

Sex Difference And Population-level Dementia Prevalence In China, 2011-2018: Evidence From A Blinder-Oaxaca Decomposition Analysis

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From 2011 to 2018, population-level dementia prevalence rose significantly among older Chinese men (5.8% → 8.4%) but changed little among women. Rising educational attainment lowered prevalence, while low education and poor mental/physical health raised cognitive vulnerability. Population aging contributed minimally for both sexes.

BACKGROUND

China faces rapid population aging alongside major shifts in socioeconomic and public-health profiles. Their implications for **population-level dementia prevalence** remain understudied. **Sex differences** matter because Chinese men and women have had different exposures to changes in dementia-related biopsychosocial factors.

METHODS

Data: China Health and Retirement Longitudinal Study (CHARLS), 2011 & 2018 waves; nationally representative adults aged ≥60.

Outcome: Population-level dementia prevalence = proportion scoring ≤5 on the 25-point TICS, both waves.

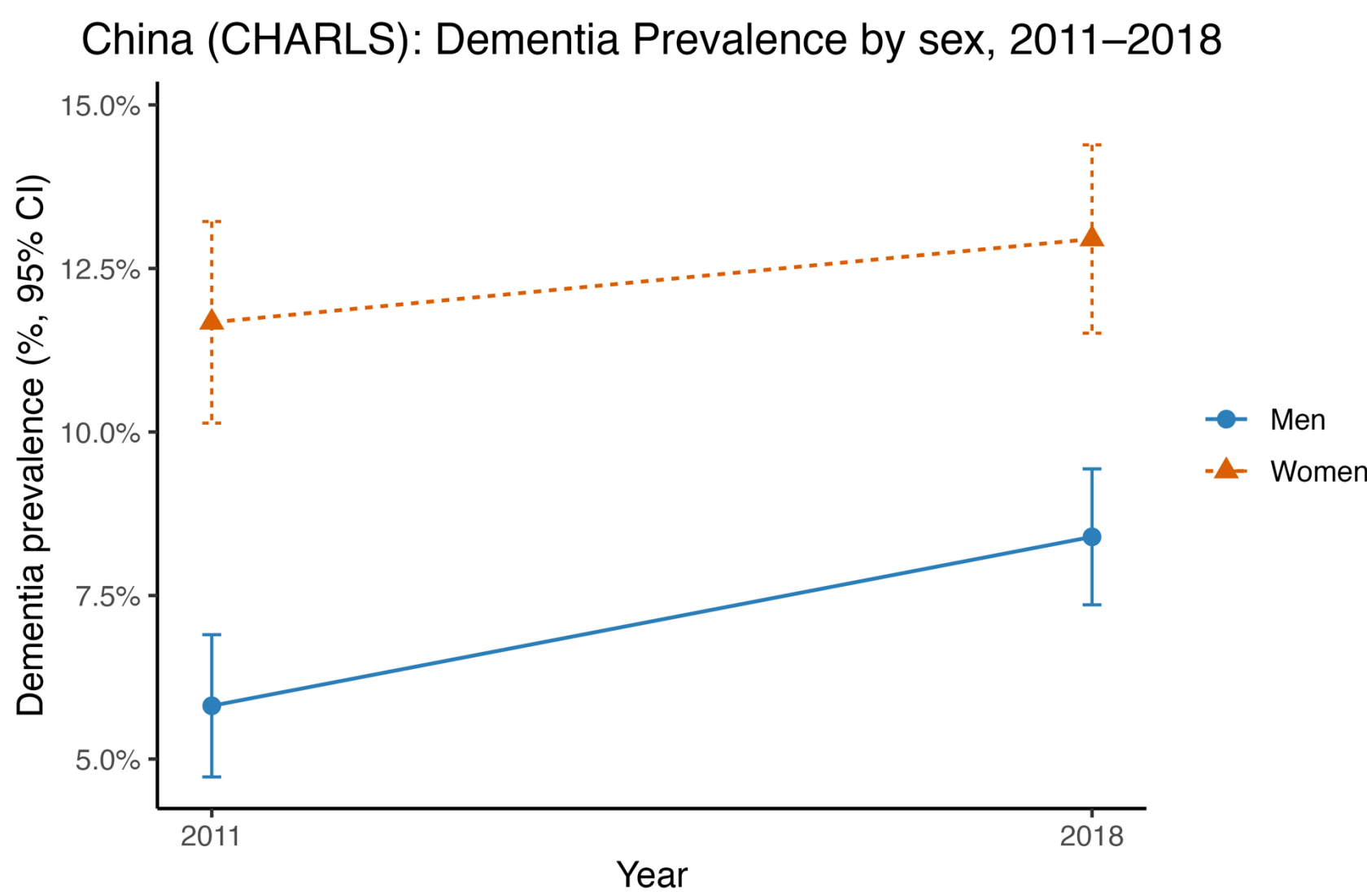
Analysis: Separately for men and women, Blinder–Oaxaca decomposition partitioned the 2011→2018 change into **compositional change** (shifts in population distributions of dementia-related factors) and **coefficient change** (heightened dementia risk associated with sociodemographic characteristics, chronic conditions, functional limitations, depressive symptoms, and health behaviors).

RESULTS

Men: Dementia prevalence rose significantly, **5.8% (2011) → 8.4% (2018)** ($\Delta = +2.6$ pp; 95% CI 1.89–3.30). Compositional shifts — **mainly rising educational attainment** — lowered prevalence (−1.3 pp), but this was outweighed by strengthened associations (coefficients, +5.6 pp), reflecting higher dementia risk tied to **low education, drinking, and functional limitations**.

Women: Prevalence did not increase significantly ($\Delta = +1.3$ pp). Compositional change (largely rising education) reduced prevalence substantially (−3.7 pp), offsetting an even larger coefficient effect (+7.9 pp) — driven by higher risk among women with **low education, arthritis, and depressive symptoms**.

For both sexes, age composition had minimal influence on population-level dementia prevalence.



CONCLUSIONS

- Dementia prevalence changed little among Chinese women but **rose among older Chinese men** from 2011 to 2018.
- Higher educational levels were associated with **lower** population-level dementia risk, while **worsening cognitive vulnerability** was identified for older adults with low education and poor mental/physical health.
- Dementia-prevalence forecasts should account for the changing socioeconomic and health profiles of China’s older population.

REFERENCES

- Ryan-Claytor C, Luo L. Demographic and biosocial determinants of beneficial trends in older adult cognition in the USA and England: the role of cohort succession. *International Journal of Epidemiology*. 2026;55(2):dyag026.
- Blinder AS. Wage discrimination: Reduced form and structural estimates. *Journal of Human Resources*. 1973;8(4):436–455.
- Oaxaca R. Male-female wage differentials in urban labor markets. *International Economic Review*. 1973;14(3):693–709.
- Livingston G, Huntley J, Liu KY, et al. Dementia prevention, intervention, and care: 2024 report of the Lancet standing Commission. *The Lancet*. 2024;404(10452):572–628.

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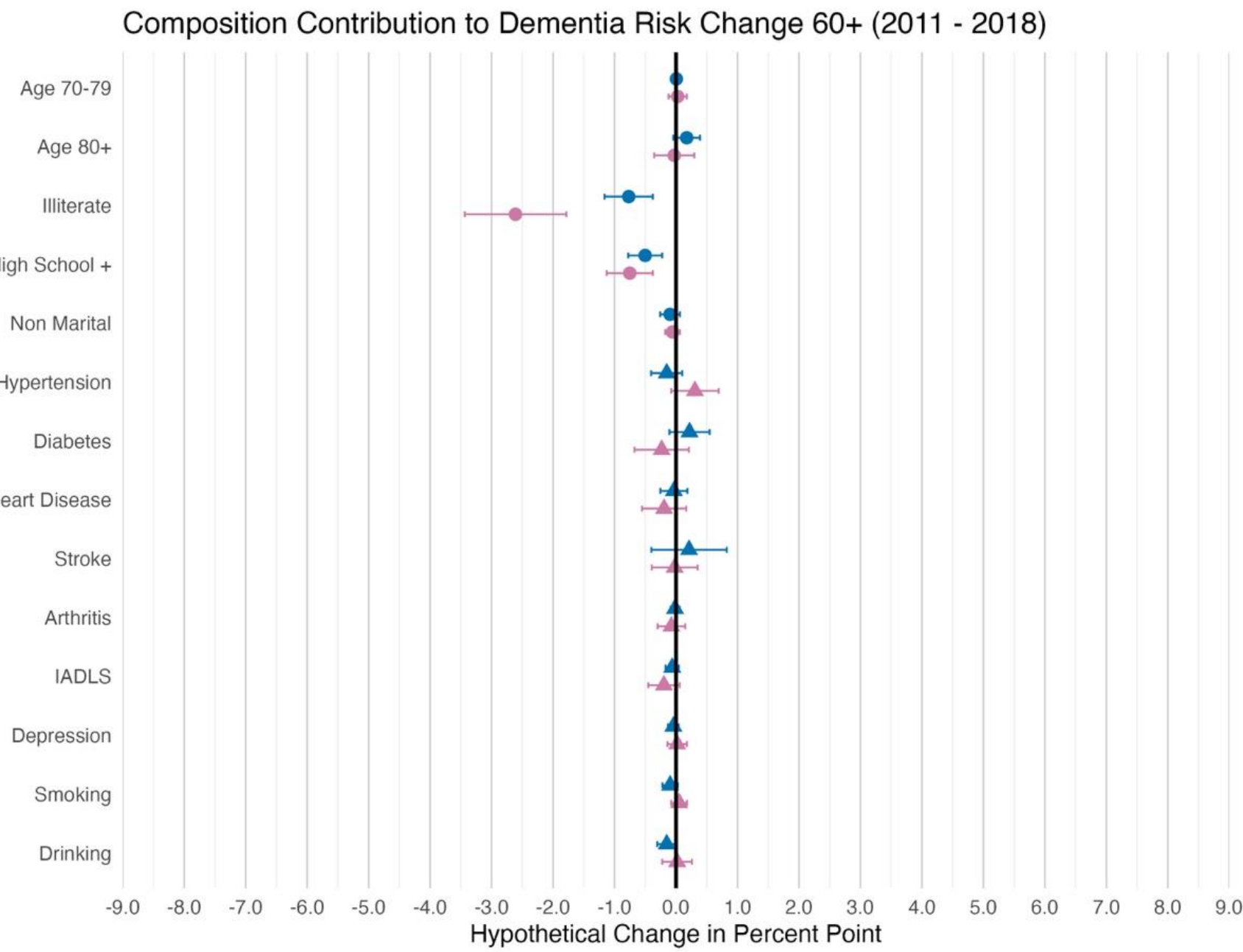


Fig 1. Composition (endowment) contribution to prevalence change. Negative composition values: shifts (mainly rising education) that lowered prevalence. Positive coefficient values: strengthened associations that raised it.

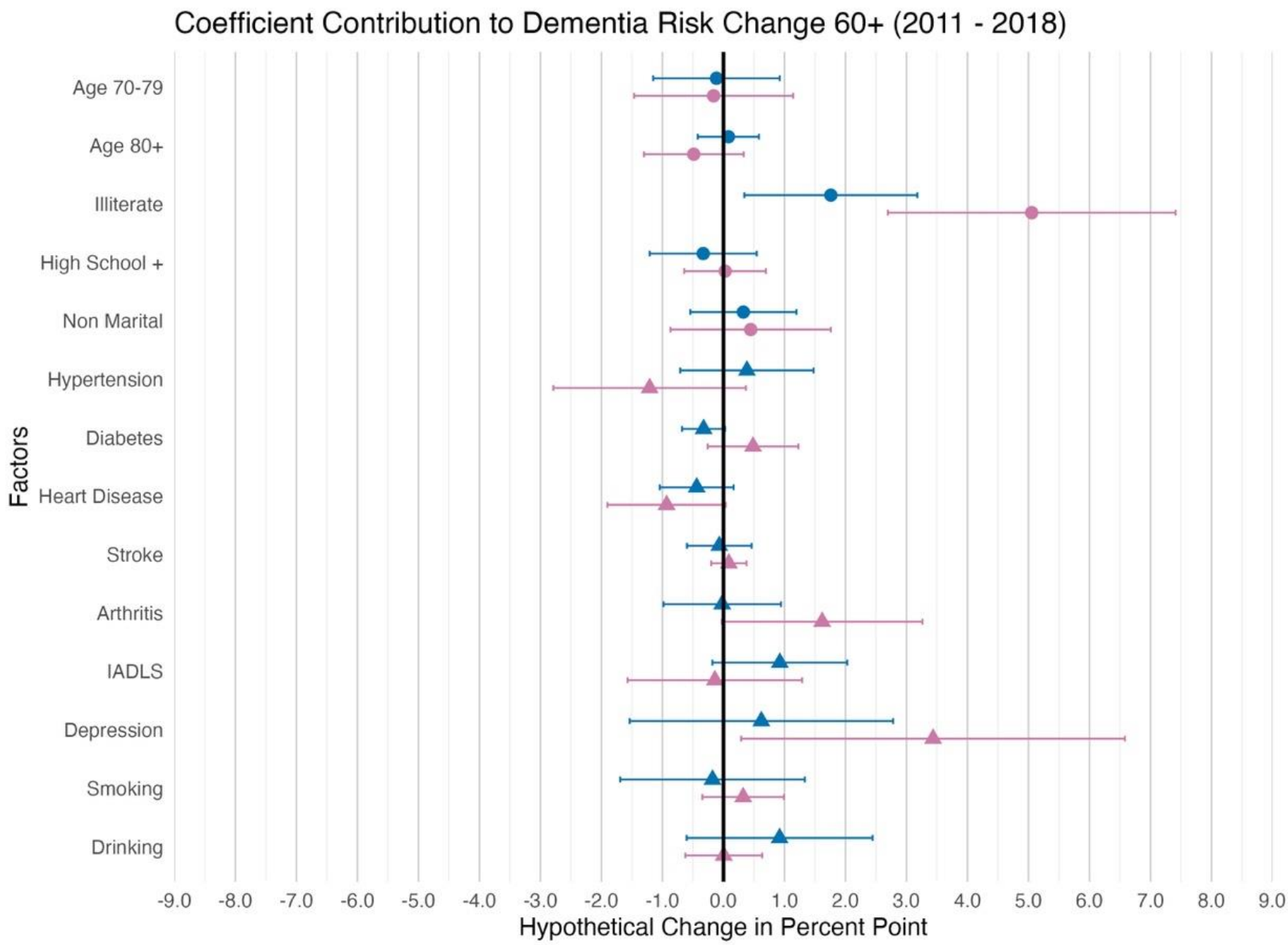


Fig 2. Coefficient contribution to prevalence change. Negative composition values: shifts (mainly rising education) that lowered prevalence. Positive coefficient values: strengthened associations that raised it.