

Table DS1 Search strategies

Review area	Search construction	Study design	Database/ date range
Risk and protective factors	[(Self-harm terms) AND (Risk and protective factor terms) AND (Observational study filter)]	Observational studies	CINAHL, EMBASE, MEDLINE, PsycINFO [inception of databases up to February 2014]
	*[(Self-harm terms) AND (SR study filter)]	Systematic reviews	CINAHL, EMBASE, MEDLINE, PsycINFO [January 1995 up to February 2014]
Risk assessment, needs assessment and psychosocial assessment	[(Self-harm terms) AND (Risk assessment, needs assessment, psychosocial assessment terms) AND (Observational study filter)] [Self-harm terms) AND (predictive/repetition terms) AND (diagnostic accuracy filter terms) AND (named assessment tool terms)]	Observational studies	CINAHL, EMBASE, MEDLINE, PsycINFO [inception of databases up to February 2014]
	*[(Self-harm terms) AND (SR study filter)]	N/A – no study design limit Systematic reviews	CINAHL, EMBASE, MEDLINE, PsycINFO [inception of databases up to February 2014] CINAHL, EMBASE, MEDLINE, PsycINFO [January 1995 up to February 2014]
Population search terms <i>a) Self-harm – population search terms</i> MEDLINE – Ovid SP interface			

1. overdose/ or self-injurious behavior/ or self mutilation/ or suicidal ideation/ or suicide/ or suicide, attempted/
2. (autoaggress\$ or auto aggress\$ or automutilat\$ or auto mutilat\$ or cutt\$ or overdose\$ or (self adj2 cut\$) or selfdestruct\$ or self destruct\$ or selfharm\$ or self harm\$ or selfimmolat\$ or self immolat\$ or selfinflict\$ or self inflict\$ or selfinjur\$ or self injur\$ or selfmutilat\$ or self mutilat\$ or selfpoison\$ or self poison\$ or suicid\$).ti,ab.
3. or/1-2

Risk and protective factors

MEDLINE - Ovid SP interface

What are the risk and protective factors (internal and external) amongst people who self-harm that predict outcomes?

1. risk factors/
2. (risk\$ adj2 relative).ti,ab.
3. ((predict\$ or protect\$ or risk\$) adj2 (associat\$ or attribute\$ or correlate\$ or determinant\$ or factor\$ or variable\$)).ti,ab.
4. or/1-3
5. ((predict\$ or risk\$) adj2 (ongoing or recur\$ or re cur\$ or reattempt\$ or re attempt\$ or recur\$ or repeat\$ or repetit\$)).ti,ab.
6. prospective repetit\$.ti,ab.
7. ((associat\$ or attribute\$ or correlate\$ or determinant\$ or factor\$ or variable\$) adj8 (ongoing or recur\$ or re cur\$ or reattempt\$ or re attempt\$ or recur\$ or repeat\$ or repetit\$) adj8 (autoaggress\$ or aggress\$ or automutilat\$ or cutt\$ or destruct\$ or dsh or episode\$ or harm\$ or immolat\$ or inflict\$ or injur\$ or mutilat\$ or overdose\$ or (self adj2 cut\$) or poison\$ or selfdestruct\$ or selfharm\$ or selfimmolat\$ or selfinflict\$ or selfinjur\$ or selfmutilat\$ or selfpoison\$ or sh or suicid\$)).ti,ab.
8. or/5-7
9. resilience, psychological/
10. (buffer\$ or cope\$ or recovery or resilien\$).ti,ab.
11. or/9-10
12. or/4,8,11

Risk assessment, needs assessment and psychosocial assessment

MEDLINE - Ovid SP interface

For people who self-harm, does formal risk assessment, needs assessment and psychosocial assessment improve outcomes?

1. (checklist/ or geriatric assessment/ or interview/ or interview, psychological/ or mass screening/ or nursing assessment/ or "outcome and process

assessment (health care)"/ or "outcome assessment (health care)"/ or exp personality assessment/ or exp psychiatric status rating scales/ or exp psychological tests/ or questionnaires/)

2. (form\$1 or checklist\$ or check list\$ or index\$ or indices or interview\$ or instrument\$ or inventor\$ or item\$1 or measure\$ or psychometric\$ or psychometric\$ or question\$ or scale\$ or score\$ or scoring or self report\$ or subscale\$ or test\$ or tool\$).ti,ab.

3. 1 or 2

4. "predictive value of tests"/ or recurrence/ or risk\$.hw.

5. (predict\$ or ongoing or recur\$ or re cur\$ or reattempt\$ or re attempt\$ or recur\$ or repeat\$ or repetit\$ or risk\$).ti,ab.

6. 4 or 5

7. area under curve/ or exp sensitivity and specificity/

8. ((area under adj2 curve) or auc or (diagnostic adj2 odds ratio\$) or ((false or true) adj negative) or ((false or true) adj positive) or (likelihood adj3 ratio\$) or ((pretest or pre test or posttest or post test) adj2 probabilit\$) or (predict\$ adj3 value\$) or receiver operating characteristic or (roc adj2 (analy\$ or curv\$ or plot\$)) or sensitiv\$ or specificit\$).tw.

9. 7 or 8

10. and/3,6,9

11. needs assessment/ or risk assessment/

12. ((client\$ or clinical\$ or consumer\$ or need\$ or patient\$ or psychiatric or psychological or psychosocial or psycho social or risk or service user\$ or therapeutic) adj2 (assess\$ or evaluat\$)).ti,ab.

13. (((assess\$ or predict\$ or risk\$) adj2 (form\$1 or checklist\$ or check list\$ or index\$ or indices or interview\$ or instrument\$ or inventor\$ or item\$1 or measure\$ or psychometric\$ or question\$ or scale\$ or score\$ or scoring or self report\$ or subscale\$ or test\$ or tool\$)) or (comprehensive adj (assessment\$ or evaluation\$))).ti,ab.

14. (adult suicidal ideation questionnaire or asiq or (beck depression inventory or bdi) or (beck hopelessness scale or bhs) or ((beck scale adj2 suicide ideation) or bsi) or ((brief reasons adj2 living inventory) or brfl) or (brief symptom inventory or bsi) or ((college student reasons adj2 living inventory) or csrli or csr li) or ((edinburgh risk adj2 repetition scale) or errs) or (firestone assessment adj2 self-destructive thoughts) or ((global clinical assessment) or gca) or ((hamilton depression rating scale) or hdrs) or ((hamilton rating scale adj2 depression) or hamd or ham d or hrsd or hrs d) or ((intersept scale adj2 suicidal thinking) or isst) or lethality scale\$ or (life satisfaction scale or ls scale) or lifetime parasuicide count or ((linehan reasons adj2 living inventory) or lrfl) or ((manchester self harm rule) or mshr) or ((modified scale adj2 suicide ideation) or mssi) or (parasuicide history interview or phi) or ((quiz adj2 depression adj2 suicide adj2 later life) or qdssl) or (reasons adj2 living inventory) or ((reasons adj2 living scale adj2 older adult questionnaire) or rfloa or rfl oa) or ((reasons adj2 living scale adj2 younger adult questionnaire) or rflya or rfl ya) or risk rescue rating or ((scale adj2 suicide ideation) or ssi) or (self-inflicted injury severity form or siisf or sii sf) or (self-monitoring suicide ideation scale or smsis of sms is) or (suicidal behaviors interview or sbi) or (suicidal ideation questionnaire or siq) or (suicidal ideation screening questionnaire or sisq or sis q) or (suicidal intent scale or sis) or ((suicide

assessment scale) or suas) or (suicide behaviors questionnaire or sbq) or (suicide intervention response inventory or siri) or (suicide opinion questionnaire or soq) or (suicide potential rating scale or suicide lethality scale or spls or spl s) or (suicide probability scale or sps) or (suicide status form or ssf) or ((symptom driven diagnostic system adj2 primary care) or sddspc or sdds pc) or ((positive adj2 negative suicide ideation inventory) or pansi)).ti,ab.

15. or/11-14

16. and/6,9,14

17. or/10,15-16

Systematic review search filter – adapted from a filter designed by the Health Information Research Unit of McMaster University, Ontario, Canada.

MEDLINE – Ovid SP interface

1. meta-analysis/ or meta-analysis as topic/

2. meta-analysis.pt.

3. ((evidence or quantitative\$ or systematic\$) adj2 (overview or review)).ti,ab.

4. (((bibliographic or electronic) adj database\$) or bids or cochrane or embase or index medicus or isi citation or medline or psyclit or psychlit or pubmed or scisearch or science citation or (web adj2 science)).ti,ab. and review.pt.

5. (metaanal\$ or meta anal\$ or metasynthes\$ or meta synthes\$).ti,ab.

6. ((pool\$ or combined or combining) adj2 (data or trials or studies or results)).ti,ab.

7. or/1-6

Observational study filter – developed in-house.

MEDLINE – Ovid SP interface

1. case-control studies/

2. cohort studies/

3. cross-sectional studies/

4. epidemiologic studies/

5. follow-up studies/

6. longitudinal studies/

7. prospective studies/

8. retrospective studies/

9. (cohort\$1 or cross section\$ or crosssection\$ or followup\$ or follow up\$ or followed or longitudinal\$ or prospective\$ or retrospective\$).ti,ab.

10. (case adj2 (control\$ or series)).ti,ab.

11. or/1-10

Table DS2 Included study characteristics of risk factor review

Study ID	Country	Study length, years	<i>n</i>	Age	% female	Prior history of self-harm before index episode presented at hospital, %	Recruitment setting
Bergen <i>et al</i> (2012) ²⁴	UK	8	30202	Median: 27 female, 31 male	58.6	46	A&E
Bjornaas <i>et al</i> (2009) ²⁵	Norway	20	946	Median 31	51	Unclear	Patients discharged from hospital following index episode of self-harm
Chen <i>et al</i> (2011) ²⁶	Taiwan	6	1083	Mean 37	63	Unclear	Hospital record of self-harm
Chen <i>et al</i> (2013) ²⁷	Taiwan – Taoyuan	1.5	3299	Mean 36	70.6	Unclear	Self-harm records at hospital A&E
Cooper <i>et al</i> (2005) ⁸	UK	4	7968	Median 30	57	51	A&E
Holley <i>et al</i> (1998) ²⁸	Canada	13	876	35–39% age 21–30	62	Unclear	Hospital admission following self-harm
Kuo <i>et al</i> (2012) ²⁹	Taiwan – Taipei	5	7601	Median: 34 male, 32 female	69.5	Unclear	Self-harm records at hospital A&E
Madsen <i>et al</i> (2013) ³⁰	Denmark	4	17257	Median 40	55	32	Patients admitted with self-harm
Miller <i>et al</i> (2013) ³¹	USA	5	3600	50% age 15–34 38% age 35–54 12% age ≥ 55	58.4	0 (in 3 years prior to index attempt (inclusion criteria))	Patients discharged from hospital following index episode of self-harm
Monnin <i>et al</i> (2012) ³²	France	2	273	Mean 37.6	69	59%	Psychiatric emergency unit
Nordentoft <i>et al</i> (1993) ³³	Denmark	10	974	Age 15 or above	63	Unclear	Presented to hospital following self-harm
Suokas <i>et al</i> (2001) ³⁴	Finland	13–14	1018	54% age below 35	53	48	A&E

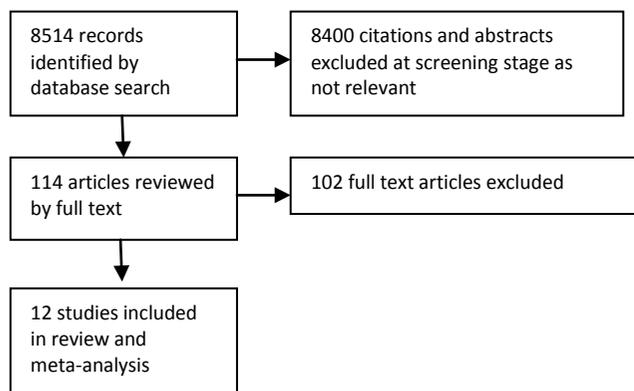
A&E, accident and emergency.

Table DS3 Included study characteristics for risk scales review

Study ID	Population	Follow-up (months)	N used in analysis	Mean age (years)	% of female	Reference standard
Beck <i>et al</i> (1985) ³⁷	Psychiatric in-patients	60	165	34	54	Deaths judged as suicide by the Philadelphia (or other) medical examiner's office/coroner's office
Beck <i>et al</i> (1999) ³⁸	Psychiatric out-patients	180	SSI 3701, BHS	39	57	Suicide ascertained by National Death Index (computer database)
Harriss & Hawton (2005) ³⁹	People presenting to hospital following self-harm	62.4	2489	Not reported	58	Office of National Statistics for England and Wales, the Central Services Agency in Northern Ireland and the General Register Office for Scotland.
Nimeus <i>et al</i> (1997) ⁴⁰	Patients being treated in a psychiatric intensive care unit following suicide attempt	4	212	38	57	Completed suicide ascertained by Lund Department of Forensic Medicine
Nimeus <i>et al</i> (2002) ⁴¹	Patients being treated in a psychiatric intensive care unit following suicide attempt	54 (mean)	555	39	63	Completed suicide ascertained by Lund Department of Forensic Medicine and Swedish National Central Bureau of Statistics
Stefansson <i>et al</i> (2012) ⁴²	Individuals who have attempted suicide	120	80	37	57	Suicide ascertained by Cause of death register; National Board of Health and Welfare in Sweden
Suominen <i>et al</i> (2004) ⁴³	Individuals who have attempted suicide	144	224	36	56	Data obtained from national statistics

Figure DS1 Study flow chart for (a) risk factors review and (b) risk scales review

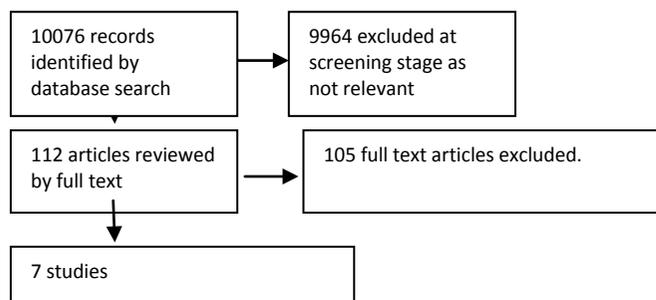
(a)



102 full text risk factors articles excluded for the following reasons:

- 18% case-control/ retrospective studies
- 40% population does not fit our criteria (general/ with a specific mental health disorder/ older adults/ adolescents in school/ with intellectual disabilities/ with ideation only)
- 4% mixed population (general plus those with self harm attempt)
- 24% outcomes are not in the format that's extractable or outcomes are not about repeated self-harm (eg/high levels of hostility and hopelessness scores associate with repetition)
- 5% paper not in English or a language that researchers can find resource to translate
- 9% other reasons (couldn't find full text: conference abstract: unrelated)

(b)



105 full text risk scales articles excluded for the following reasons:

- 26% were excluded due to reference standard not meeting our criteria ('no data on completed suicide')
- 56% excluded for not providing relevant data to be included in the review ('not possible to populate 2x2 table')
- 18% excluded as not a relevant population

Table DS4 Adjusted confounds and risk of bias assessment in risk factors studies

Risk factors	Outcome	Depressive symptoms	Previous history of	Age	Gender	Previous psychiatric treatment	Suicide intent	Method of self-harm	Schizophrenia	Physical health problem	Anxiety	Substance abuse	Psychiatric diagnosis	Marital status	Employment	Socioeconomic status	Education	Living alone	Others
History of previous self-harm	<p>Suicide following self-harm</p> <p>Adjusted hazard ratio 1.68 [1.38, 2.05] (I²=19%)</p> <p>4 studies, N=32467 (NORDENTOFT1993, SUOKAS2001, BERGEN2012, MONNIN2012)</p>	K=1, N=273	N/A	K=2; N=31174	K=2; N=31220	K=2; N=31220	K=1; N=1018		K=1; N=273	K=1; N=1080 (Somatic disease)	K=1; N=273	K=1; N=273	K=1; N=30202		K=1; N=30202			K=1; N=974	<p>adjusted for psychosocial assessment in last episode, relationship problem, financial problem, bereavement problem, consequence of previous abuse (K=1, N=30202)</p> <p>adjusted for smokers, follow up care, current treatment (K=1, N=273)</p>
<p><i>Risk of bias:</i></p> <p><i>Study sample – All studies met criteria (represents population of interest regard to key characteristics, sufficient to limit potential bias to results?)</i></p> <p><i>Loss to follow-up – None met criteria (whether loss to follow up is unrelated to key characteristics, sufficient to limit potential bias)</i></p> <p><i>Putative risk factor - All studies met criteria (adequately measured in study participants)</i></p> <p><i>Outcome of interest - All studies met criteria (adequately measured in study participants, sufficient to limit bias)</i></p> <p><i>Potential confound- None met criteria (important ones are appropriately accounted for, limiting potential bias with respect to prognostic factor of interest)</i></p> <p><i>Statistical analysis- All studies met criteria (is appropriate for design of study, limiting potential for presentation of invalid results)</i></p>																			

Risk factors	Outcome	Depressive symptoms	Previous history of	Age	Gender	Previous psychiatric	Suicide intent	Method of self-harm	Schizophrenia	Physical health	Anxiety	Substance abuse	Psychiatric diagnosis	Marital status	Employment	Socioeconomic status	Education	Living alone	Others
Psychiatric history (past history, treatments, admissions from records, psychiatric outpatient)	<p>Suicide following self-harm</p> <p>Adjusted hazard ratio 1.27 [0.94, 1.73] (I²= 55%)</p> <p>4 studies, N=56573 (COOPER2005, HOLLEY1998, BERGEN2012, MADSEN2013)</p>		K=3; N=48605	K=1; N=30202	K=2; N=31078	N/A	K=1; N=7968 (avoided discovery)	K=2, N=8844	K=1, 17527	K=2, N=8844		K=4	K=3, N=48605	K=2; N=47729	K=2; N=18403	K=2; N=47729	K=1, N=17527	K=2; N=25495 (not living with close relatives)	<p>adjusted for psychosocial assessment in last episode, relationship problem, financial problem, bereavement problem, consequence of previous abuse (K=1, N=30202)</p> <p>adjusted for clinical covariates-admission diagnosis, secondary diagnosis, personality disorder, private psychiatrist, private psychologist (K=1, N=17527)</p>
<p><i>Risk of bias:</i></p> <p><i>Study sample – 3 of 4 studies met criteria</i></p> <p><i>Loss to follow-up – None met criteria</i></p> <p><i>Putative risk factor - 3 of 4 studies met criteria</i></p> <p><i>Outcome of interest – All studies met criteria</i></p> <p><i>Potential confound- 1 of 4 studies met criteria</i></p> <p><i>Statistical analysis- All studies met criteria</i></p>																			

Risk factors	Outcome	Depressive symptoms	Previous history of	Age	Gender	Previous psychiatric treatment	Suicide intent	Method of self-harm	Schizophrenia	Physical health problem	Anxiety	Substance abuse	Psychiatric diagnosis	Marital status	Employment	Socioeconomic status	Education	Living alone	Others
Alcohol misuse	<p>Suicide following self-harm</p> <p>Adjusted hazard ratio 1.63 [1.00, 2.65] (I²=53%)</p> <p>3 studies, N=9187 (COOPER2005, BJORNAAS2009, MONNIN2012)</p>	K=1; N=273	K=1; N=273		K=1; N=946	K=2, N=8914	K=2, N=8914	K=1; N=7968 (self-cutting)	K=1; N=273	K=1; N=7968	K=1; N=273	N/A				K=1; N=946		K=1; N=7968 (not living close with relatives)	<p>Level of consciousness (K=1; N=946)</p> <p>adjusted for smokers, follow up care, current treatment (K=1, N=273)</p>
<p><i>Risk of bias:</i></p> <p><i>Study sample – All studies met criteria</i></p> <p><i>Loss to follow-up - None met criteria</i></p> <p><i>Putative risk factor – 2 of 3 studies met criteria</i></p> <p><i>Outcome of interest – All studies met criteria</i></p> <p><i>Potential confound- 1 of 3 studies met criteria</i></p> <p><i>Statistical analysis- All studies met criteria</i></p>																			

Risk factors	Outcome	Depressive symptoms	Previous history of	Age	Gender	Previous psychiatric treatment	Suicide intent	Method of self-harm	Schizophrenia	Physical health problem	Anxiety	Substance abuse	Psychiatric diagnosis	Marital status	Employment	Socioeconomic status	Education	Living alone	Others	
Physical health problems (chronic illness, physical comorbidity)	<p>Suicide following self-harm</p> <p>Adjusted hazard ratio 1.99 [1.16, 3.43] (I²=29%)</p> <p>3 studies, N=12143 (HOLLEY1998, COOPER2005, CHEN2013)</p>		K=1; N=876	K=1, N=3299	K=2; N=4175	K=2, N=8844	K=1; N=7968 (avoided discovery)	K=3 (violent method, cutting)				K=2 (alcohol misuse/ as a factor) N=8844 K=2; N=4175		K=1; N=876	K=1, N=3299	K=1; N=876			K=1; N=7968 (not living close with relatives)	Adjusted for residence (urban vs rural); reasons for self harm – problem with romantic relation; problem with family (K=1, N=3299)
<p><i>Risk of bias:</i></p> <p><i>Study sample – 2 of 3 studies met criteria</i></p> <p><i>Loss to follow-up – None met criteria</i></p> <p><i>Putative risk factor - 2 of 3 studies met criteria</i></p> <p><i>Outcome of interest – All studies met criteria</i></p> <p><i>Potential confound- 1 of 3 studies met criteria</i></p> <p><i>Statistical analysis- All studies met criteria</i></p>																				

Risk factors	Outcome	Depressive symptoms	Previous history of	Age	Gender	Previous psychiatric treatment	Suicide intent	Method of self-harm	Schizophrenia	Physical health problem	Anxiety	Substance abuse	Psychiatric diagnosis	Marital status	Employment	Socioeconomic status	Education	Living alone	Others
Gender – Male	<p>Suicide following self-harm</p> <p>Adjusted hazard ratio 2.05 [1.70, 2.46] (I²=0%)</p> <p>5 studies, N=43200 (SUOKAS2001, CHEN2011, BERGEN2012, KUO2012, CHEN2013)</p>		K=2; N=31220	K=4; N=42182		K=2; N=31220	K=1; N=1080	K=3; N=11980		K=2; N=1080 (Somatic disease)=3299		K=1; N=30202 (alcohol in last episode)	K=2; N= 33501		K=2; N= 33501				<p>adjusted for psychosocial assessment in last episode, relationship problem, financial problem, bereavement problem, consequence of previous abuse (K=1, N=30202)</p> <p>Adjusted for residence (urban vs rural); reasons for self-harm – problem with romantic relation; problem with family (K=1, N=3299)</p>
<p><i>Risk of bias:</i></p> <p><i>Study sample – All studies met criteria</i></p> <p><i>Loss to follow-up – 1 of 4 studies met criteria</i></p> <p><i>Putative risk factor – All studies met criteria</i></p> <p><i>Outcome of interest – All studies met criteria</i></p> <p><i>Potential confound- None met criteria</i></p> <p><i>Statistical analysis- All studies met criteria</i></p>																			

Risk factors	Outcome	Depressive symptoms	Previous history of	Age	Gender	Previous psychiatric treatment	Suicide intent	Method of self-harm	Schizophrenia	Physical health problem	Anxiety	Substance abuse	Psychiatric diagnosis	Marital status	Employment	Socioeconomic status	Education	Living alone	Others
Suicide intent	Suicide following self-harm Adjusted hazard ratio 2.70 [1.91, 3.81] (I ² =0%) 3 studies, N=9932 (SUOKAS2001, COOPER2005, BJORNAAS2009)	K=1, N=1018			K=2, N=1964	K=3	N/A			K=2, N=8986		K=2, N=8914				K=1, N=946		K=1, N=7968	adjusted for level of consciousness (K=1, N=946)
<p><i>Risk of bias:</i></p> <p><i>Study sample – All studies met criteria</i></p> <p><i>Loss to follow-up – None met criteria</i></p> <p><i>Putative risk factor – 1 of 3 studies met criteria</i></p> <p><i>Outcome of interest – All studies met criteria</i></p> <p><i>Potential confound- 1 of 3 met criteria</i></p> <p><i>Statistical analysis- All studies met criteria</i></p>																			

Risk factors	Outcome	Depressive symptoms	Previous history of	Age	Gender	Previous psychiatric treatment	Suicide intent	Method of self-harm	Schizophrenia	Physical health problem	Anxiety	Substance abuse	Psychiatric diagnosis	Marital status	Employment	Socioeconomic status	Education	Living alone	Others	
Unemployment	<p>Suicide following self-harm</p> <p>Adjusted hazard ratio 1.08 [0.65, 1.8] (I²=71%)</p> <p>3 study, N=51028 (BERGEN2012, CHEN2013, MADSEN2013)</p>			K=2, N=47729	K=2, N=33501	K=2, N=33501	K=2, N=47729		K=1, N=3299	K=1, N=17527	K=1, N=3299		K=2, N=47729	K=3	K=1, N=17527	N/A	K=1, N=17527	K=1, N=17527	K=1, N=17527	<p>Adjusted for psychosocial assessment in last episode, relationship problem, financial problem, bereavement problem, consequence of previous abuse (K=1, N=30202)</p> <p>Adjusted for Residence (urban vs rural); Reasons for self-harm – problem with romantic relation; problem with family (K=1, N=3299)</p> <p>Adjusted for clinical covariates-admission diagnosis, secondary diagnosis, personality disorder, private psychiatrist, private psychologist, psychiatric outpatient (K=1, N=17527)</p>
<p><i>Risk of bias:</i></p> <p><i>Study sample – All studies met criteria</i></p> <p><i>Loss to follow-up – None met criteria</i></p> <p><i>Putative risk factor – 1 of 3 studies met criteria</i></p> <p><i>Outcome of interest – All studies met criteria</i></p> <p><i>Potential confound- None met criteria</i></p> <p><i>Statistical analysis- All studies met criteria</i></p>																				

Table DS5 Risk assessment tools and description

<i>Scale</i>	<i>Description</i>
<i>Beck Hopelessness Scale (BHS)</i>	<i>Measures the extent of positive and negative beliefs about the future. Self-report questionnaire consisting of 20 items.</i>
<i>Scale for Suicide Ideation (SSI)</i>	<i>Measures the severity of suicide ideation. Clinician rated questionnaire consisting of 19 items.</i>
<i>Suicide Intent Scale (SIS)</i>	<i>Measures the level of intent to complete suicide in a person who has already attempted it. Interviewed by clinician consisting of 15 items.</i>

Online supplement DS1 PRISMA statement

<i>PRISMA statement</i>			
Section/topic	Item No	Checklist item	Reported
Title			
Title	1	Identify the report as a systematic review, meta-analysis, or both	✓
Abstract			
Structured summary	2	Provide a structured summary including, as applicable, background, objectives, data sources, study eligibility criteria, participants, interventions, study appraisal and synthesis methods, results, limitations, conclusions and implications of key findings, systematic review registration number	✓
Introduction			
Rationale	3	Describe the rationale for the review in the context of what is already known	✓
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS)	✓
Methods			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (such as web address), and, if available, provide registration information including registration number	✓
Eligibility criteria	6	Specify study characteristics (such as PICOS, length of follow-up) and report characteristics (such as years considered, language, publication status) used as criteria for eligibility, giving rationale	✓
Information sources	7	Describe all information sources (such as databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched	✓
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated	✓ and online Table DS1
Study selection	9	State the process for selecting studies (that is, screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis)	✓
Data collection process	10	Describe method of data extraction from reports (such as piloted forms, independently, in duplicate) and any processes for obtaining and confirming data	✓

		from investigators	
Data items	11	List and define all variables for which data were sought (such as PICOS, funding sources) and any assumptions and simplifications made	✓
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis	✓
Summary measures	13	State the principal summary measures (such as risk ratio, difference in means).	✓
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (such as I ² statistic) for each meta-analysis	✓
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (such as publication bias, selective reporting within studies)	✓
Additional analyses	16	Describe methods of additional analyses (such as sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified	n/a
Results			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram	✓ and online Fig. DS1(a) and (b)
Study characteristics	18	For each study, present characteristics for which data were extracted (such as study size, PICOS, follow-up period) and provide the citations	✓ and online Tables DS2 and DS3
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome-level assessment (see item 12).	Table 2 and online Table DS4
Results of individual studies	20	For all outcomes considered (benefits or harms), present for each study (a) simple summary data for each intervention group and (b) effect estimates and confidence intervals, ideally with a forest plot	✓
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency	✓ and Tables 1 and 2, Fig. 1 and 2
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see item 15)	✓
Additional analysis	23	Give results of additional analyses, if done (such as sensitivity or subgroup analyses, meta-regression) (see item 16)	n/a

Discussion			
Summary of evidence	24	Summarise the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (such as health care providers, users, and policy makers)	✓
Limitations	25	Discuss limitations at study and outcome level (such as risk of bias), and at review level (such as incomplete retrieval of identified research, reporting bias)	✓
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research	✓
Funding			
Funding	27	Describe sources of funding for the systematic review and other support (such as supply of data) and role of funders for the systematic review	✓

✓, included in main text.