

Natan Feter^{1,2}, Paula Iso-Markku³, Tiladia Markarian¹, Dylan Luong¹, Jack Gunnink¹, Natalia Schröder^{2,4}, Eduardo Caputo^{2,5}, Jayne Feter², Anamika Nanda¹, Sarah Hourihan¹, Gustavo S. da Silva², Daniela Benzano Bumaguin⁴, Yann C. Klimentidis⁶, Gene E. Alexander⁶, Pedro Hallal⁷, Daniel Umpierre⁴, Airtón José Rombaldi², David A. Raichlen¹

¹University of Southern California, USA ²Universidade Federal de Pelotas, Brazil ³University of Helsinki, Finland ⁴Universidade Federal do Rio Grande do Sul, Brazil ⁵Brown University, USA ⁶University of Arizona, USA ⁷University of Illinois Urbana-Champaign, USA

Introduction

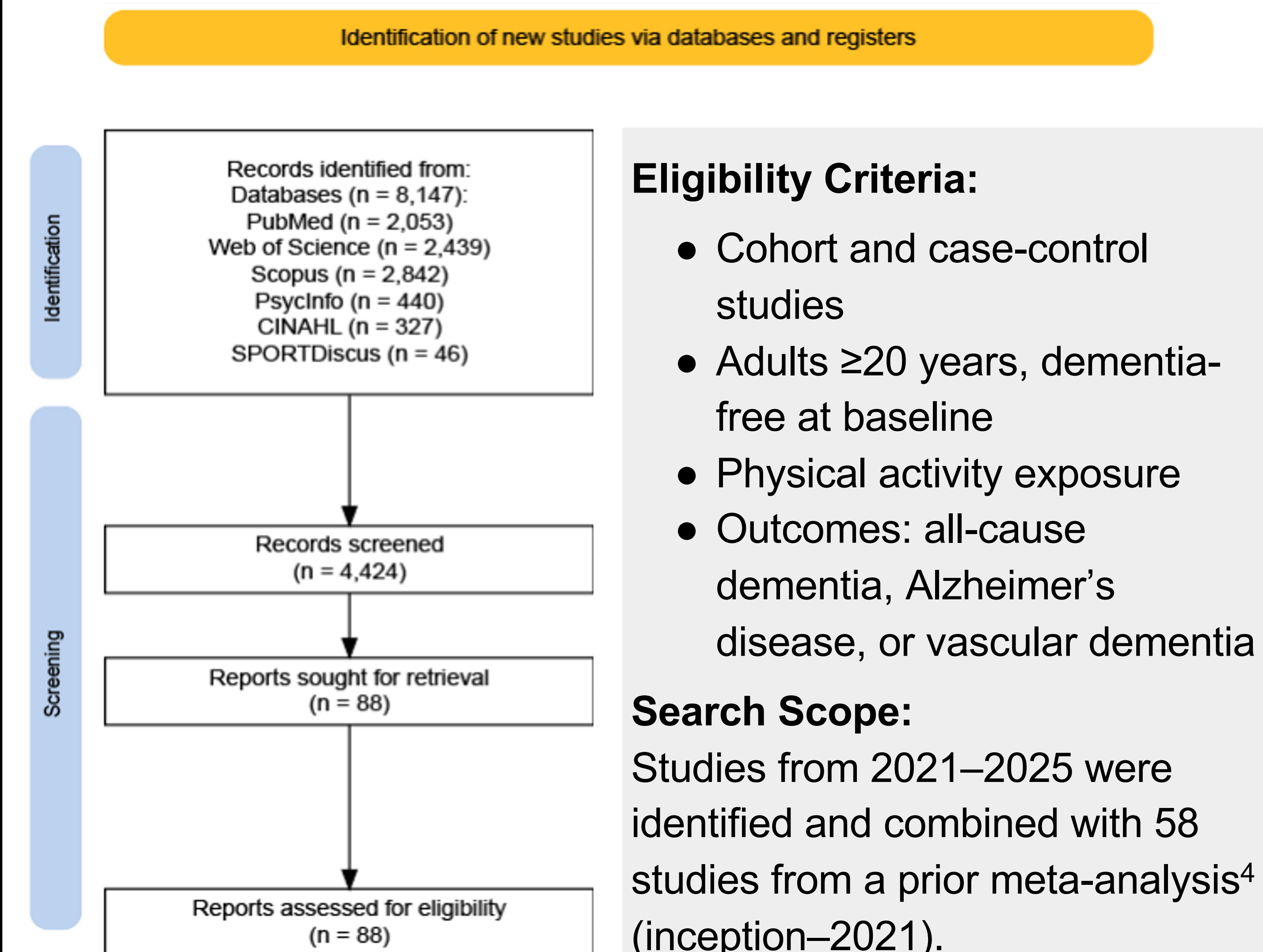
- Dementia is a growing global public health crisis, with the largest projected increases occurring in low- and middle-income countries¹
- Physical activity is a modifiable factor for reducing dementia risk²
- However, it is unclear whether research on physical activity and dementia reflects the regions where dementia burden is expected to grow most rapidly, limiting equitable prevention strategies

Objectives

1. Examine the geographic distribution of studies investigating the association between physical activity and dementia risk
2. Compare this distribution to projected changes in dementia burden

Methods

Figure 1. PRISMA Flow Diagram of Study Selection³



Data Analysis

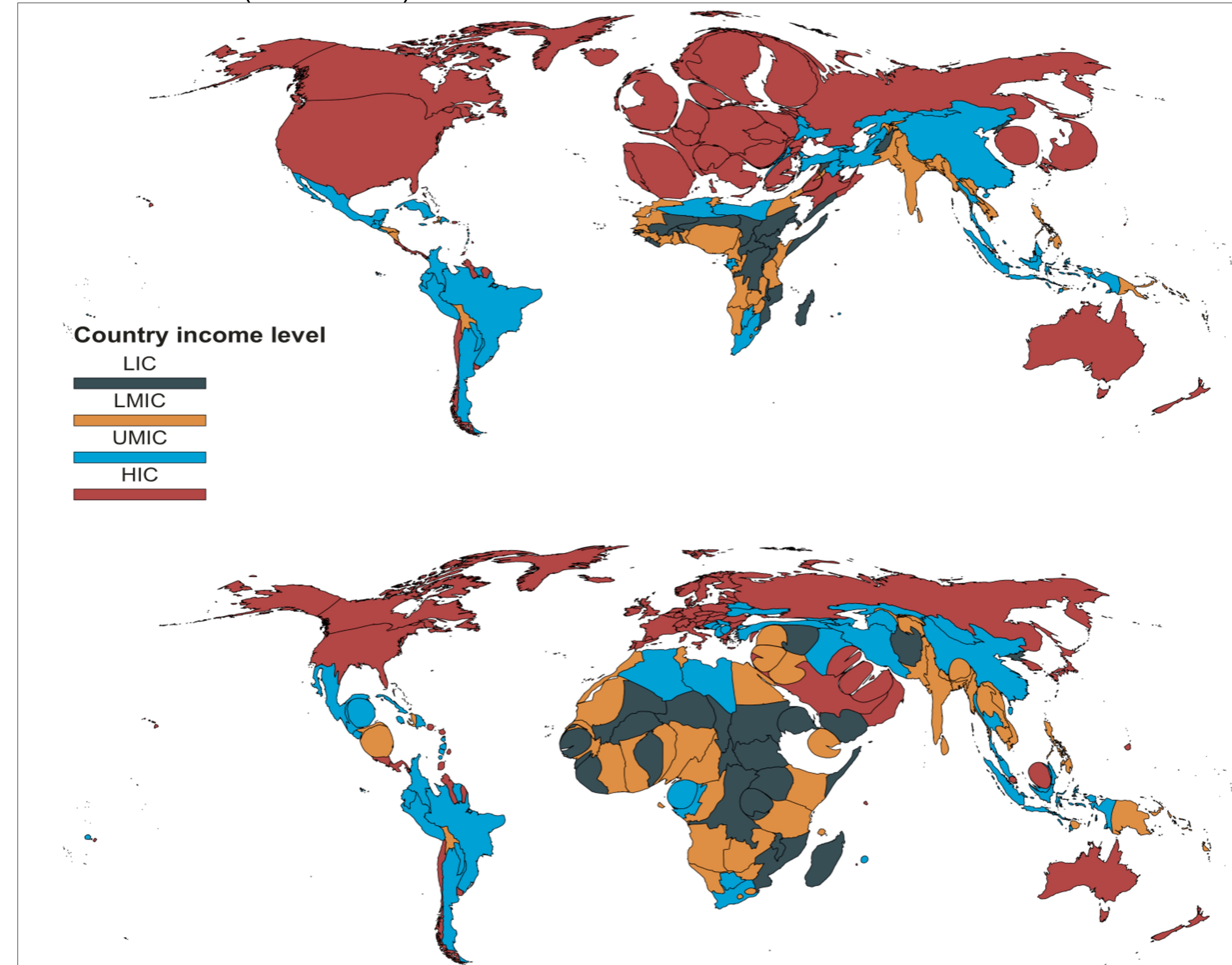
Cartograms were constructed and rescaled to compare:

1. Number of studies per country
2. Projected relative increase in dementia cases (2019–2050; Global Burden of Disease 2019)¹

Countries were grouped by World Bank income level.⁵

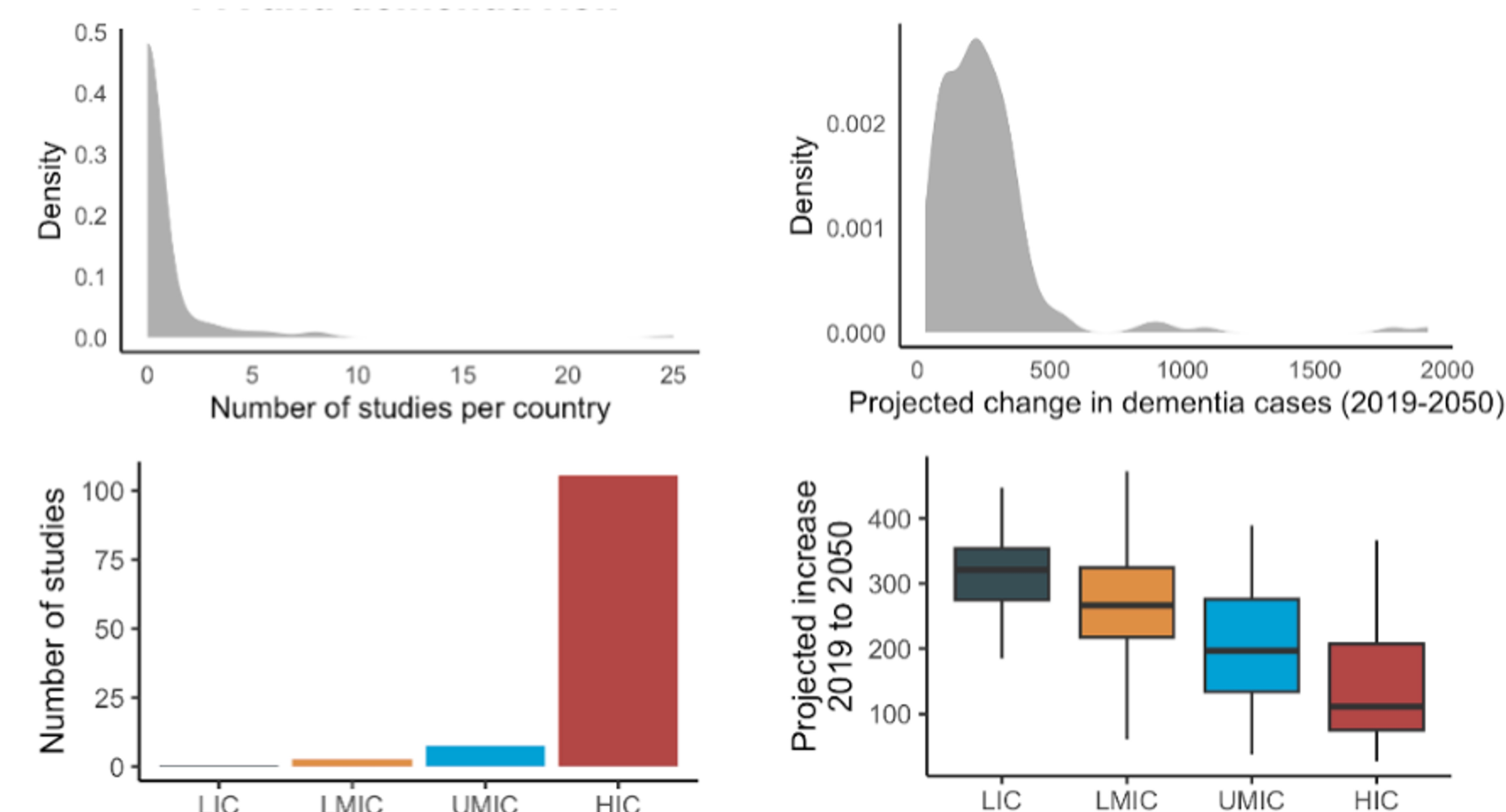
Results

Figure 2. Global cartograms rescaled by number of studies and projected relative change in dementia cases (2019–2050)¹.



Top map: Country size rescaled by number of studies on physical activity and dementia risk.
Bottom map: Country size rescaled by projected relative change (%) in dementia cases¹ (2019–2050).
(LIC = low-income; LMIC = lower-middle-income; UMIC = upper-middle-income; HIC = high-income countries.)

Figure 3. Distribution of Study Representation and Projected Dementia Burden Across Countries



Country-level distribution of the number of physical activity-dementia studies (left) and projected relative change (%) in dementia cases from 2019 to 2050¹ (right). Top panels show the distribution across countries (each country contributing one value); bottom panels summarize values by World Bank income group.

Results (cont.)

- 80 studies were included (N = 5,013,910; ages 39.2–93 years)
- 93% of studies were conducted in high-income countries (HICs)

High income countries

- Lower projected burden of dementia
- Most research on physical activity and dementia risk

Low-middle income countries

- Highest projected burden of dementia
- Least research on physical activity and dementia risk

Conclusions

There is geographic mismatch between where evidence on physical activity and dementia risk is generated and where dementia burden is projected to rise most rapidly.

Evidence from HICs may not generalize to LMICs that face the greatest future burden.

Expanding research in underrepresented regions is essential for equitable dementia prevention.

Acknowledgements & References

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References: ¹Global Burden of Diseases. Lancet Public Health, 2022; ²Xu et al. BMJ Open, 2017; ³Page et al. BMJ, 2021; ⁴Iso-Markku et al. Br J Sports Med, 2022; ⁵World Bank. World Bank Country and Lending Groups, 2025.