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Multimorbidity in Young Adults in India: A PRISMA-ScR-Guided Scoping Review V.1

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Koustubh D Bhat¹, Dr Anusha S J²

¹MBBS Student, India; ²MBBS, MD

Public Health and Clinic...



Koustubh D Bhat

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We are still developing and optimizing this protocol

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Keywords: Multimorbidity, Young Adults, India, Scoping Review, PRISMA-ScR, reporting multimorbidity, multiple chronic condition, literature on multimorbidity, young adults in india, definitions of multimorbidity, more chronic conditions in an individual, comprehensive overview of multimorbidity, multimorbidity, more chronic condition, prevalence, public health policy, health, disease pattern, public health challenge, secondary analysis

Abstract

Background:

Multimorbidity, defined as the coexistence of two or more chronic conditions in an individual, is increasingly observed among young adults in India. This poses unique clinical, psychosocial, and public health challenges, yet evidence in this population remains fragmented and under-synthesized.

Objectives:

To map and synthesize existing literature on multimorbidity in young adults (18-44 years) in India, focusing on prevalence, disease patterns, determinants, consequences, and health-system implications.

Eligibility Criteria:

Studies conducted in India, reporting multimorbidity or multiple chronic conditions in young adults, including observational studies, secondary analyses, and review articles published in English.

Information sources:

Electronic Databases (PubMed/MEDLINE, Google Scholar, IndMED) and reference lists of relevant studies.

Charting methods:

Data will be extracted using a standardized form capturing study characteristics, definitions of multimorbidity, prevalence, disease clusters, determinants, outcomes, and health-system challenges. Findings will be synthesized thematically

Conclusion / Expected Outcomes:

This scoping review will provide a comprehensive overview of multimorbidity in young adults in India, highlight gaps in current evidence, and inform clinical practice, public health policy, and future research directions.

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1 *Version 1.0 - 15 December 2025*

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Introduction

8 **Rationale:**

Multimorbidity, defined as the presence of two or more chronic conditions in an individual, is traditionally considered a health issue of older adults. However, evidence indicates a rising prevalence of multimorbidity among young adults in India, driven by rapid urbanization, lifestyle changes, early onset of noncommunicable diseases, persistent infections diseases, and psychosocial stressors. Young adulthood (approximately 18-44 years) is a critical life stage, and multimorbidity during this period can lead to long term clinical, psychosocial, and economic consequences, including reduced quality of life, productivity loss, mental health burden, and increased healthcare costs. Despite these consequences, research on multimorbidity in young adults in India is fragmented.. Existing studies use heterogenous definitions, focus on specific diseases or regions, and have not been systematically mapped. Furthermore, national health programs and clinical guidelines remain largely disease-centric and oriented toward older populations, potentially overlooking the needs of young adults with multiple chronic conditions. A scoping review is therefore warranted to systematically map the extent, range and nature of available evidence on multimorbidity in young adults in India. This will identify knowledge gaps, inform clinical practice, guide public health interventions, and highlight priorities for future research and policy development.

Introduction

9 **Objectives:**

Primary objective: To map and synthesize existing evidence on multimorbidity among young adults in India

9.1 **Secondary objectives:**

- To describe the prevalence and epidemiological distribution of multimorbidity among young adults.
- To identify common disease patterns and clusters involving physical and mental health conditions.
- To examine determinants and risk factors associated with multimorbidity in this age group.
- To summarise clinical, psychosocial, and economic consequences.

- To explore challenges in clinical management and health-system responses.
- To identify gaps in evidence and priorities for future research and policy

Methods

10 Protocol and Registration

This scoping review protocol has been prospectively registered with protocols.io prior to the start of the review to enhance transparency and methodological rigor. The registration includes detailed information on the objectives, eligibility criteria, search strategy, data charting methods, and planned synthesis approach. The protocol can be accessed publicly at protocols.io. Any deviations from this protocol during the conduct of the review will be documented and justified in the final manuscript.

11 Eligibility criteria

11.1 **Population:** Young adults aged 18-44 years

11.2 **Concept:** Multimorbidity, defined as the coexistence of two or more chronic conditions in an individual.

11.3 **Context:** India, across community and healthcare settings.

11.4 Inclusion criteria:

- Studies conducted in India
- Studies reporting multimorbidity or multiple chronic conditions
- Studies including young adults(18-44 years)
- Observational studies, secondary analysis of surveys, and review articles
- Publications in English

11.5 Exclusion criteria:

- Studies exclusively including children (<18 years) or adults aged >60 years
- Single-disease studies without multimorbidity assessment
- Case reports, editorials, commentaries without empirical data.

12 Information Sources:

Pubmed/MEDLINE
IndMED
Google Scholar
Manual Screening of reference lists of included studies

13 **Search Strategy**

A systemic search will be conducted using combinations of controlled vocabulary and free-text terms:

"Multimorbidity" OR "multiple chronic conditions" AND "young adults" OR "early adulthood"
AND "India"

Search strategies will be adapted for each database. The search will include articles published up to December 2025

14 **Selection of Sources of Evidence**

Titles and abstracts will be screened for relevance, followed by full-text assessment of potentially eligible studies. Sources meeting inclusion criteria will be included in the review.

The selection process will be documented using a PRISMA-ScR flow diagram.

15 **Data charting Process**

Data will be charted using a standardized extraction form developed a priori. The form will be

iteratively refined as needed during the review process.

16 **Data items**

The following data will be extracted:

- Author(s), year of publication
- Study Design and setting
- Population characteristics and age range
- Definition of multimorbidity used
- Prevalence estimates
- Disease patterns or clusters
- Determinants and outcomes reported

17 **Critical Appraisal of Individual Sources**

Consistent with PRISMA-ScR guidance, formal risk-of-bias assessment will not be performed, as the objective is to map existing evidence rather than assess intervention effects. Methodological limitations of included studies will be narratively discussed.

18 **Synthesis of Results**

Findings will be synthesized using thematic narrative synthesis, organized under the following domains:

- Epidemiology
- Disease patterns and clusters
- Determinants and risk factors

- Clinical and psychosocial consequences
 - Health-system and policy implications
- No quantitative meta-analysis will be undertaken.

Results

19 **Selection of Sources of Evidence**

The selection process will be documented using PRISMA-ScR flow diagram, detailing the number of records identified through database searching and other sources, records screened, full-text articles assessed for eligibility, and sources of evidence included in the review, along with reasons for exclusion at each stage.

20 **Characteristics of Sources of Evidence**

Characteristics of included studies will be summarized in tabular form, including author and year of publication, study design, setting, population characteristics, age range, definition of multimorbidity used, and key outcomes relevant to the review objectives.

21 **Critical Appraisal Within Sources of Evidence**

In keeping with the scoping review methodology, a formal critical appraisal of the individual sources of evidence will not be undertaken. However, key methodological limitations and variations across studies will be noted narratively where relevant.

22 **Synthesis of Results**

Findings will be synthesized using a thematic narrative approach and organized under predefined domains, including epidemiology, patterns of multimorbidity, determinants and risk factors, clinical and psychosocial consequences, and health-system implications.

Discussion

23 **Summary of Evidence**

The discussion will provide a summary of the key findings of the scoping review, relating them to the review objectives and the broader context of multimorbidity research in India.

Emphasis will be placed on the extent and nature of evidence available for young adults.

24 **Limitations**

Limitations of the scoping review will be discussed, including potential publication bias, heterogeneity in definitions of multimorbidity, variability in age group classifications, and reliance on observational and secondary data sources.



25 **Conclusions**

Conclusions will highlight the implications of the findings for clinical practice, public health policy, and health-system planning in India. Key evidence gaps and priorities for future research on multimorbidity among young adults will be outlined.

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- 26 The scoping review did not receive any specific funding from public, commercial, or not-for-profit funding agencies.