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Prevalence of Depression among persons with Tuberculosis in India – Protocol for systematic review and Meta-analysis

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ADMINISTRATIVE INFORMATION

Support - Not applicable.

Review Stage at time of this submission - Data extraction.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202540008

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 3 April 2025 and was last updated on 3 April 2025.

INTRODUCTION

Review question / Objective This systematic review aims to find the pooled prevalence of depression in tuberculosis patients from studies done in India and their associated factors like type of TB, severity of depression, gender and marital status.

Rationale Numerous studies done in India have shown the prevalence of depression in tuberculosis, ranging from 12% to 70%, which shows the higher rates of co-morbidity of depression in them. National Tuberculosis Elimination Programme (NTEP) 2020-25 plans to eliminate tuberculosis by 2025(1). To reach the desired objectives, there is a need to treat simultaneously the associated co-morbidities like depression for better success rates in treatment. There is a need to involve and educate the health fraternity involved in the program for early detection and treatment of depression. This systematic review will help in finding the pooled prevalence of depression in Tuberculosis patients in India, which may assist the policymakers in knowing the magnitude of co-morbidity and helping healthcare providers to provide the necessary interventions.

Condition being studied We will be studying the prevalence of depression in Tuberculosis in Indian settings only. All studies that mention the prevalence of depression in tuberculosis will be included in this study.

METHODS

Search strategy We will search the following databases: PubMed, Web of Science, Psych INFO, SCOPUS, and Google Scholar.

Search Strategy
Tuberculosis OR Pulmonary TB OR Pulmonary Tuberculosis OR TB OR Extra-pulmonary TB OR Extra-pulmonary Tuberculosis OR MDR-TB OR Multi Drug-Resistant TB OR Multi Drug-Resistant Tuberculosis OR XDR-TB OR Latent Tuberculosis OR Extensively Drug-Resistant Tuberculosis AND

Depression OR Depressive Disorder OR Psychiatric illness OR common mental disorders OR Major depressive disorder OR Major depression OR depressive symptoms OR Psychological distress AND Prevalence OR Prevalence Rate OR Incidence

Participant or population Patients diagnosed with any TB (Pulmonary and extrapulmonary TB, new and relapse, drug-sensitive (DS), and drug-resistant (DR) TB, who may or may not have been on treatment at the time of assessment will be eligible for this review.
There will be no exclusion based on age or sex. The study should report the prevalence of depression in Tuberculosis patients.
The population will be from India only.

Intervention None.

Comparator None.

Study designs to be included We will be including observational studies like Cross-sectional and cohort studies.A systematic review and meta-analysis of studies will be conducted to assess the prevalence of depression. The Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines were followed to review articles.

Eligibility criteria
Inclusion criteria
- Persons diagnosed with any TB (Pulmonary and extrapulmonary TB, new and relapse, drug-sensitive (DS), and drug-resistant (DR) TB, who may or may not have been on treatment at the time of assessment
- Studies conducted in India
- Outcomes of interest is the prevalence of depression in patients with Tuberculosis.
- We included observational studies (e.g., Cross-sectional or cohort studies).

Exclusion criteria
- Studies published in a language other than English
- Case-control studies, Case reports and case series
- Systematic reviews, posters, conference abstracts, scientific correspondence.
- Studies have tuberculosis patients with co-morbidities of HIV, Hepatitis infection.

Information sources We will search the following databases - PubMed, Web of Science, Psych INFO, and SCOPUS. We will also manually search Google Scholar and reference lists for eligible articles.

Main outcome(s) The pooled prevalence of depression in Tuberculosis patients will be determined from the included studies. The random effects meta-analysis model will be used to determine the pooled prevalence.

Additional outcome(s) The pooled prevalence of depression among Tuberculosis patients by type of TB (MDR-TB and Non MDR-TB), assessment instrument, gender, marital status, and severity of depression assessed by instrument will be determined.

Data management Covidence software will be used to screen the articles and include the articles for data extraction. Two reviewers will independently evaluate the database search results using their titles and abstracts before retrieving full-text articles for further screening. The retrieved articles will be screened independently by two reviewers using pre-defined inclusion and exclusion criteria, and any disagreement will be resolved via discussion with a third reviewer. Cross-sectional and other observational studies done in India that assessed the prevalence of depression among patients with tuberculosis (Drug sensitive and Drug-resistant TB) and published in the English language will be included in the review. Duplicate studies, reviews, letters, editorials, and conference papers are excluded from the review.
A predesigned data extraction Excel sheet will be prepared to extract data from the studies included in the systematic review and meta-analysis. The following information will be extracted from each study: year of publication of the article, study title, Authors, Aims and outcome of the study, type of study, Inclusion and exclusion criteria, Study site, Duration of study, Samples, Scales used in the study, Ethical clearance, Referral for necessary diagnosis, Data analysis, Sample size and their socio-demographic details, and prevalence of depression. Socio-demographic information included age, sex, marital status, site of tuberculosis, type of family, socio-economic status, residence, and history of tobacco use. Statistical analysis will be done using Stata software.
The Luis Furuya-Kanamori Index will assess publication bias.

Quality assessment / Risk of bias analysis Joanna Briggs Institute (JBI) checklist will be used to assess the quality of included articles. The JBI checklist will be applied to each included article independently by two reviewers, and any discrepancy will be sorted by a third reviewer.

Strategy of data synthesis The type of outcome data is binomial data. The effect measure used will be the proportion. The random-effects meta-analysis model will be used to obtain the pooled proportion. The method of synthesis will use the Freeman-Tukey double arcsine transformation for variance stabilization, and the pooled proportion will be computed using the Dersimonian and Laird method. The frequentist approach will be used. Missing data will be handled using available case analysis.

Subgroup analysis We will be doing a sub-group analysis on the data assessment instrument used to assess depression, the gender of the study participants, and the marital status of the study participants.

Sensitivity analysis To further investigate the potential source of heterogenicity in the analysis of the prevalence of depression among patients with tuberculosis, we will be conducting sensitivity analysis by the type of TB (Non-MDR-TB and MDR-TB) and severity of depression.

Language restriction Studies published in the English language will be included in this study.

Country(ies) involved India.

References

1. Malwe S, Bawiskar D, Wagh V. Tuberculosis and the Effectiveness of the Revised National Tuberculosis Control Program (RNTCP) to Control Tuberculosis: A Narrative Review. Cureus. 2023 Dec 31;15(12):e51418.

Keywords “Tuberculosis”, “Prevalence”, “Depression”, “India”.

Dissemination plans We are developing a dissemination plan for our article, which we intend to submit to a journal that publishes tuberculosis-related research to maximize its reach and impact among relevant stakeholders.

Contributions of each author

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