

DEFINING PRECONCEPTION MATERNAL MULTIMORBIDITY: A SYSTEMATIC REVIEW AND META-ANALYSIS

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BACKGROUND

- Multimorbidity (MM) is defined as two or more chronic conditions in a person¹
- MM affects 1 in 4 pregnant women and is increasing in prevalence¹
- MM is associated with adverse maternal and neonatal outcomes²
- The conditions used to capture MM are not standardised and vary between studies²
- We aimed to evaluate definitions, prevalence, and patterns of preconception multimorbidity

METHODS

- Review registered a-priori with PROSPERO
- Databases: Medline, Embase and CINHAL
 - inception to 1 Sep 2024
- Inclusion criteria:
 - Population: pregnant women
 - Exposure: preconception MM
 - Comparison: no preconception MM
 - Outcome: all maternal/neonatal outcomes
- At least 2 independent reviewers screened titles/abstracts and full texts using the Covidence review management package
- Study characteristics and conditions studied extracted by one reviewer and synthesised
- Conditions were grouped using ICD-10 categories

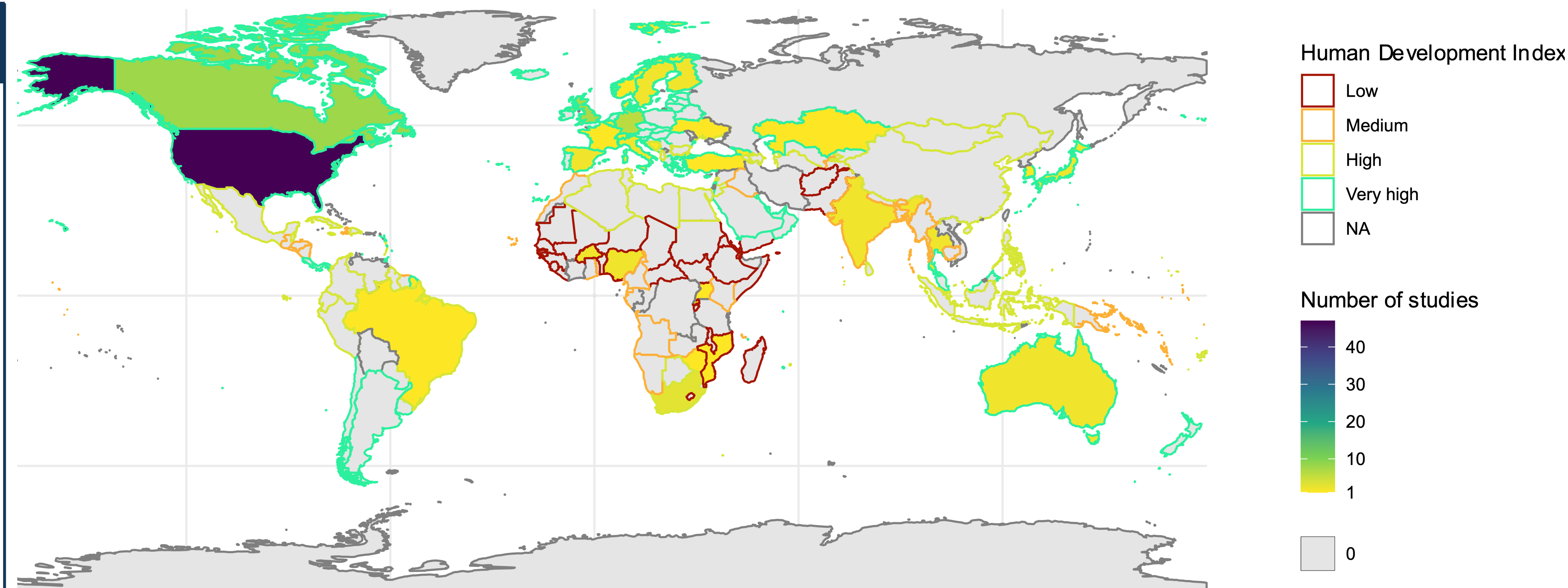


Figure 1: Map of countries studied by articles in our review

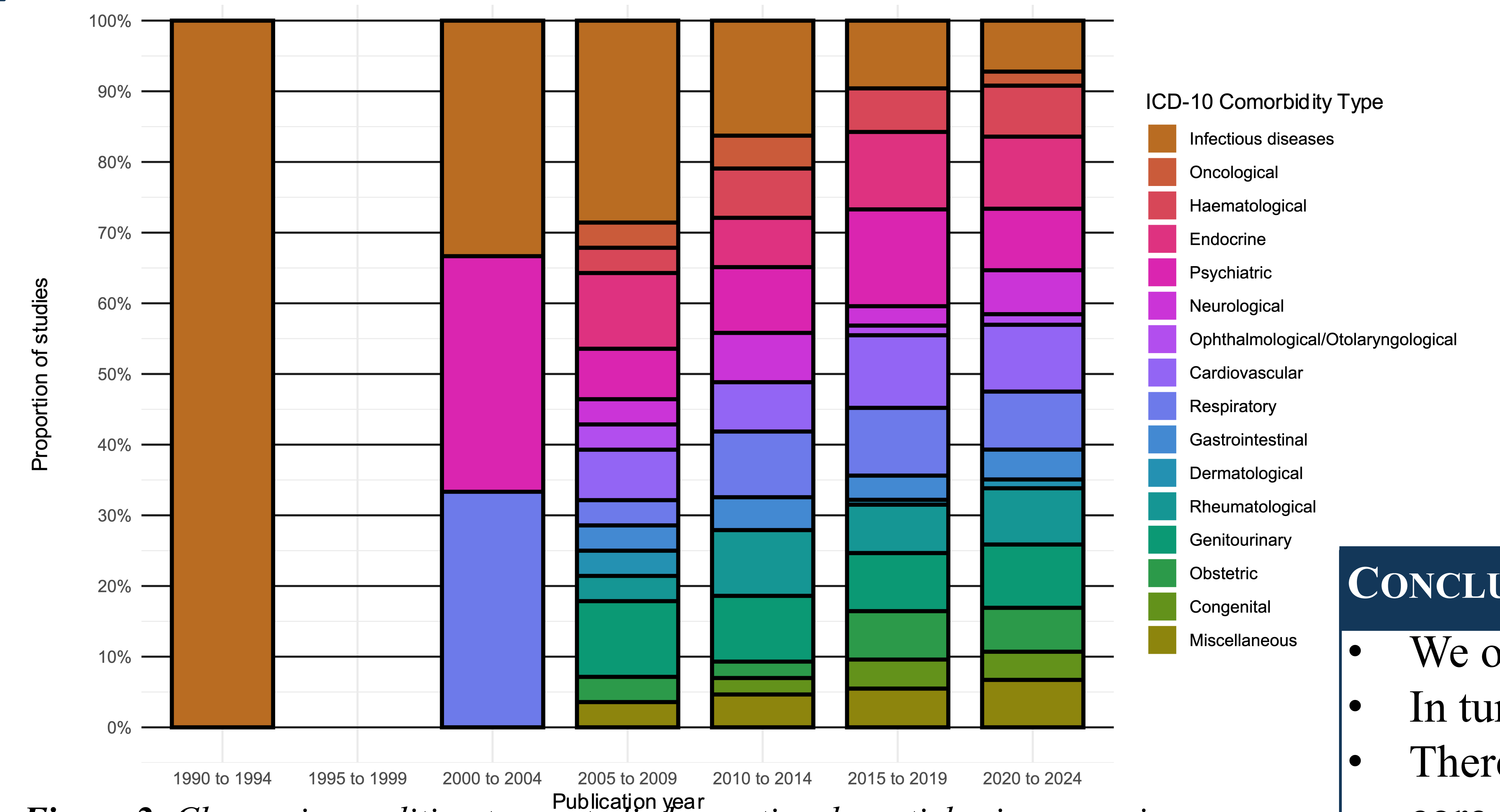


Figure 2: Change in condition types studied over time by articles in our review

RESULTS

- 16,134 articles screened, 643 underwent full text review. 99 articles met inclusion criteria.
- Most studies were retrospective (n = 78, 78.8%) and cohort (n = 76, 76.8%) in design
- 108 total country instances studied (Figure 1)
 - Mostly high-income countries (n = 93, 85.3%)
 - Mostly North American (n = 54, 49.5%)
- Studies included between 2 and 79 conditions
 - A shift was observed from infectious to non-infectious diseases over time (Figure 2)
 - Infectious diseases comprised 100% of studied conditions in 1990-1994, falling to 7.83% in 2020-2024
- Most studied conditions were diabetes mellitus (n = 60, 60.6%) and HIV (n = 56, 55.6%)
- Pooled prevalence of preconception multimorbidity 15% (95% CI: 11 - 19%)
 - Significant heterogeneity: I² = 100%

CONCLUSIONS

- We observed variation in the conditions co-studied
- In turn, significant variation in MM prevalences
- There is a need for a more inclusive, globally-representative core condition set to harmonise research, inform targeted interventions, and aid resource allocation