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Psychosocial Interventions for Self-Harm-Related Outcomes in Adolescents: A Systematic Review and Network Meta-Analysis

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ADMINISTRATIVE INFORMATION

Support - No.

Review Stage at time of this submission - The review has not yet started.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 5 July 2026 and was last updated on 5 July 2026.

INTRODUCTION

Review question / Objective This systematic review and network meta-analysis aims to evaluate and compare the effectiveness and acceptability of psychosocial interventions for self-harm-related outcomes in adolescents.
The review question is: among adolescents with self-harm-related outcomes, what is the comparative effectiveness of different psychosocial interventions in reducing self-harm, repeated self-harm, non-suicidal self-injury, suicidal ideation, suicide attempts, and other related outcomes?
The population will include adolescents with self-harm-related outcomes, including self-harm, non-suicidal self-injury, deliberate self-harm, suicidal ideation, suicide attempts, or repeated self-harm. Eligible interventions will include psychosocial interventions such as cognitive-behavioural therapy, dialectical behaviour therapy, family-based interventions, problem-solving therapy, counselling, mentalization-based therapy, safety planning, brief contact interventions, and structured digital or internet-based psychological interventions. Comparators may include treatment as usual, usual care, enhanced usual care, wait-list control, no intervention, attention control, or other active psychosocial interventions. Eligible studies will primarily include randomized controlled trials.
Using a network meta-analysis framework, this review will compare and rank eligible psychosocial interventions and control conditions. The findings may help identify which psychosocial interventions are more likely to reduce self-harm-related outcomes and improve acceptability among adolescents.

Rationale Self-harm and suicide-related behaviours among adolescents are major public health concerns and are associated with psychological distress, repeated self-harm, impaired functioning, and increased risk of suicide. Various psychosocial interventions, including cognitive-behavioural therapy, dialectical behaviour therapy, family-based interventions, problem-solving therapy, counselling, safety planning, and digital psychological interventions,

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have been evaluated for reducing self-harm-related outcomes in adolescents. However, the existing evidence remains fragmented, and conventional pairwise meta-analyses may be limited when multiple interventions and comparator conditions need to be compared simultaneously.

A network meta-analysis can integrate both direct and indirect evidence and may allow comparison and ranking of different psychosocial interventions. This review will therefore synthesize randomized evidence on psychosocial interventions for self-harm-related outcomes in adolescents. The findings may help clarify which interventions are more effective and acceptable, and may provide evidence for clinical decision-making, guideline development, and future research in adolescent self-harm and suicide prevention.

Condition being studied The condition or domain being studied is adolescent self-harm and related suicide-related outcomes. This includes self-harm, deliberate self-harm, non-suicidal self-injury, repeated self-harm, suicidal ideation, and suicide attempts among adolescents. The review focuses on the adolescent mental health and suicide/self-harm prevention domain.

METHODS

Search strategy We will search electronic bibliographic databases from inception to the final search date, including PubMed, Embase, PsycINFO, the Cochrane Central Register of Controlled Trials, Web of Science Core Collection, Scopus, and Chinese databases such as CNKI, Wanfang, VIP, and SinoMed where applicable. Trial registries, including ClinicalTrials.gov, the WHO International Clinical Trials Registry Platform, ISRCTN, and the Chinese Clinical Trial Registry, will also be searched to identify completed, ongoing, or unpublished studies.

The search strategy will combine terms related to adolescents, self-harm-related outcomes, psychosocial interventions, and randomized studies. Search terms will include, but will not be limited to: adolescent, youth, teenager, young people, self-harm, deliberate self-harm, non-suicidal self-injury, NSSI, self-injurious behavior, suicidal ideation, suicide attempt, suicidality, psychosocial intervention, psychological intervention, psychotherapy, cognitive-behavioural therapy, dialectical behaviour therapy, family therapy, problem-solving therapy, counselling, safety planning, randomized controlled trial, randomised trial, and controlled trial. Search strategies will be adapted for each database using appropriate controlled vocabulary and free-text terms.

Reference lists of included studies and relevant reviews will be screened, and forward citation searching will be conducted where possible. Study authors may be contacted for missing or unclear information. The review will include studies published in English or Chinese. No restrictions on publication year will be applied.

Participant or population The population will include adolescents with self-harm-related outcomes, including self-harm, deliberate self-harm, non-suicidal self-injury, repeated self-harm, suicidal ideation, or suicide attempts. Participants will generally be aged 10–19 years or be described by the original studies as adolescents. Studies including mixed-age samples will be eligible if adolescent-specific data are reported separately or if the majority of participants are adolescents. Participants may be recruited from clinical, emergency department, inpatient, outpatient, school, community, digital, or other relevant settings.

Intervention Eligible interventions will include psychosocial interventions designed to reduce self-harm-related outcomes among adolescents. These may include cognitive-behavioural therapy, dialectical behaviour therapy, family-based interventions, problem-solving therapy, interpersonal therapy, mentalization-based therapy, counselling, safety planning, brief contact interventions, school-based or community-based psychosocial programmes, and structured digital or internet-based psychological interventions. Interventions may be delivered individually, in groups, with families, face-to-face, remotely, or in blended formats, provided that they include a clear psychosocial or psychological therapeutic component.

Comparator Eligible comparators will include treatment as usual, usual care, enhanced usual care, wait-list control, no intervention, attention control, placebo-like psychological control, supportive counselling, psychoeducation, or other active psychosocial interventions. Studies comparing two or more eligible psychosocial interventions will also be included. For the network meta-analysis, intervention and comparator nodes will be defined according to intervention content, clinical relevance, and similarity of treatment components.

Study designs to be included Randomized controlled trials will be included, including individually randomized trials, cluster-randomized trials, and multi-arm randomized trials. Studies must compare at least one eligible psychosocial

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intervention with another eligible intervention or a control condition and report relevant self-harm-related outcomes in adolescents.

Eligibility criteria Studies will be eligible if they include adolescents with self-harm-related outcomes, evaluate an eligible psychosocial intervention, include a comparator or control condition, and report at least one relevant outcome, such as self-harm, repeated self-harm, non-suicidal self-injury, suicidal ideation, suicide attempts, acceptability, or related psychological outcomes. Studies will be excluded if they focus exclusively on adults, preschool children, or non-adolescent populations; if adolescent-specific data cannot be extracted from mixed-age samples; if they evaluate pharmacological or biological interventions alone; or if they are non-randomized studies, uncontrolled studies, single-arm studies, case reports, case series, qualitative studies, reviews, protocols, editorials, letters, or conference abstracts without sufficient outcome data. Studies published in English or Chinese will be considered.

Information sources We will search PubMed, Embase, PsycINFO, the Cochrane Central Register of Controlled Trials, Web of Science Core Collection, Scopus, CNKI, Wanfang, VIP, and SinoMed from inception to the final search date. Trial registries, including ClinicalTrials.gov, the WHO International Clinical Trials Registry Platform, ISRCTN, and the Chinese Clinical Trial Registry, will also be searched. Additional sources will include reference lists of included studies and relevant reviews, forward citation searching, conference proceedings, dissertation or thesis databases where applicable, and contact with study authors for missing or unclear information.

Main outcome(s) The main outcomes will be self-harm-related outcomes among adolescents, including self-harm, repeated self-harm, non-suicidal self-injury, suicidal ideation, and suicide attempts. Outcomes may be measured as dichotomous outcomes, such as occurrence or recurrence during follow-up, or as continuous outcomes, such as frequency, severity, or validated scale scores. Data will be extracted at post-intervention and follow-up time points. For dichotomous outcomes, odds ratios or risk ratios with 95% confidence intervals will be used. For continuous outcomes, mean differences or standardized mean differences with 95% confidence intervals will be calculated.

Additional outcome(s) Additional outcomes will include intervention acceptability, treatment adherence, all-cause dropout, adverse events, depressive symptoms, anxiety symptoms, hopelessness, psychological distress, quality of life, functional outcomes, emergency department visits, psychiatric hospitalization, and use of crisis or mental health services. Acceptability will primarily be assessed using all-cause dropout or treatment discontinuation. Outcomes will be extracted at post-intervention and follow-up time points where available.

Data management Search records will be imported into reference management software for deduplication. Two reviewers will independently screen titles, abstracts, and full texts according to predefined eligibility criteria. Data will be extracted independently by two reviewers using a standardized data extraction form. Extracted information will include study characteristics, participant characteristics, intervention and comparator details, outcome data, follow-up duration, and risk-of-bias information. Disagreements will be resolved through discussion or consultation with a third reviewer. Reasons for full-text exclusion will be recorded.

Quality assessment / Risk of bias analysis The risk of bias of included randomized controlled trials will be assessed independently by two reviewers using the Cochrane Risk of Bias tool version 2. The assessment will consider bias arising from the randomization process, deviations from intended interventions, missing outcome data, measurement of outcomes, and selection of the reported result. Disagreements will be resolved through discussion or consultation with a third reviewer. When relevant information is unclear or unavailable, study authors will be contacted for clarification where possible.

Strategy of data synthesis We will first provide a narrative synthesis of the characteristics of included studies, participants, interventions, comparators, and outcomes. Where sufficient data are available, pairwise meta-analyses will be conducted for direct comparisons using random-effects models. A network meta-analysis will then be performed to compare and rank eligible psychosocial interventions and control conditions for self-harm-related outcomes in adolescents. Dichotomous outcomes will be synthesized using odds ratios or risk ratios with 95% confidence intervals, and continuous outcomes will be synthesized using mean differences or standardized mean differences with 95% confidence intervals. Statistical heterogeneity will be assessed using appropriate measures, and inconsistency between direct and indirect evidence will be examined where possible. Intervention rankings may be estimated using SUCRA values or

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P-scores. The certainty of evidence will be assessed using the GRADE framework and, where appropriate, the CINeMA approach for network meta-analysis.

Subgroup analysis If sufficient data are available, subgroup analyses or meta-regression analyses may be conducted according to intervention type, outcome type, comparator type, follow-up duration, delivery format, setting, age group, sex distribution, baseline severity, and risk-of-bias level. Potential subgroups may include cognitive-behavioural therapy, dialectical behaviour therapy, family-based interventions, problem-solving therapy, digital interventions, and other psychosocial interventions. These analyses will be interpreted cautiously because subgroup findings may be limited by the number of available studies and the distribution of intervention comparisons.

Sensitivity analysis Sensitivity analyses will be performed where sufficient data are available to examine the robustness of the findings. Planned sensitivity analyses may include excluding studies at high risk of bias, excluding cluster-randomized trials if adjustment for clustering is unclear, excluding studies with imputed or estimated data, excluding studies with mixed-age samples without clearly reported adolescent-specific data, and comparing results using different effect measures or model assumptions. Sensitivity analyses will also be used to assess the influence of individual studies or intervention nodes on the overall network estimates and intervention rankings.

Language restriction English and Chinese.

Country(ies) involved China.

Other relevant information This protocol has also been registered with PROSPERO for transparency and to avoid duplication. The PROSPERO registration number will be reported in the final manuscript. Any important amendments or deviations from the registered protocol will be documented and reported transparently.

Keywords self-harm; adolescents; psychosocial interventions; network meta-analysis; suicidal ideation; suicide attempt; non-suicidal self-injury.

Dissemination plans The findings of this systematic review and network meta-analysis will be submitted for publication in a peer-reviewed academic journal. Results may also be disseminated through academic conferences, research presentations, and evidence summaries for clinicians and researchers interested in adolescent self-harm and suicide prevention.

Contributions of each author

Author 1 - Zixiang Ye - Author 1 conceived the review, designed the protocol, developed the search strategy, and will contribute to study selection, data extraction, analysis, and manuscript drafting.
Email: 409314343@qq.com
Author 2 - Shuiqin Cao - Author 2 will contribute to study selection, data extraction, risk-of-bias assessment, interpretation of findings, and critical revision of the manuscript.
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