-SSRS. For each time period, recent (last month preceding admission) and lifetime (last month preceding admission excluded), the most severe form of suicidal behavior was coded.

For inter-rater agreement on recent and lifetime suicidal behavior, raters agreed in a total of 23 out of 27 cases (85.2%) and 22 out of 27 cases (81.5%). For a measure reflecting the most severe level of recent suicidal ideation or behavior (using information from ratings on suicidal ideation and behavior), raters agreed in a total of 23 out of 27 cases (85.2%). Polychoric correlation coefficients were $.99$ for all three variables (excluding cases rated as missing by one or more raters for the calculation of the Polychoric correlation coefficients).

The variable on suicidal behavior used for analyses, termed SB, also incorporated information on lethality of actual suicide attempts. Scores ranged from no suicidal behavior (0), preparations for suicide attempt (1), aborted or

Table 2. Frequencies of suicidal ideation, suicidal behavior, and suicidal ideation and behavior in the study sample ($N = 338$).

<i>Suicidal ideation and behavior within one month prior to admission</i>	<i>n</i>	<i>%</i>
Suicidal ideation ^a (yes) ($n = 337$)	243	72.1
Frequencies of suicidal behavior ^a ($n = 320$)		
No suicidal behavior	255	79.7
Preparation for suicide attempt	17	5.3
Aborted suicide attempt	13	4.1
Interrupted suicide attempt	6	1.9
Actual suicide attempt	29	9.1
Most severe level of suicidal ideation or behavior ^a ($n = 319$)		
No suicidal ideation or behavior	84	26.3
Suicidal ideation	170	53.3
Preparation for suicide attempt	17	5.3
Aborted suicide attempt	13	4.1
Interrupted suicide attempt	6	1.9
Actual suicide attempt	29	9.1
Lethality of recent attempt ^b ($n = 29$)		
No or very limited physical injury	6	20.7
Minor physical injury	2	6.9
Moderate physical injury	3	10.3
Moderately severe physical injury	17	58.6
Severe physical injury	1	3.4
Suicidal behavior during lifetime ^{a, c} ($n = 298$)		
No suicidal behavior	174	58.4
Some form of suicidal behavior ^d	124	41.6

^a Categories based on the Columbia- Suicide Severity Rating Scale (C-SSRS; 27). ^b C-SSRS Lethality Scale; Posner *et al.*, (27). ^c Last month preceding admission excluded. ^d Includes preparations for suicide attempt, aborted suicide attempt, interrupted suicide attempt or actual suicide attempt; The first row 'Suicidal ideation' (SI) shows information on SI (no/yes); 'Frequencies of suicidal behavior' shows information on suicidal behavior (not considering SI); 'Most severe level of suicidal ideation or behavior' considers information on both suicidal ideation and behavior. Patients who had both suicidal ideation and behavior are coded according to the most severe form (i.e. the relevant suicidal behavior); Only one type of suicidal behavior was registered for each patient (the most severe).

interrupted suicide attempt (2), actual suicide attempt low lethality (3), and actual suicide attempt high lethality (4). Low lethality corresponded to a C-SSRS lethality scale score of 0-2 and high lethality to a score of 3-4 (see Table 2). The category of interrupted suicide attempt for the recent period was collapsed with aborted suicide attempt, due to a low incidence of interrupted attempts ($n = 6$). This SB variable corresponds to that used by Calati *et al.* [7], with the exception of collapsing interrupted and aborted suicide attempt.

A variable reflecting the most severe level of recent suicidal ideation and behavior (SIB) corresponded to the SB variable but distinguished between patients with no suicidal ideation or behavior (0), and patients with SI (1), in addition to the levels of SB described for SB (from preparations (2) to actual suicide attempt high lethality (5)). This corresponds to the variable used in prior research by Calati *et al.* [7], except that the present study utilized a dichotomous instead of a continuous measure of suicidal ideation, in addition to the aforementioned collapsing of aborted and interrupted categories. In the study by Calati *et al.* [7] the relevant timeframes to investigate the recent period were past 1 month for suicidal ideation and past 1 or 3 months for suicidal behavior.

2.5.2.1. Missing information SI, SB and SIB. For SI, one patient had missing information ($n = 337$). For recent SB, 18 patients had missing information ($n = 320$). Thus, for SIB, 19 patients had missing information ($n = 319$). For lifetime

SB, 40 patients had missing information ($n = 298$). For two and seven patients for the last month and lifetime period, respectively, it could not be decided whether the nature of self-ham episodes should be assessed as suicidal or non-suicidal. These incidences were thus not included as suicidal behavior.

2.5.2.2. Frequencies of suicidal ideation and behavior.

Table 2 shows the frequencies of suicidal ideation and behavior among the patients in the study. All the patients that were reported with suicidal behavior also had suicidal ideation, and among the patients with suicidal ideation, 27% ($n = 65$) had performed some form of suicidal behavior.

2.6. Statistical analysis

A preliminary exploration of the distributions of scores on the STS-SF and TRQ-SF according to patients' most severe form of recent suicidality (SIB), indicated a pattern of lower mean scores among patients with no suicidal ideation or behavior, compared to patients with suicidal ideation and behavior (see Table 3).

Based on the distribution of scores, a three-category, ordinal variable was computed based on variable SIB to reflect patients without suicidal ideation or behavior, patients with suicidal ideation, and patient with some form of suicidal behavior. Figure 1 and 2 shows the box-plots of scores on STS-SF and TRQ-SF according to these categories.

Visual inspection of box-plots indicated a meaningful split in scores for both predictor variables between patients with and without recent suicidal ideation or behavior. The preliminary inspection of scores on STS-SF and TRQ-SF thus provided indication for statistical testing of a dichotomous variable of differences between patient with and without suicidal ideation or behavior. The SI variable differentiated patients with and without suicidal ideation, and all patients with suicidal behavior also had suicidal ideation. Bivariate associations between the STS-SF and TRQ-SF and outcome SI were thus performed to explore unadjusted associations. To address the primary aim, a logistic regression analysis using SI as the outcome was also performed.

Potential covariates that were included in the logistic regression model included age, sex, and the pre-selected psychiatric diagnoses of unipolar and bipolar depression, alcohol- and drug related disorders, and emotionally unstable personality disorder (F60.3 in ICD-10 (24)), as these have been reported to have high frequencies of suicidal thoughts and behavior [34-37]. See Table 1 for specific ICD-10 codes used in the current study. Reaction to severe stress, and adjustment disorders (F43 in ICD-10) were also included as such disorders were frequent among the patients having performed high lethality suicide attempts. Bootstrap results for the variables in the logistic regression analyses are presented in the Supplemental Material (Supplementary Table 6).

Analyses for this study were performed in SPSS (version 27) or R 3.6.3.

Table 3. Descriptive scores on the Suicide Trigger Scale Short-Form (STS-SF)^a and Therapist Response Questionnaire- Short Form (TRQ-SF) for categories of the Suicidal Ideation and Behavior variable (SIB, $n = 319$).

	STS-SF ^a			TRQ-SF		
	Mean (SD)	SE	Median (IQR)	Mean (SD)	SE	Median (IQR)
No SIB (n (STS-SF/TRQ-SF) = 82/77)	8.68 (5.97)	.66	8.00 (9.25)	7.195 (3.00)	.34	7.00 (3.50)
Suicidal ideation (n (STS-SF/TRQ-SF) = 170/157)	13.40 (5.45)	.42	14.00 (7.25)	8.78 (4.88)	.39	7.00 (4.00)
Preparations for suicide attempt (n (STS-SF/TRQ-SF) = 17/16)	12.88 (7.28)	1.77	15.00 (15.00)	8.63 (3.63)	.91	7.00 (5.50)
Aborted or Interrupted suicide attempt (n (STS-SF/TRQ-SF) = 19/19)	13.32 (6.92)	1.59	13.00 (9.00)	8.95 (6.67)	1.53	6.00 (4.00)
Actual suicide attempt, low lethality (n (STS-SF/TRQ-SF) = 11/11)	12.46 (6.39)	1.93	14.00 (14.00)	8.73 (6.31)	1.90	7.00 (3.00)
Actual suicide attempt, high lethality (n (STS-SF/TRQ-SF) = 18/16)	13.17 (4.55)	1.07	13.00 (7.50)	8.31 (4.05)	1.01	8.00 (6.75)

^aSix-item version of STS-SF. SD: Standard Deviation; SE: Standard Error; IQR: Interquartile Range; Definitions of suicidal ideation and behavior based on the Columbia- Suicide Severity Rating Scale (C-SSRS) [27].

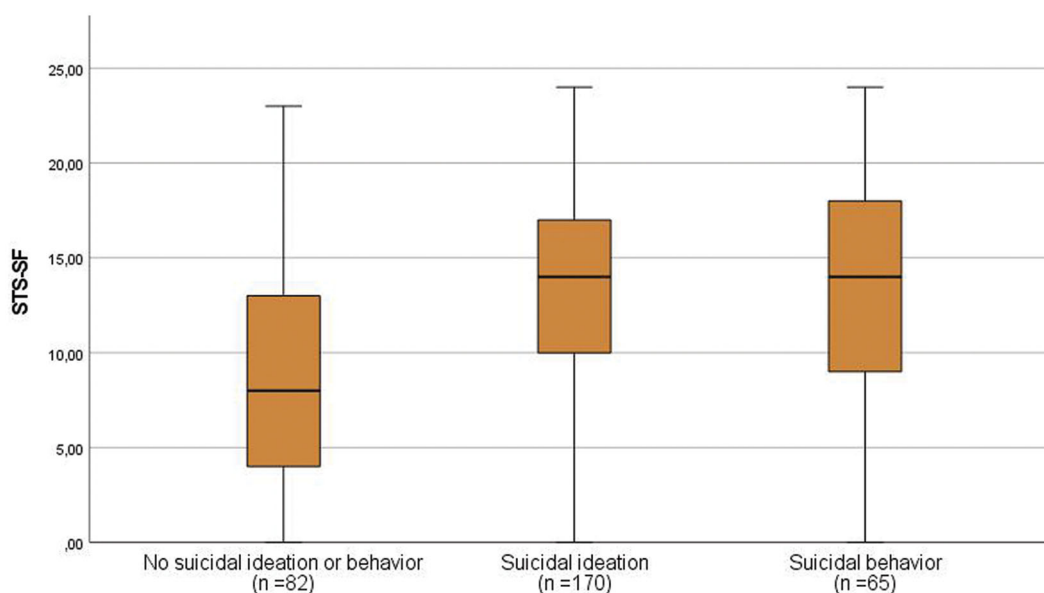


Figure 1. Box-plot of scores on Suicide Trigger Scale –Short Form^a (STS-SF) according to groups of no suicidal ideation or behavior, suicidal ideation, and suicidal behavior ($n = 317$). ^aSix-item version of STS-SF.

3. Results

3.1. Descriptive scores of the STS-SF and TRQ-SF

Within the total study sample, the mean score on the STS-SF was 11.93 ($SD = 6.13$; $Mdn = 12.00$; Interquartile range = 9.00). The mean score of the TRQ-SF in the sample was 8.33 ($SD = 4.57$; $Mdn = 7.00$, Interquartile range = 4.00; 5% Trimmed Mean = 7.82). Mean scores for the individual TRQ-SF items are presented in the [Supplemental Material \(Supplementary Table 5\)](#). Among the patients in this sample, 60.5% and 55% answered 'quite a bit; or "extremely"' on STS-SF items "Did you feel there is no exit" and "Did you feel trapped?". Regarding item "Did you feel your thoughts are confused?", 59.5% answered "quite a bit; or extremely".

3.2. Associations between MARIS modules STS-SF and TRQ-SF and recent suicidal ideation

Patients with recent SI had significantly higher scores on the STS-SF ($n = 243$, $M = 13.21$, $SE = .37$) compared to patients without SI ($n = 92$, $M = 8.58$, $SE = .63$, $t(156.72) = 6.40$, mean difference = 4.64, $p < .001$, 95% CI [3.21, 6.07]). Higher scores on the TRQ-SF were also reported for patients with SI ($n = 225$, $M = 8.79$, $SE = .33$, $Md = 7.00$, Mean rank = 163.17) compared to patients without SI ($n = 85$, $M = 7.11$, $SE = .33$, $Md = 7.00$, Mean Rank = 135.20; $z = 2.47$, $p = .014$).

Table 4 shows the results of the logistic analysis for outcome SI. Independent associations with SI were found for the STS-SF, TRQ-SF, depressive disorders, disorders due to use of alcohol, and reaction to severe stress, and adjustment

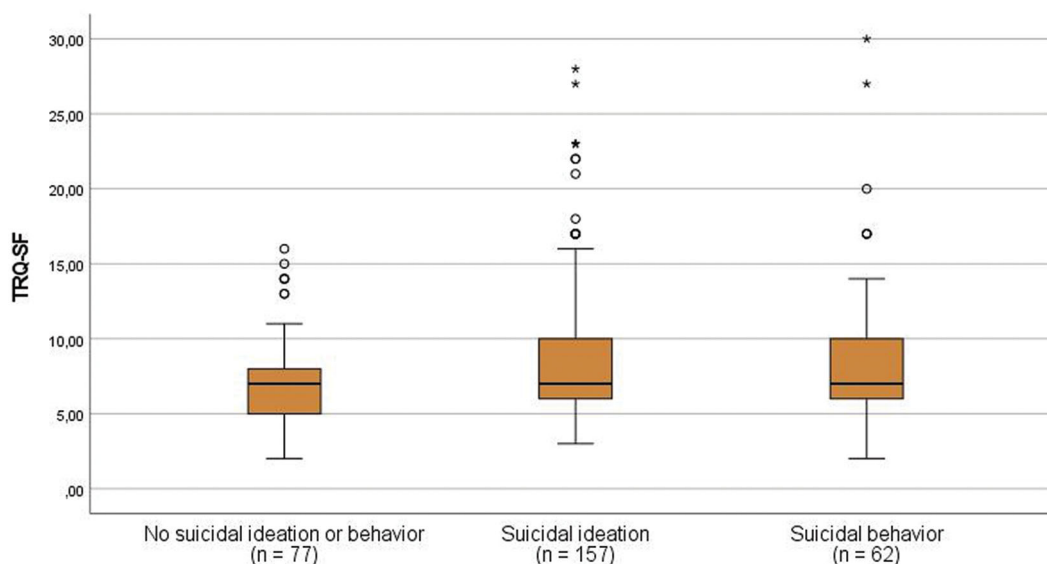


Figure 2. Box-plot of scores on Therapist Response Questionnaire- Short Form (TRQ-SF) according to groups of no suicidal ideation or behavior, suicidal ideation, and suicidal behavior ($n = 296$).

Table 4. Logistic regression analysis of age, sex, diagnosis, Suicide Trigger Scale-Short Form^a (STS-SF) and Therapist Response Questionnaire-Short Form (TRQ-SF) on suicidal ideation (no/yes; at intake or within past month prior to admission ($N = 308$)).

	χ^2 Model (p)	Nagelkerke R Square	b	S.E	Wald	Sig	Exp (B)	95% CI Exp(B)
Step 1	76.53 (<.001)	.32						
Age			-.01	.01	1.62	.203	.99	[.97, 1.01]
Sex (OR for men)			-.24	.32	.57	.449	.79	[.42, 1.46]
Depressive disorders			1.41	.41	11.69	.0006	4.11	[1.83, 9.24]
Bipolar affective disorder, current episode depression ^b			.69	.56	1.52	.218	2.00	[.66, 6.04]
Disorders due to use of alcohol			1.71	.51	11.13	.0009	5.54	[2.03, 15.16]
Disorders due to substance use			.13	.44	.08	.778	1.13	[.48, 2.70]
Reaction to severe stress, and adjustment disorders			1.91	.59	10.62	.0011	6.76	[2.14, 21.34]
EUPD ^c			1.22	.68	3.27	.071	3.40	[.90, 12.82]
STS-SF ^a			.099	.03	14.59	.0001	1.10	[1.05, 1.16]
TRQ-SF			.09	.04	4.03	.045	1.09	[1.002, 1.19]

Primary and/or secondary diagnosis of the listed diagnoses (no/yes). ORs presented are for 'yes'. See Table 1 for specific ICD-10 codes. χ^2 = Chi Square test of Model. Hosmer and Lemeshow test: Chi Square = 2.82, $p = .945$. ^aSix-item version of STS-SF. ^bIncludes current episode mixed (F31.6, $n = 5$). ^cEmotionally unstable personality disorder (F60.3).

disorders (F43). The association between SI and emotionally unstable personality disorder (F60.3) approached significance.

4. Discussion

Findings from the present study showed that higher self-reported scores of the SCS, as measured by the STS-SF, and higher therapist emotional responses, as measured by the TRQ-SF, were independently associated with a higher risk of patients recently having experienced suicidal ideation (27% of whom also having recently performed suicidal behavior). These findings are clinically meaningful, as the post-discharge suicide risk among patients with suicidal ideation or behavior is significantly elevated, even compared to that of other patients in need of psychiatric admission [38].

Our finding that patients with suicidal ideation have more severe symptoms of the SCS is interesting, as the STS-SF items do not contain any mention of suicidal ideation or behavior. Rather, it reflects symptoms of a clinical state best described by a sense of entrapment: the perception of having no escape from one's present circumstances. To the

extent that recent suicidal ideation is associated with near-term suicide risk, and 27% of our patients with suicidal ideation also had recent suicidal behavior, this finding highlights the importance of assessing patients' acute cognitive-emotional state in evaluating imminent suicide risk. This is in line with prior research showing an association between SCS symptoms and future suicide attempts [11] plus the mediating effect of such symptoms on the association between long-term risk factors and suicidal behavior [39].

The finding that therapist emotional response is associated with pre-admission suicidal ideation is also in line with past research showing clinician emotional response as both correlated with suicidal ideation [21] and contributory to clinicians' treatment decisions [19,20]. Prior research has indicated that TRQ-SF scores are, to a certain degree, clinician dependent [21,40]. Barzilay et al. [21] showed that TRQ-SF scores were associated with therapist factors, such as state anxiety. Such clinician factors have not been explored in the current study and further research could thus be of great clinical significance. As clinicians' emotional responses might possibly be associated with aspects of treatment [41], they

merit further investigation. Of note the TRQ-SF was completed in the context of the specialist's first encounter with the patient, thus measuring a form of 'instant countertransference' [40,42], more typically encountered in inpatient and emergency room settings, rather than in the context of a longer relationship more typical in outpatient treatment. Thus, it is unclear how such responses may differ from that assessed here. Nonetheless, we have reason to believe that 'instant countertransference' is clinically informative in acute and emergency setting. In a study on clinicians emotional responses performed in Canada by Michaud et al. [40], the clinician's scores on the TRQ-SF were based upon the first clinical encounter with the patient, and thus comparable to the present study. In the study by Michaud, TRQ-SF scores were used as the outcome measure and also showed an association between patients' SI and the TRQ-SF.

The psychiatric disorders associated with SI included depressive disorders, reaction to severe stress, and adjustment disorders (F43), and disorders due to use of alcohol. The diagnosis of emotionally unstable personality disorder approached significance. This is in line with prior research demonstrating the risk or frequency of suicidal behavior related to such disorders [34,35,43–45]. A prior study by Baldessarini et al. [46] indicated that a composite measure of affective temperaments was significantly associated with lifetime suicide risk also when controlling for the presence of major affective disorders. In the current study we did not include a measure of affective temperaments. In future research, the role of the state risk factors investigated in the current study could thus be explored in relation to more enduring temperament types.

The preliminary inspection of scores on the STS-SF and TRQ-SF for patients having performed different types of suicidal behavior, as defined by the C-SSRS [27], showed minor differences between patients with suicidal ideation and behavior. In the current study, suicidal ideation was measured as a dichotomous variable, thus limiting the ability to detect potential differences in scores associated with different forms (e.g. severity) of suicidal ideation. However, as the patients participating in this study were in need of admission to an acute psychiatric department, it is possible that the severity of suicidal ideation among these patients were generally higher compared to that of patients in outpatient units, thus potentially resulting in more similar scores across categories of suicidal ideation and behavior.

Regarding MARIS modules, the Cronbach alphas reported in this study were comparable to those reported in prior research for both the STS-SF [7,9] and the TRQ-SF [7]. The low Cronbach's alphas for modules SOQ-SF and SCARS were also comparable to those previously reported [7,9].

Among the patients participating in this study, many confirmed that they had experienced symptoms of the SCS, as measured by the STS-SF, during the 'last couple of days'. Entrapment has been described as a central characteristic of the SCS [10,11]. The findings on the high rates of feelings of entrapment in this sample are in line with findings from a meta-analysis by Siddaway and colleagues [47], demonstrating strong associations between entrapment and depression,

anxiety problems, post-traumatic stress disorder, and suicidality, respectively.

To our knowledge, this study presents the first PCA on the STS-SF scale. The PCA of the original eight STS-SF items indicated one component comprised of six items. These items correspond to a six-item subscale identified by Yaseen et al. [28] in a study on the full STS. Yaseen et al. [28] reported that an exploratory principal axis factor analysis using Varimax rotation of this six-item subscale resulted in a two-factor solution. The two items concerning entrapment, referred to by Yaseen et al. [28] as 'frantic hopelessness', loaded on one factor and the remaining four items, referred to by Yaseen et al. as 'ruminative flooding', loaded on the second factor.

In accordance with the findings on the component structure of the TRQ-SF in this study, prior studies have also demonstrated TRQ-SF as a reliable one-factor scale [21]. However, while demonstrating a reliable one-factor solution for the TRQ-SF, the study by Barzilay et al. [21] also indicated a somewhat better three-factor solution, later used in the study by Rogers [9]. This three-factor solution is not corresponding to the two-component solution found in the current study, and further studies on this scale should thus continue to explore the component structure of the TRQ-SF.

4.1. Limitations

Certain limitations concerning the study should be considered. A first limitation is the use of retrospective data on suicidal ideation and behavior based on chart-reviews for the investigation of concurrent validity. Although a time-frame of one month prior to admission is in line with past research exploring the concurrent associations between the MARIS questionnaire and measures of suicidal thoughts and behaviors [7], the questionnaire is assumed to measure acute risk of suicide. Future studies should therefore attempt to use even more narrow time frames to explore this association.

Based on the design of the current study, the TRQ-SF was answered in relation to the assessment by specialist. Although the emotional responses from clinicians would most likely be based on a first clinical assessment, i.e. an 'instant' countertransference response [40,42], we did not control for any prior clinical encounters between the specific clinician and the patient. Also, whether scores on TRQ-SF were dependent on differences between clinicians, as indicated by prior research [21,40], was not explored in the present study and should be taken into consideration in future studies using the TRQ-SF.

Also, past suicidal ideation and behavior have limitations as risk factors for future death by suicide [18]. The predictive validity of the two MARIS modules for death by suicide have therefore yet to be established and further studies should continue to explore the STS-SF and the TRQ-SF in prospective studies.

Another limitation relates to the lack of an outpatient sample. An exclusively inpatient sample might have represented a highly homogenous group in terms of scores on the STS-SF and the TRQ-SF, potentially making differences

more challenging to detect, as evident by the subsample results presented by Calati et al. [7].

A final comment concerns the use of data on suicidal ideation and behavior from medical charts. As such, these measures rely on information not necessarily exclusively from the patient themselves, but possibly also from family or other health care professionals involved in the admission process. The fact that the information on suicidal ideation and behavior might not be exclusively self-report could be seen as a limitation. However, findings from a national survey have demonstrated that in a sample from the general population, perhaps as expected, among people that had experienced and disclosed suicidal thoughts, the highest percentage of disclosure was towards family or friends [48]. Using information from charts (and multiple informants) might therefore have increased the reliability of the information on suicidal ideation compared to exclusively relying on self-report. Additional strengths of the current study include replication of the earlier findings on the MARIS questionnaire in an entirely independent sample outside the US, where the initial studies were performed. Also, patients in need of psychiatric admission comprise a high-risk group [38], and concurrent validity with this population could thus have high clinical utility.

Conclusion

Findings from the present study showed that for patients recently having experienced suicidal ideation (and many with co-occurring suicidal behavior), the self-reported scores of the SCS, as measured by the STS-SF, and therapists' emotional responses, as measured by the TRQ-SF, were higher than for those without. Neither the STS-SF nor the TRQ-SF directly address suicidal ideation or behavior. The association between these measures and recent SI indicated by this study provide support of an approach to suicide risk assessment that is independent of SI, rather focusing on the current affective and mental state of the patient. This is a distinct advantage of the MARIS as many patients at high risk of suicide deny suicidal ideation [18]. In sum, these two MARIS modules may offer brief and easy to administer tools for suicide risk assessment for use in combination with extant procedures in high-risk clinical settings. Findings from this study are consistent with findings from studies in the U.S suggesting a two-module format of the MARIS instrument for future use.

Acknowledgments

The authors thanks Professor Igor Galynker at Carl Icahn School of Medicine, Mount Sinai/Mount Sinai Beth Israel for discussions in relation to study design and review of the manuscript. The authors also thanks Professor Jan Scott for discussions in relations to the study and to Kamilla Medås for help with data collection.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by The Liaison Committee for Education, Research and Innovation in Central Norway (Samarbeidsorganet) and The Joint Research Committee between St. Olavs hospital and the Faculty of Medicine and Health Sciences, NTNU (FFU). The funding sources had no involvement in the research project or in the writing of this article.

ORCID

Stian Solem  <http://orcid.org/0000-0002-6942-2645>
 Øyvind Salvesen  <http://orcid.org/0000-0002-6145-8109>
 Odin Hjemdal  <http://orcid.org/0000-0002-6430-2345>

References

- [1] Prestmo A, Høyen K, Vaaler AE, et al. Mortality Among patients discharged From an acute psychiatric department: a 5-Year prospective study. *Front Psychiatry*. 2020;11:816.
- [2] Qin P, Nordentoft M. Suicide risk in relation to psychiatric hospitalization: evidence based on longitudinal registers. *Arch Gen Psychiatry*. 2005;62(4):427–432.
- [3] Glenn CR, Nock MK. Improving the short-term prediction of suicidal behavior. *Am J Prev Med*. 2014;47(3 Suppl 2):S176–S80.
- [4] Large M, Sharma S, Cannon E, et al. Risk factors for suicide within a year of discharge from psychiatric hospital: a systematic Meta-analysis. *Aust N Z J Psychiatry*. 2011;45(8):619–628.
- [5] Madsen T, Erlangsen A, Nordentoft M. Risk estimates and risk factors related to psychiatric inpatient Suicide-An overview. *IJERPH*. 2017;14(3):253.
- [6] Goodwin FK. Preventing inpatient suicide. *J Clin Psychiatry*. 2003; 64(1):12–13.
- [7] Calati R, Cohen LJ, Schuck A, et al. The modular assessment of risk for imminent suicide (MARIS): A validation study of a novel tool for suicide risk assessment. *J Affect Disord*. 2020;263: 121–128.
- [8] Hawes M, Yaseen Z, Briggs J, et al. The modular assessment of risk for imminent suicide (MARIS): A proof of concept for a multi-informant tool for evaluation of short-term suicide risk. *Compr Psychiatry*. 2017;72:88–96.
- [9] Rogers ML, Vespa A, Bloch-Elkouby S, et al. Validity of the modular assessment of risk for imminent suicide in predicting short-term suicidality. *Acta Psychiatr Scand*. 2021;144(6):563–577.
- [10] Galynker I. The suicidal crisis. Clinical guide to the assessment of imminent suicide risk. New York (NY): Oxford University Press; 2017.
- [11] Yaseen ZS, Hawes M, Barzilay S, et al. Predictive validity of proposed diagnostic criteria for the suicide crisis syndrome: an acute presuicidal state. *Suicide Life Threat Behav*. 2019;49(4):1124–1135.
- [12] Levi-Belz Y, Gvion Y, Grisaru S, et al. When the pain becomes unbearable: case-control study of mental pain characteristics Among medically serious suicide attempters. *Arch Suicide Res*. 2018;22(3):380–393.
- [13] Tucker RP, Michaels MS, Rogers ML, et al. Construct validity of a proposed new diagnostic entity: Acute suicidal affective disturbance (ASAD). *J Affect Disord*. 2016;189:365–378.
- [14] Rogers ML, Galynker I, Yaseen Z, et al. An overview and comparison of two proposed Suicide-Specific diagnoses: acute suicidal affective disturbance and suicide crisis syndrome. *Psychiatr Ann*. 2017;47(8):416–420.
- [15] Cohen LJ, Gorman B, Briggs J, et al. The suicidal narrative and its relationship to the suicide crisis syndrome and recent suicidal behavior. *Suicide Life Threat Behav*. 2019;49(2):413–422.
- [16] Bloch-Elkouby S, Barzilay S, Gorman BS, et al. The revised suicide crisis inventory (SCI-2): validation and assessment of prospective

- suicidal outcomes at one month follow-up. *J Affect Disord.* 2021; 295:1280–1291.
- [17] Cohen LJ, Mokhtar R, Richards J, et al. The Narrative-Crisis model of suicide and its prediction of near-term suicide risk. *Suicide Life Threat Behav.* 2021;52(2):231–243.
- [18] Busch KA, Fawcett J, Jacobs DG. Clinical correlates of inpatient suicide. *J Clin Psychiatry.* 2003;64(1):14–19.
- [19] Barzilay S, Yaseen ZS, Hawes M, et al. Determinants and predictive value of clinician assessment of Short-Term suicide risk. *Suicide Life Threat Behav.* 2019;49(2):614–626.
- [20] Waern M, Kaiser N, Renberg ES. Psychiatrists' experiences of suicide assessment. *BMC Psychiatry.* 2016;16(1):440.
- [21] Barzilay S, Yaseen ZS, Hawes M, et al. Emotional responses to suicidal patients: Factor structure, construct, and predictive validity of the therapist response Questionnaire-Suicide form. *Front Psychiatry.* 2018;9(104):104.
- [22] Galynker I, Yaseen ZS, Briggs J, et al. Attitudes of acceptability and lack of condemnation toward suicide may be predictive of post-discharge suicide attempts. *BMC Psychiatry.* 2015;15:87.
- [23] Høyen KS, Solem S, Cohen LJ, et al. Non-disclosure of suicidal ideation in psychiatric inpatients: Rates and correlates. *Death Stud.* 2021;46(8):1823–1831.
- [24] World Health Organization. The ICD-10 classification of mental and behavioural disorders: Diagnostic criteria for research. Geneva: World Health Organization; 1993.
- [25] World Health Organization. International statistical classification of diseases and related health problems 10th-Revision (ICD-10). Geneva: World Health Organization; 1992.
- [26] Nasjonale retningslinjer for forebygging av selvmord i psykisk helsevern. [National guidelines for the prevention of suicide in mental health care]. (IS-1511). Oslo: Norwegian Directorate of Health and Social Affairs; 2008.
- [27] Posner K, Brown GK, Stanley B, et al. The Columbia-Suicide severity rating scale: initial validity and internal consistency findings from three multisite studies with adolescents and adults. *Am J Psychiatry.* 2011;168(12):1266–1277.
- [28] Yaseen ZS, Kopeykina I, Gutkovich Z, et al. Predictive validity of the suicide trigger scale (STS-3) for post-discharge suicide attempt in high-risk psychiatric inpatients. *PLoS One.* 2014;9(1):e86768.
- [29] Betan E, Heim AK, Zittel Conklin C, et al. Countertransference phenomena and personality pathology in clinical practice: an empirical investigation. *Am J Psychiatry.* 2005;162(5):890–898.
- [30] Horvath AO, Greenberg LS. Development and validation of the working alliance inventory. *J Couns Psychol.* 1989;36(2):223–233.
- [31] Yaseen ZS, Galynker I, Cohen LJ, et al. Clinicians' conflicting emotional responses to high suicide-risk patients-Association with short-term suicide behaviors: a prospective pilot study. *Compr Psychiatry.* 2017;76:69–78.
- [32] Domino G, Moore D, Westlake L, et al. Attitudes toward suicide: a factor analytic approach. *J Clin Psychol.* 1982;38(2):257–262.
- [33] Bolton JM, Spiwak R, Sareen J. Predicting suicide attempts with the SAD PERSONS scale: a longitudinal analysis. *J Clin Psychiatry.* 2012;73(06):e735–41–e741.
- [34] Black DW, Blum N, Pfohl B, et al. Suicidal behavior in borderline personality disorder: prevalence, risk factors, prediction, and prevention. *J Pers Disord.* 2004;18(3):226–239.
- [35] Sokero TP, Melartin TK, Rytsälä HJ, et al. Suicidal ideation and attempts among psychiatric patients with major depressive disorder. *J Clin Psychiatry.* 2003;64(9):1094–1100.
- [36] Wines JD, Jr., Saitz R, Horton NJ, et al. Suicidal behavior, drug use and depressive symptoms after detoxification: a 2-year prospective study. *Drug Alcohol Depend.* 2004;76(Suppl):S21–S9.
- [37] Pompili M, Innamorati M, Raja M, et al. Suicide risk in depression and bipolar disorder: Do impulsiveness-aggressiveness and pharmacotherapy predict suicidal intent? *Neuropsychiatr Dis Treat.* 2008;4(1):247–255.
- [38] Chung DT, Ryan CJ, Hadzi-Pavlovic D, et al. Suicide rates After discharge From psychiatric facilities: a systematic review and Meta-analysis. *JAMA Psychiatry.* 2017;74(7):694–702.
- [39] Cohen LJ, Ardalan F, Yaseen Z, et al. Suicide crisis syndrome mediates the relationship Between long-term risk factors and lifetime suicidal phenomena. *Suicide Life Threat Behav.* 2018;48(5): 613–623.
- [40] Michaud L, Ligier F, Bourquin C, et al. Differences and similarities in instant countertransference towards patients with suicidal ideation and personality disorders. *J Affect Disord.* 2020;265: 669–678.
- [41] Westra HA, Aviram A, Connors L, et al. Therapist emotional reactions and client resistance in cognitive behavioral therapy. *Psychotherapy (Chic).* 2012;49(2):163–172.
- [42] Moukaddam N, Andry T, Cao J, et al. Instant countertransference affects assessment and treatment recommendations for depression in patients openly professing religious faith. *Spiritual Clin Pract.* 2019;6(2):100–109.
- [43] Darvishi N, Farhadi M, Haghtalab T, et al. Alcohol-related risk of suicidal ideation, suicide attempt, and completed suicide: a Meta-analysis. *PLoS One.* 2015;10(5):e0126870.
- [44] Kryzhanovskaya L, Canterbury R. Suicidal behavior in patients with adjustment disorders. *Crisis.* 2001;22(3):125–131.
- [45] Dong M, Zeng L-N, Lu L, et al. Prevalence of suicide attempt in individuals with major depressive disorder: a Meta-analysis of observational surveys. *Psychol Med.* 2019;49(10):1691–1704.
- [46] Baldessarini RJ, Innamorati M, Erbutto D, et al. Differential associations of affective temperaments and diagnosis of major affective disorders with suicidal behavior. *J Affect Disord.* 2017;210:19–21.
- [47] Siddaway AP, Taylor PJ, Wood AM, et al. A Meta-analysis of perceptions of defeat and entrapment in depression, anxiety problems, posttraumatic stress disorder, and suicidality. *J Affect Disord.* 2015;184:149–159.
- [48] Encrenaz G, Kovess-Masféty V, Gilbert F, et al. Lifetime risk of suicidal behaviors and communication to a health professional about suicidal ideation. Results from a large survey of the french adult population. *Crisis.* 2012;33(3):127–136.