

Mapping the Gaps: A Meta-Review of Systematic Reviews on Global Depression Prevalence and its Policy Implications

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Abstract

Introduction and Background: Depression is a leading cause of disability globally, yet understanding its prevalence remains fragmented. Despite increasing systematic reviews, synthesis across populations and regions is still limited. Background: Systematic Reviews and Meta-Analyses (SRMAs) on depression prevalence have proliferated in the last decade. However, methodological inconsistencies, limited geographic coverage, and a lack of policy focus restrict their utility for global strategy.

Purpose and Objectives: This first comprehensive meta-review of existing literature aims to identify gaps and to evaluate global/continental reach; assess methodological quality and policy alignment; highlight under represented regions and populations to inform future research and policy.

Methodology: Following PRISMA 2020, we systematically searched four databases (2014-2024). Included re-views met quality, scope, and reporting criteria; excluded single country, clinical only, non-English publications. A total of 36 SR-MAs was included.

Results: The findings show a strong continental skew: 55% of studies focus on Asia. Africa and Australia are grossly underrepresented. Most reviews focus on clinical populations, adolescents, or the elderly, neglecting vulnerable groups like informal workers, displaced people, and those facing economic shocks.

Recommendations and Conclusion: We recommend that future research should: Prioritize geographic inclusivity for underrepresented regions. Include broader populations, especially socially vulnerable groups. Align closely with public health goals. While the current evidence base offers insights, there is a need to bridge the gaps. Bridging these gaps is essential for equitable, data-driven policies meeting the depression needs of all communities, especially those often excluded.

Keywords: Continent, Depression, Global Health, Meta-Analyses, Policy Implications, Prevalence, Systematic Review

1. Introduction

“Depression is not a sign of weakness—it is a signal that something deep within needs attention, healing, and care.”

– Godwin Aipoh

Depression ranks among the leading causes of disability globally and significantly contributes to the overall burden of disease. According to the World Health Organization, approximately 280 million people experience depression globally, with wide disparities in prevalence across countries and demographic groups [1]. Although progress has been made in estimating the burden of depression, much of the evidence still comes from individual studies or first-level meta-analyses, which differ widely in methods, populations, and diagnostic tools. See references [2-5]. At least 21 million Americans experience a major depressive episode annually [6]. This figure emerges from a society that actively promotes open dialogue and help-seeking behavior regarding mental health. It is therefore plausible that the prevalence may be higher in contexts where depression and mental health concerns are not widely recognized as public or national issues. Depression represents a significant public health issue due to its association with emotional distress, increased healthcare costs, elevated suicide risk, and higher mortality from other health conditions [7,8].

The proliferation of Systematic Reviews and Meta Analyses (SRMAs) on depression prevalence has improved the evidence base for understanding regional and population specific burdens. However, the growing number and inconsistency of these SRMAs make it challenging for policymakers, researchers, and public health agencies to draw clear, actionable insights for global mental health planning. Importantly, no existing study has comprehensively synthesized these SRMAs to assess global coverage, methodological consistency, and policy-relevant gaps in depression prevalence research. A meta review also known as an umbrella review offers a useful way to evaluate the scope, quality, and relevance of existing SRMAs.

This approach allows researchers to detect common methodological trends, expose inconsistencies in findings, and identify under represented populations or regions. For example, while some SRMAs focus on adolescents or older adults in high-income countries, others examine patients with additional chronic or psychiatric conditions. Yet few reviews address vulnerable populations such as displaced persons, informal workers, or those affected by economic instability whose mental health outcomes are essential for shaping equitable health policies. While several studies report a rising trend in depression prevalence, it remains unclear whether this increase is consistent across countries, continents, and sub- groups mainly due to limited and uneven evidence [9,10].

Moreover, global disparities in research representation persist. Regions such as Sub-Saharan Africa, Australia, and Latin America remain underrepresented in both primary and secondary depression research, despite facing high unmet mental health needs [11,12]. These imbalances affect the design of effective,

context sensitive interventions, especially since global funding and resource allocation often rely on data synthesized from SRMAs.

This study offers three key contributions. First, it highlights major gaps in where and for whom depression prevalence is studied; most reviews focus on Asia and clinical groups, while regions like Sub Saharan Africa and vulnerable populations such as informal workers and displaced people are often overlooked. Second, it exposes wide variation in the tools and methods used across reviews, showing a need for more consistent and transparent research practices. Finally, it underscores the real-world consequences of these gaps: without more balanced and representative data, global depression health policies risk misallocating resources and missing those most in need.

2. Methods

2.1. Study Design

This study is a systematic meta-review, also known as an umbrella review, of Systematic Reviews and Meta Analyses (SRMAs) on the global prevalence of depression. We conducted this review in accordance with the PRISMA 2020 guidelines for systematic reviews [13]. We also followed established best practices for conducting and reporting meta reviews in the field of public health.

2.2. Search Strategy

A comprehensive literature search was conducted in four major databases: PubMed, Embase, Web of Science, and the Cochrane Library. The search window covered studies published between January 2014 and March 2024. We used Boolean operators to combine search terms such as “Depression”, “Systematic Review”, “Meta-Analysis”, “Global Burden” and “Prevalence”.

2.3. Eligibility Criteria

Inclusion criteria were based on the following conditions, with the requirement that at least one criterion be satisfied:

- **Study Design:** Only systematic reviews or meta-analyses synthesizing data on depression prevalence were included.
- **Publication Window:** Studies published between January 2014 and March 2024, to ensure up-to-date evidence.
- **Scope:** Included at least 20 primary studies, or if fewer offered a clear rationale for their inclusion.
- **Reporting:** Reported the number of included studies, described search strategies, and presented conclusions or policy-relevant insights.

In contrast, articles were excluded based on the following criteria:

- **Population:** Reviews that focused solely on a single country’s populations were excluded
- **Setting:** Reviews restricted to clinical settings (e.g., Hospitals, Specialized Clinics).
- **Focus:** Reviews that did not report prevalence estimates or focused solely on treatment efficacy.
- **Publication Date and Access:** Studies published before 2014 or not available in full text.
- **Language:** Non-English publications.

2.4. Study Selection

The screening process followed a two-stage protocol. First, two independent reviewers screened titles and abstracts for initial eligibility. In the second stage, full texts were reviewed to confirm inclusion against predefined criteria. Disagreements were resolved through discussion or, if needed, consultation with a third reviewer.

2.5. Data Extraction

A standardized data extraction template was developed. The following variables were extracted from each included SRMA:

- First author and year
- Geographic coverage
- Number of included studies,
- Population focus (e.g., General Population, Adolescents, Elderly)
- Depression measurement tools (e.g., PHQ-9, GDS, CES-D)
- Prevalence estimates (If Available)
- Study design of included articles (Cross-Sectional, Longitudinal, Etc.)
- Data extraction was carried out by the lead author and independently verified by two co-authors to ensure consistency and reliability, in line with recommendations by Gunhan et al [14].

2.6. Quality Assessment

Methodological quality of each included review was assessed using an adapted version of the AMSTAR-2 tool [15].

A five-point scoring system was used to categorize reviews as:

- **High quality (100%):** Met all five criteria, including actionable recommendations.
- **Good (80%):** Met four criteria, including 20 studies analyzed.
- **Average (60%):** Met three criteria.
- **Fair (40%):** Met only two, usually limited to SRMA design and publication timeframe.
- This tiered approach allowed us to assess both methodological rigor and policy relevance, in alignment with global health evaluation standards [16,17].

This meta-review addresses a critical gap by synthesizing published SR-MAs on depression prevalence from the past decade.

Our objective is to:

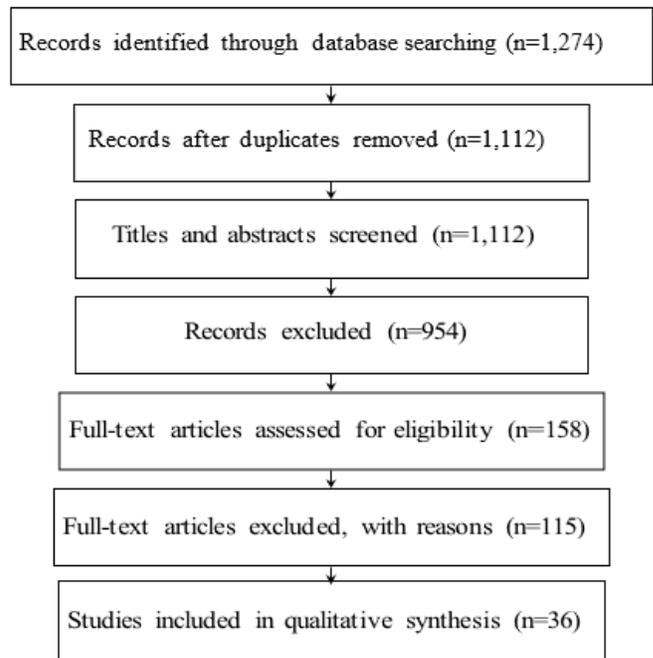
- Evaluate the global and demographic scope of existing SRMAs.
- Assess their methodological quality using an adapted AMSTAR-2 framework.
- Identify populations, regions, and methodological dimensions that remain underrepresented or inconsistently studied.

- These findings aim to guide future research and help shape more equitable, evidence-based mental health policies globally.

3. Results

3.1. Study Selection

The systematic search yielded a total of 1,274 records, of which 981 remained after removing duplicates. Following title and abstract screening, 158 full-text articles were assessed for eligibility. Ultimately, 36 Systematic Reviews and Meta-Analyses (SRMAs) met the inclusion criteria and were included in this meta-review. Flowchart presents a PRISMA diagram summarizing the study selection process. In the summary Table, we provide a concise summary of the articles included in our study. Most of the articles scored above our 40% quality threshold, suggesting generally strong methodological standards based on our evaluation criteria. Only a few articles received average scores. Notably, more than 70% of the articles clearly reported their analytic time-frames, and all followed PRISMA guidelines. We grouped the articles into six thematic categories based on their main research focus.



Notes: The study selection process was illustrated using a PRISMA flow diagram, in accordance with the recommendations provided by Page et al [13].

Flow Chart: Showing the Selection Process

Authors	Year	Years Considered	No of Papers Identified	No of Papers Used	Chart Flow Diagram	Quality	Concentration
Ting Hu + 6	2022	2000-2021	5791	48	Yes	High	In General, Prevalence is High
Viktoria Vibhakar + 3	2019	not stated	3967	41	Yes	Good	Children/ Adolescents
Daan Brandenburg + 6	2019	not stated	643	20	Yes	Good	Cancer Survivors
Trine Ryttersgaard + 4	2019	1984-2018	2028	7	Yes	Average	Young Adult/ Adolescent
Aaisha Farooqi + 7	2022	1985-2021	916	44	Yes	High	Type 1 & 2 Diabetes Patients
Rosa E. Boeschoten + 6	2017	1965-2014	2986	58	Yes	High	Multiple Sclerosis (MS) Patients
Jinghui Wang + 11	2017	1990-2015	3165	83	Yes	High	Outpatients
Motahare Pilevar' + 5	2019	2000-2019	6140	72	Yes	High	Breast Cancer Patients (BCP)
Hong Cai + 9	2023	1991-2019	5297	55	Yes	High	Older adults
Rohan Puthran + 3	2016	not stated	1395	77	Yes	Good	Medical Students
Nasrin Abdoli + 6	2022	2001-2021	2297	20	Yes	Good	Elderly
Bereket Duko + 2	2020	not stated	739	25	Yes	Good	Tuberculosis Patients
Lijuan Zhang + 4	2017	1997-2016	3347	59	Yes	Good	Systematic Lupus erthematosus
David Ried + 1	2022	2005-2019	1308	210	Yes	Good	Cancer Patients
Zhanzhan Li + 4	2015	2005-2014	3890	41	Yes	Good	Adults with Hypertension
Sofia Pappa + 5	2020	2019-2020	45	45	Yes	Good	Healthcare Professionals
Darlan Matte + 6	2016	not stated	1613	8	Yes	Average	COPD
Parveen Akhtar + 6	2020	2009-2018	2561	37	Yes	Good	Undergraduate in LMIC
Yi-Jung Tung + 3	2018	2015-2016	2872	27	Yes	High	Nursing Students
Wilson Tam + 2	2019	not stated	850	10	Yes	Average	Medical Students
Douglas Mata + 6	2015	1963-2015	3343	54	Yes	Good	Resident Physicians
Dara Leung + 3	2021	not stated	7370	20	Yes	Average	Dementia Stages

Mohammad Heidari + 6	2021	1986-2019	3527	27	Yes	Good	Post-Hip Fracture
Dario Moreno-A + 5	2021	1937-2018	7397	19	Yes	Good	General Public
Nastaran Karami + 5	2023	2000-2022	9866	73	Yes	Good	Cardiac Patients
Yanli Wu + 3	2024	2000-2024	10032	29	Yes	High	Self-Injured Adolescents
Amir Jalali + 8	2024	open-2023	30283	58	Yes	High	Elderly Population
Bingqing Lu + 2	2024	open-2023	2793	96	Yes	High	Children/ Adolescents
Mohammad Amini + 9	2024	open-2024	680	10	Yes	Average	Orthopedic Residents
Rin Miyaguchi + 6	2024	not stated	3919	24	Yes	Good	Restless Legs Syndrome (RLS)
Ting Pan + 5	2024	open-2023	17810	86	Yes	Good	Perinatal Depression
Wenjing Chen + 4	2024	open-2023	859	16	Yes	Average	Melasma Patients
Alexandra Mitchell + 8	2023	open-2021	13902	589	Yes	Good	Perinatal Depression in LMIC
Tai Raina Hunter + 3	2024	open-2022	443	21	Yes	Good	Maternal Post-Childbirth
Alessia Caffieri + 5	2023	open-2023	1268	25	Yes	Good	Perinatal Depression
Zahra Kiani + 5	2023	open-2022	5193	22	Yes	Good	Infertile Men

Notes: This table offers a snapshot of the key features of the studies included in our review. It outlines the publication year, the study period covered, the number of papers screened and ultimately included, whether a chart flow diagram was provided, the quality assessment, and the specific population focus. Together, these details offer a clear picture of our methodological approach and the strength of our evidence base. The studies span a wide range of populations from those focusing on individuals with chronic illnesses, to others that examine mental health among healthcare professionals [18-25]. Additional studies delve into diverse groups such as adolescents, patients with specific medical conditions, and the general population, offering a rich and varied understanding of depression prevalence across settings [10,26-38].

Table: Overview of Included Studies

3.2. Geographic Distribution and Continent Focus

A pronounced geographic and continental imbalance was evident among the included systematic reviews and meta-analyses, as illustrated in Figure 1. We categorized the findings into two groups: continents most frequently represented and those least represented. Asia accounted for the highest proportion, appearing in 55% (n

= 20) of the studies, followed by the Americas at approximately 20%. Among the underrepresented continents, Africa appeared in 53% (n = 19) of studies classified as least represented, followed by Australia. In both categories, certain studies lacked sufficient detail to determine the most or least represented continent, and these were classified as “None” in Figure 1.

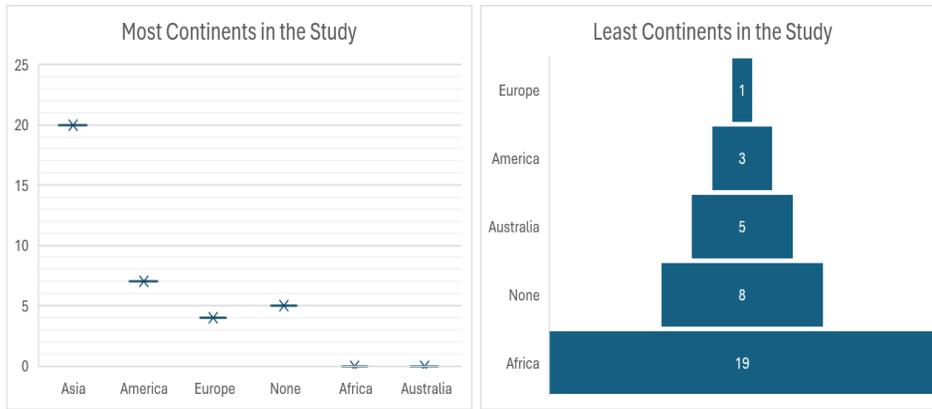


Figure 1: Most and Least Continents Identified

3.3. Target Audience

We further categorized the 36 included studies based on their target audience or scope as shown in Figure 2. This classification yielded six distinct groups: general population, adolescents, individuals with illnesses, professionals, students, and the elderly. About 40% of the studies examined depression in the context of physical illnesses, while 22% focused on the general population. The

remaining categories each constituted approximately 11% of the studies, with the exception of those targeting professionals, which accounted for only about 6%. Notably, we identified a gap in the literature, as certain sub-populations such as security personnel, informal workers, and individuals affected by natural disasters were largely underrepresented or absent from the reviewed studies. Some of these articles [18,23,26,29,30,33].

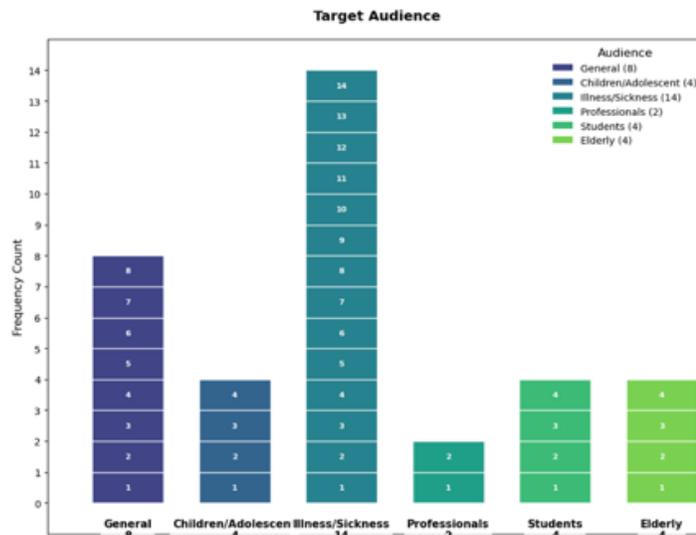
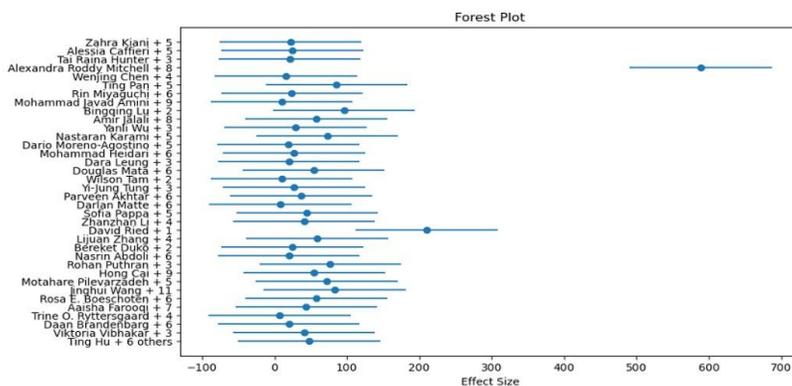


Figure 2: Concentration

3.4. Forest Plot Synthesis

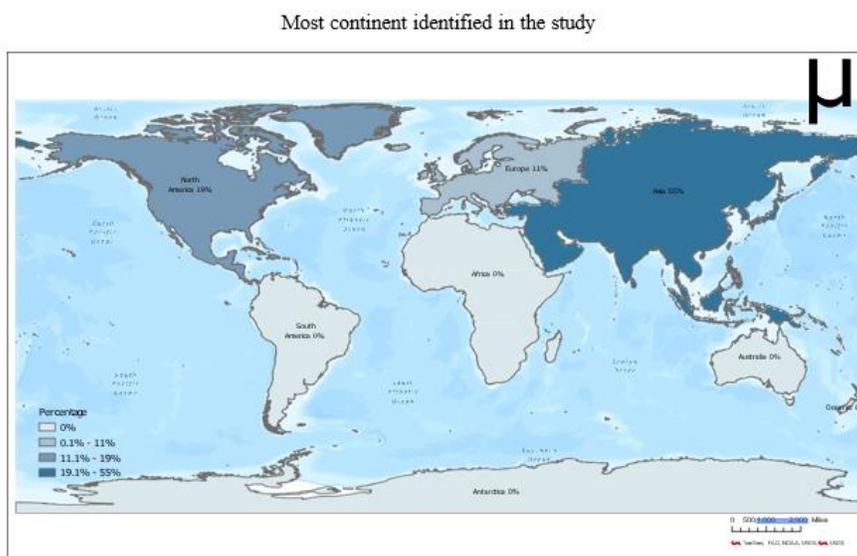
A forest plot (Figure 3) visualized the variation in pooled prevalence estimates and confidence intervals across SRMAs. Most effect sizes clustered within a central range, though two extreme outliers

at +200 and +600 skewed the overall distribution. Confidence intervals varied widely, indicating differences in sample sizes and precision.



Forest plot displaying effect sizes and 95% CIs for 36 studies. Variability in effects suggests potential heterogeneity

Figure 3: Forest Plot



Notes: This figure 4 presents the geographical distribution of studies that examined depression prevalence across continents. It complements the main analysis by highlighting the concentration of research efforts, with Asia and North America being the most represented regions, while Africa, Australia, and South America recorded no included studies

Figure 4: Geographical Distribution of Studies on Depression Prevalence Across Continents

4. Discussion

This is the first comprehensive meta-review to synthesize global evidence from systematic reviews and meta-analyses on depression prevalence. Our analysis of 36 SRMAs published between 2014 and 2024 reveals major gaps geographic, methodological, and demographic that limit efforts to build globally representative and policy relevant mental health strategies.

4.1. Key Findings in Context

The current evidence base is heavily concentrated in Asia, particularly East and South Asia echoing patterns reported by Hu et al [39]. Meanwhile, Africa and Latin America remain significantly

underrepresented, despite facing rising mental health burdens and limited access to formal care [11,12]. We also found that existing research takes a fragmented approach to which populations are studied in depression prevalence. Most SRMAs focused on elderly adults, adolescents, or clinical populations, reflecting trends in the existing literature [10,40]. Yet few studies examined high-risk or underserved groups such as postpartum parents, informal workers, refugees, or people affected by economic crises, groups that evidence suggests face disproportionate mental health risks [41,42]. This gap limits how useful current prevalence estimates are for guiding public health planning. The SRMAs we reviewed also varied widely in their methods, especially in the screening

tools and analytic techniques they used. For instance, differences in cut off thresholds for GDS-15, PHQ-9, or CES-D complicate cross-study comparisons [43]. These patterns align with Hu et al., who found that differences in screening tools significantly influence prevalence estimates and add to the variability from study to study [39].

5. Conclusion

This study represents one of the first systematic meta-reviews of systematic reviews and meta-analyses on global depression prevalence. By synthesizing 36 SRMAs conducted over the past decade, we provide a broad, integrative perspective on the global evidence base, highlighting both the most frequently studied regions and those consistently overlooked in depression research. A key contribution of this study is its ability to uncover structural and geographic gaps that are often missed in primary studies or conventional meta-analyses. In particular, we demonstrate that the overwhelming focus on Asia and clinical populations has come at the expense of attention to low-income regions such as Sub-Saharan Africa, and socially vulnerable groups such as informal workers, displaced persons, and those affected by economic shocks. These findings carry important implications for global depression policy. The current imbalance in data may distort global burden estimates and misinform the allocation of resources. Additionally, methodological inconsistencies across SRMAs such as differences in screening tools and quality assessments highlight the need for more standardized, transparent, and equity-focused research practices in global mental health. Future research should expand on this work by conducting region-specific meta-reviews, examining intersectional vulnerabilities, and connecting prevalence estimates to real world policy and program outcomes. Expanding global surveillance to include the voices and experiences of the underrepresented is not only a methodological necessity but a moral imperative in global mental health.

Policy Implications

The implications for global depression health policy are significant.

- First, the lack of data from low-income regions risks driving systematic underfunding and resource misallocation by global health agencies.
- Second, missing data on key demographic groups limits the ability to design tailored interventions and integrate mental health into universal health coverage systems.
- Third, our results highlight the need for stronger methodological standards in SRMAs especially in tool selection, heterogeneity reporting, and use of quality appraisal tools like AMSTAR-2. Funders and journals should prioritize reviews that explicitly consider policy translation, equity, and inclusion of marginalized populations.

Recommendations for Future Research

Future systematic reviews and meta-analyses should:

- Expand representation from under studied regions such as Sub-Saharan Africa, Latin America, and Australia.
- Include underrepresented populations such as working adults, informal laborers, and displaced individuals.

- Use standardized instruments and cut-offs to enable global comparability.
- Include policy-relevant outcomes, such as risk factors, protective determinants, and access barriers

This study has several limitations that warrant consideration.

- First, the exclusion of non-English publications may have introduced a bias in geographic representation.
- Second, our analysis depended on the reporting quality of the included SRMAs. Because this quality varied widely, it limited our ability to extract consistent quantitative effect sizes.
- Third, we did not conduct a pooled quantitative synthesis across SRMAs, as doing so would have required harmonizing outcome measures and screening tools a step that wasn't feasible given the level of heterogeneity.

Given the well-established link between chronic stress and depression, it is crucial to develop targeted stress reduction strategies particularly for vulnerable groups such as student to help prevent the onset of depression [44,45].

Conflict of Interest and Funding Declaration

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