

Comparison of implicit self-esteem in individuals with elevated depressive symptoms and non-depressed controls: A meta-analysis

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Formal screening of search results against eligibility criteria.

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 2 December 2025 and was last updated on 2 December 2025.

INTRODUCTION

Review question / Objective Whether implicit self-esteem in individuals with elevated depressive symptoms differs from, or is comparable to, that of non-depressed individuals?

Rationale Previous studies have reported conflicting findings on whether implicit self-esteem in individuals with elevated depressive symptoms is comparable to, higher than, or lower than that of non-depressed individuals. This meta-analysis aims to clarify these inconsistencies by providing a comprehensive statistical synthesis.

Condition being studied Comparing the level of implicit self-esteem in individuals with enhanced depressive symptoms and non-depressed controls.

METHODS

Search strategy The search strategy will include two key concepts: “depression” and “implicit self-esteem”, while the latter will be searched using the separate terms “implicit” and “self-esteem”. Each key term will be expanded using relevant Medical Subject Headings (MeSH) and its commonly used alternatives in literature. For depression, additional terms such as “depressive disorder”, “major depressive disorder”, “dysthymic disorder”, and “dysphoria/dysphoric” will be included as stem terms, and their corresponding entry terms will be used in the search. For implicit, additional entry terms such as “unconscious”, “subconscious”, and “priming” will be included. The popular paradigms measuring implicit self-esteem, such as “implicit association”, “name letter preference”, “extrinsic affective simon task”, “stroop”, and “go/nogo” will also be included in the search terms. For self-esteem, additional entry terms such as “self-concept”, “self-worth”, “self-respect”, “self-liking”,

and “self-view” will be used. Terms within each concept will be combined using “OR”, and the three concepts will be linked using “AND”. To further reduce the risk of missing relevant studies, the reference lists of related reviews will also be screened manually.

For instance, in PubMed, the following search query will be created:

Title/Abstract=((“depression”[MeSH Terms] OR “Depressive Symptoms” OR “Emotional Depression” OR “depressive disorder”[MeSH Terms] OR (“Depression” AND “Endogenous”) OR (“Depression” AND “Unipolar”) OR “Depressive Syndrome” OR “Melancholia” OR (“Neurosis” AND “Depressive”) OR “Unipolar Depression” OR “Depressive Disorder, Major”[MeSH Terms] OR “Major Depressive Disorder” OR “Clinical Depression” OR (“Depression” AND “Involutional”) OR (“Melancholia” AND “Involutional”) OR (“Paraphrenia” AND “Involutional”) OR (“Psychosis” AND “Involutional”) OR “Dysthymic Disorder”[MeSH Terms] OR “Dysthymia” OR “Dysthymia and Chronic Depression” OR (“Neurotic Depression” AND “Persistent Depressive Disorder”) OR (“Persistent Depressive Disorder” AND “Dysthymia”) OR (“Dysphoria” AND “Depression”) OR (“Dysphoric” AND “Depression”)) AND (“Implicit” OR “Implicitness” OR “Unconscious” OR “Subconscious” OR “Priming” OR “Implicit Association” OR “Name Letter Preference” OR “Extrinsic Affective Simon Task” OR “Stroop” OR “Go/NoGo” OR “Go/No Go” OR “Go/No-Go”) AND (“self concept”[MeSH Terms] OR “Self-esteem” OR (“Self” AND “Esteem”) OR “Self-worth” OR “Self-liking” OR “Self-respect” OR “Self-regard” OR “Self-perception”))

The search will be limited to contemporary literature published within the past 25 years (i.e., since 2000) up to the date of the search (November 20, 2025); and articles published in English.

All returned records will be screened independently by two persons with a process to resolve differences, where another person's opinion will be consulted. The first round of the search will remove duplicate records across databases and roughly screen articles based on their titles and abstracts. A subsequent search will more thoroughly screen the articles based on their full texts.

Participant or population Included

Individuals with at least mild levels of depressive symptoms, clinical or non-clinical, at the time of each study. The depressive symptoms must be measured by professional tools, for example, the Beck Depression Inventory (BDI), the Depression

Anxiety Stress Scale (DASS), the Hamilton Depression Rating Scale (HAM-D), Diagnostic and Statistical Manual of Mental Disorders (DSM), or other relevant measures.

Excluded

If the individuals were categorized based on characteristics other than depressive symptoms. For instance, a study that grouped individuals by another primary diagnosis, such as schizophrenia or social anxiety disorder, with depressive symptoms considered as a secondary mental health feature would be excluded.

Intervention This meta-analysis does not involve intervention.

Comparator

Included

A non-depressed control group consisted of individuals who had few or no depressive symptoms at the time of each study. The depressive symptoms must be measured by professional tools, for example, the Beck Depression Inventory (BDI), the Depression Anxiety Stress Scale (DASS), the Hamilton Depression Rating Scale (HAM-D), or other relevant measures.

Study designs to be included Included: Between-subject design in which participants were mainly grouped based on depressive symptom levels; Studies must have involved investigation of implicit self-esteem, measured by behavioral paradigms such as the implicit association test, the name letter preference task, the go/no-go implicit association test, the extrinsic affective Simon task, or other behavioral paradigms. Excluded: Within-subject design or longitudinal studies where cross-sectional group comparison was not at all involved; Studies only involved explicit self-evaluation measures.

Eligibility criteria Inclusion: 1. Original empirical studies; 2. Contemporary literature published within the past 25 years (i.e., since 2000), up to the date of the search; 3. Studies involving human participants; 4. Articles published in English; 5. Studies assessing implicit self-esteem using behavioral paradigms; 6. Studies that included both individuals with currently elevated depressive symptoms and non-depressed controls, and that provided direct cross-sectional comparisons between these groups; 7. Longitudinal or follow-up studies that included cross-sectional comparisons at the baseline time point; 8. If implicit self-esteem was assessed before and after certain manipulations (e.g., mood induction) or interventions (e.g., therapy sessions), only the pre-

manipulation or pre-intervention assessment will be included;

9. And so on.

Exclusion: 1. Review articles or meta-analyses; 2. Studies that used only explicit measures (e.g., self-report questionnaires or other explicit self-evaluations) rather than implicit measures; 3. Studies that did not include a non-depressed control group or did not provide cross-sectional group comparisons (e.g., studies reporting only correlation analyses); 4. For longitudinal or follow-up studies, those in which no cross-sectional group comparison was conducted at baseline; 5. Studies in which implicit self-esteem was assessed only after manipulations (e.g., mood induction) or interventions (e.g., therapy sessions), with no pre-manipulation or pre-intervention data; 6. Studies with fewer than ten participants in any group; 7. Studies for which essential data (e.g., means, effect size, and so on) were not reported and could not be calculated from the available data, meanwhile the first or corresponding author did not provide the missing information within one month of contact; 8. And so on.

Information sources PubMed, Web of Science, MEDLINE, APA PsycInfo, PsycArticles, and Scopus.

Main outcome(s) The main outcomes will include accuracy, reaction time, standardized scores, responses (e.g., ratings), or other relevant behavioral indices corresponding to certain implicit self-esteem measuring paradigms.

Data management For the screening phase, all records will be stored in .xlsx files and will be managed and updated by the two authors responsible for screening. The file will include the search strategy, search links for each database, all records returned by the search, each screener's inclusion or exclusion decision for each record, and so on. The file can be shared among research team members without access restrictions, and it may be shared upon request with individuals outside the team after publication. The search strategy for each database will be made openly accessible after publication.

Quality assessment / Risk of bias analysis Data will be extracted by one person and checked by at least one other person. A third person's opinion will be consulted if disagreement occurs between the first two persons.

Authors will be asked to provide any required data not available in published reports.

Risk of bias will be assessed using the Risk of Bias Assessment Tool for Non-randomized Studies 2 (RoBANS 2).

Strategy of data synthesis The data synthesis and statistical analyses will be conducted using CMA or STATA, following standard statistical procedures for meta-analyses. For instance, the random-effects model will be used for all analyses. Continuous variables will be analyzed using random-effects model and will be expressed as standard mean differences (SMD). A 2-tailed P value of < 0.05 is set for statistical significance. Heterogeneity will be assessed using with χ^2 test and I^2 test, with $I^2 > 50\%$ being considered substantial. Publication bias will be assessed by visual estimate of funnel plot and by the Egger's test and Begg's test.

Subgroup analysis Depending on sample size and heterogeneity, the subgroup analysis aims to compare, for example, group difference across gender, clinical and non-clinical population, different type of implicit self-esteem measures, such as implicit association test, name letter preference task, go/no-go association task, and so on.

Sensitivity analysis Sensitivity will be evaluated through publication bias, subgroup analyses, or leave-one-out sensitivity analysis.

Language restriction English.

Country(ies) involved Finland, China.

Keywords Depression; Depressive symptoms; implicit self-esteem.

Dissemination plans The results of the meta-analysis will be published in English in a peer-reviewed academic journal.

Contributions of each author

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