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Supplementary Material

Article Title: A Comparison of Suicide Risk Scales in Predicting Repeat Suicide Attempt and Suicide: A Clinical Cohort Study

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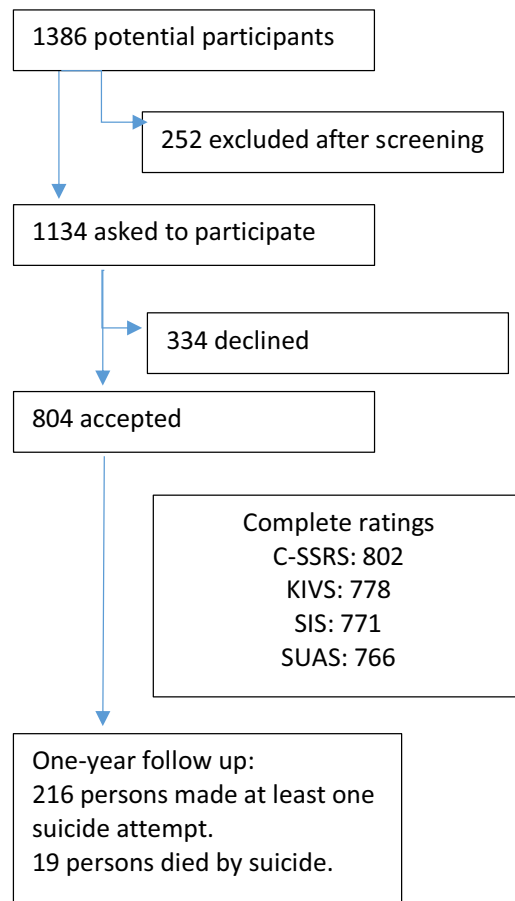
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Supplementary Figure 1.

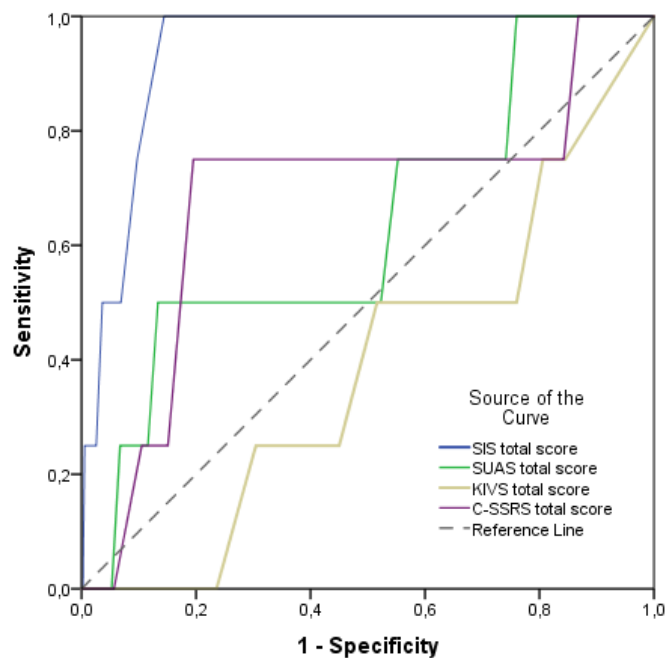
Flowchart of the study including number of complete ratings per instrument.



Abbreviations: C-SSRS: Columbia-Suicide Severity Rating Scale. KIVS: Karolinska Interpersonal Violence Scale. SIS: Suicide Intent Scale. SUAS: Suicide Assessment Scale.

Supplementary Figure 2.

Total sums of SIS, SUAS, KIVS and C-SSRS as predictors of suicide during 3 month follow-up.



SIS: AUC=0.94, 95% CI: 0.89 – 0.99, $p = .002$

SUAS: AUC= 0.63, 95% CI: 0.35 – 0.91, $p = .36$

KIVS: AUC=0.39, 95% CI: 0.13 – 0.64, $p = .43$

C-SSRS: AUC=0.68, 95% CI: 0.37 – 0.99, $p = .22$

Abbreviations: AUC=Area under the curve, CI=confidence interval, C-SSRS=Columbia-Suicide Severity Rating Scale, KIVS=Karolinska Interpersonal Violence Scale, SIS=Suicide Intent Scale, SUAS=Suicide Assessment Scale.

Supplementary Table 1.
The items of the Suicide Intent Scale.

The objective items		The subjective items	
Isolation	Final acts in anticipation of death	Alleged purpose of attempt	Attitude toward living/dying
Timing	Active preparation for attempt	Expectation of fatality	Conception of medical reversibility
Precautions against discovery	Suicide note	Conception of lethality of method	Degree of premeditation
Acting to get help during/after attempt	Overt communication of suicidal intent	Seriousness of attempt	

All items scored 0–2.

Supplementary Table 2.
The items of the Suicide Assessment Scale.

Sadness, despondency	Resourcefulness (difficulties in problem-solving)	Impulsivity	Suicidal thoughts
Hostility	Perceived loss of control	Low self-esteem	Purpose of suicide
Lack of energy	Physical tension	Hopelessness	Wish to die
Hypersensitivity	Anxiety	Inability to feel emotions	Lack of reason for living
Emotional withdrawal	Somatic concern	Poor frustration tolerance	Suicidal actions

All items scored 0–4

Supplementary Table 3.
The Items of the Karolinska Interpersonal Violence Scale.

Item score	Expression of violence, 6–14 years	Expression of violence, ≥15 years	Exposure to violence, 6–14 years	Exposure to violence, ≥15 years
1	Occasional fights, did not cause worry	Occasionally slapped a child. Occasionally shoved an adult.	Occasional slaps.	Threatened or exposed to low-level violence once
2	Often been in fights.	Hit a child on occasion. Fought when drunk.	Bullied for short period. Occasional corporal punishment	Beaten by partner. Threatened with object
3	Often started fights. Hit someone who had surrendered.	Hit partner or other adult when sober. Frequent fighting when drunk.	Often bullied. Hit by parent	Robbed, frequently beaten by partner. Threatened with weapon
4	Initiated bullying. Often hit others with fists or object	Instance of sexual assault. Repeated battering of child/partner.	Bullied throughout childhood. Beaten by schoolmates. Regularly beaten by parent. Sexual abuse	Raped. Battered.
5	Caused serious physical injury. Violent behaviour led to intervention from social services.	Caused severe bodily harm or death. Repeated sexual assault.	Repeated exposure to violence and/or sexual abuse that led to bodily harm	Repeatedly raped or battered, seriously injured

Supplementary Table 4.
The items of the Columbia-Suicide Severity Rating Scale

Ideation severity, 0–5	Ideation intensity, scored for most severe suicidal thoughts, 0–25	Behaviours*	Medical severity of actual suicide attempt, 0-5**
No suicidal ideation		Actual suicide attempt	No or very minor injury
Wish to be dead	Frequency, 1–5	Interrupted suicide attempt	Minor injury
Thoughts of suicide	Duration, 1–5	Aborted suicide attempt	Moderate injury, medical attention needed
Thoughts of suicide with specific method, no intent to act	Controllability, 0–5 where 0=does not attempt to control thoughts	Non-suicidal self-injury	Moderately severe injury, medical hospitalization required
Thoughts of suicide, with specific method and some intent to act	Deterrents, 0–5 where 0=does not apply	Preparations for suicide attempt	Severe injury, medical intensive care required
Thoughts of suicide, specific method, plan and intent.	Reasons for ideation, 0–5 where 0=does not apply		Death

*for actual, interrupted and aborted suicide attempts, both their occurrence (yes/no) and number of attempts are registered. Since the number of attempts can take on a wide range of values as participants may report hundreds of past attempts, we chose to trichotomize numbers of actual,

aborted and interrupted suicide attempts: 0 (no attempts), 1 (1-2 attempts) and 2 (three or more attempts) and applied these values when calculating the total score. Non-suicidal self injury and preparations are scored yes/no, without the number of events.

**if this item is scored zero, the potential lethality is scored 0–2.

Supplementary Table 5.

Comparison between participants with and without complete ratings on the suicide risk scales.

	Total number of participants: 804		
	Complete ratings, included in analysis n=746	Incomplete ratings, excluded from analysis n=58	<i>p</i>
Mean age, years	38.2	40.5	0.3
Sex, % women	67.6%	63.8%	0.6
Index attempt, % SA/NSSI	82.7%/17.3%	84.5%/15.5%	0.7
Suicide attempt during follow-up n (%)	201 (26.9%)	15 (25.9%)	0.9
Suicide during follow-up n (%)	17 (2.3%)	2 (3.4%)	0.6

Abbreviations: NSSI=non-suicidal self-injury, SA=suicide attempt. T-test was used to test difference in means. The χ^2 -test was used to test differences in proportions.

Supplementary Table 6.

Baseline ratings on all instruments and measures of internal consistency and interrater reliability.

	SIS	SUAS	KIVS	C-SSRS
Valid ratings, <i>n</i>	771	766	778	802
Missing, <i>n</i>	33	38	26	2
Potential range	0 – 30	0 – 80	0 – 20	0 – 42
Actual range	1 – 30	3 – 75	0 – 20	1 – 42
Mean	15.0	44.5	6.1	25.8
Median	15.0	46.0	6.0	27.0
Percentiles 25	11	36	3	23
50	15	46	6	27
75	19	54	9	30
Cronbach α	0.78	0.87	0.64	0.55 ^a
Intra-class coefficient; 95% CI	0.94; 0.85 – 0.9, $p < .001$	0.99; 0.97 – 1.00, $p < .001$	0.92, 0.82 – 0.97, $p < .001$	-
PABAK	-	-	-	0.63 – 0.95 for SI 0.70 - 0.90 for SB

^afor items CS1 – 5 b, CS7 -11b, Cs12b, 14b, 15b, 17b, and 19b. Abbreviations: CI=confidence interval,

C-SSRS=Columbia-Suicide Severity Rating Scale, KIVS=Karolinska Interpersonal Violence Scale,

PABAK=prevalence-adjusted, bias-adjusted kappa, SB=suicidal behaviours, SI=suicidal ideation,

SIS=Suicide Intent Scale, SUAS=Suicide Assessment Scale.

Supplementary Table 7.

Raw numbers for the optimal cut-offs in the present sample.

Optimal cut-offs in the present sample, suicide attempt											
Suicide attempt, 3 months	SUAS ≥ 47		C-SSRS ≥ 27		Suicide attempt, 12 months	SUAS ≥ 37		KIVS ≥ 6		C-SSRS ≥ 26	
	No attempt	Suicide attempt	No attempt	Suicide attempt		No attempt	Suicide attempt	No attempt	Suicide attempt	No attempt	Suicide attempt
Low risk	349	43	354	23	Low risk	165	34	292	86	269	54
High risk	309	65	334	91	High risk	396	171	279	121	318	161
<i>Total</i>	<i>658</i>	<i>108</i>	<i>688</i>	<i>114</i>	<i>Total</i>	<i>561</i>	<i>205</i>	<i>571</i>	<i>207</i>	<i>587</i>	<i>215</i>
Optimal cut-offs in the present sample, suicide											
Suicide, 3 months	SIS ≥ 21				Suicide, 12 months	SIS ≥ 17					
	Alive		Dead by suicide			Alive		Dead by suicide			
Low risk	628		0		Low risk	436		5			
High risk	139		4		High risk	317		13			
<i>Total</i>	<i>767</i>		<i>4</i>		<i>Total</i>	<i>753</i>		<i>18</i>			

Abbreviations: C-SSRS: Columbia-Suicide Severity Rating Scale. KIVS: Karolinska Interpersonal Violence Scale. SIS: Suicide Intent Scale. SUAS: Suicide Assessment Scale.

Supplementary Table 8.

Raw numbers for cut-offs suggested from previous studies.

Suggested cut-offs from previous studies, suicide attempt							
Suicide attempt, 3 months	SUAS >30		Suicide attempt, 12 months	SUAS >30		C-SSRS ≥23	
	No attempt	Suicide attempt		No attempt	Suicide attempt	No attempt	Suicide attempt
Low risk	108	6	Low risk	98	16	166	30
High risk	550	102	High risk	463	189	421	185
<i>Total</i>	<i>658</i>	<i>108</i>	<i>Total</i>	<i>561</i>	<i>205</i>	<i>587</i>	<i>215</i>
Suggested cut-offs from previous studies, suicide							
Suicide, 12 months	SIS ≥16		SUAS ≥39		KIVS ≥6		
	Alive	Dead by suicide	Alive	Dead by suicide	Alive	Dead by suicide	Alive
Low risk	392	5	230	7	368	10	392
High risk	361	13	518	11	391	9	361
<i>Total</i>	<i>753</i>	<i>18</i>	<i>748</i>	<i>18</i>	<i>759</i>	<i>19</i>	<i>753</i>

Abbreviations: C-SSRS: Columbia-Suicide Severity Rating Scale. KIVS: Karolinska Interpersonal Violence Scale. SIS: Suicide Intent Scale. SUAS: Suicide Assessment Scale.