

Complex cross-continental interactions between ABO and Rh blood group phenotypes and exposome indicators

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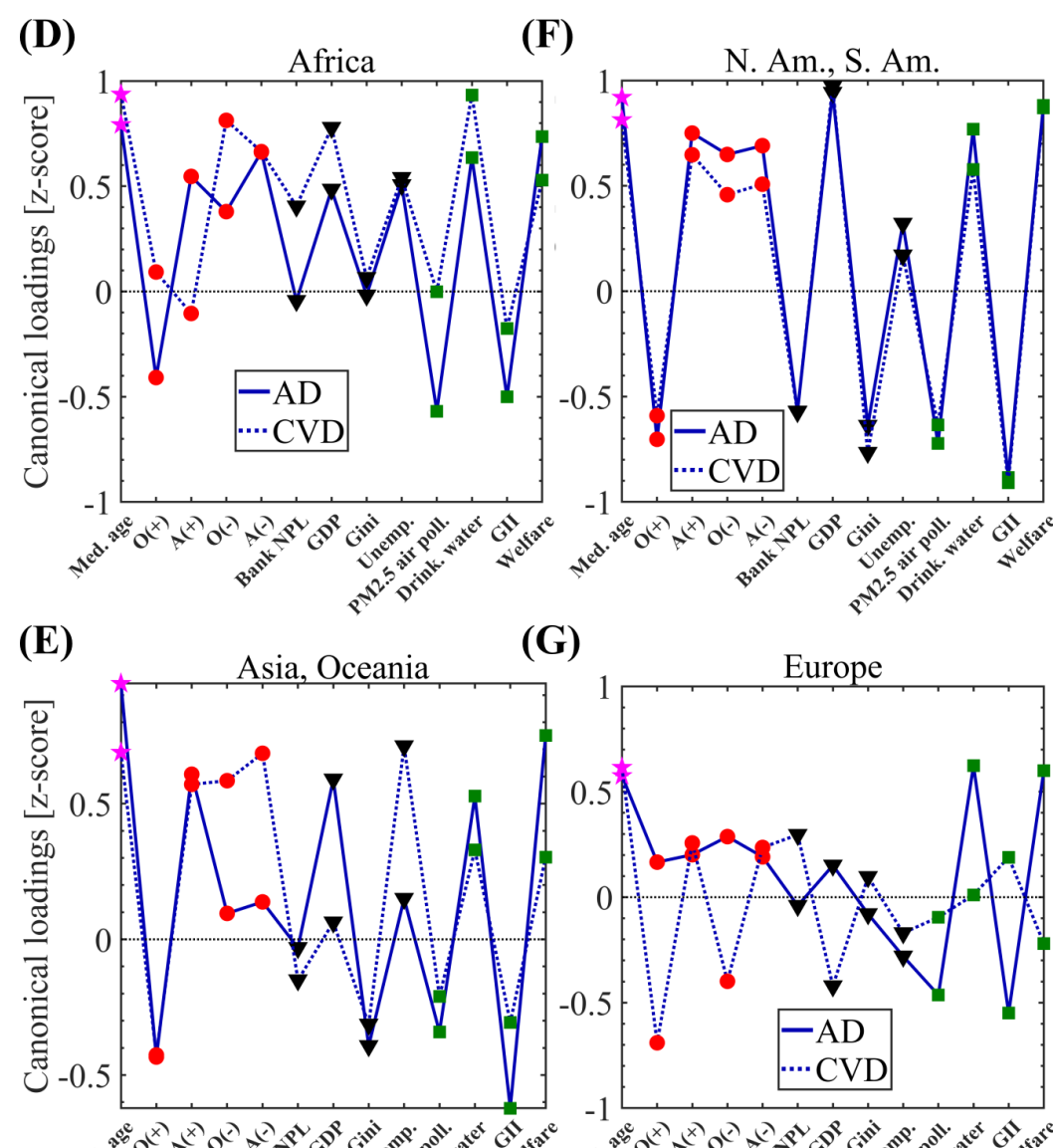
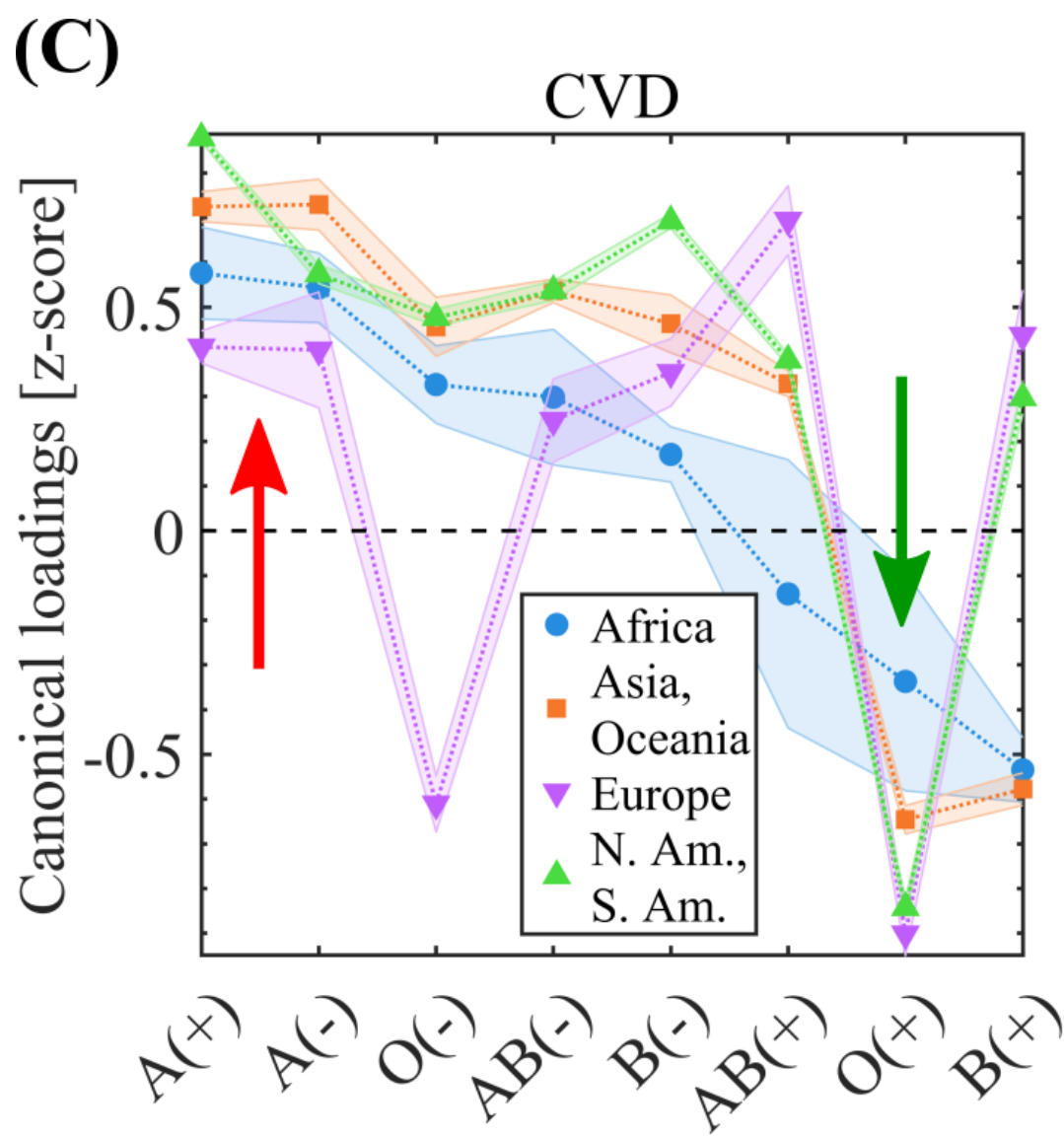
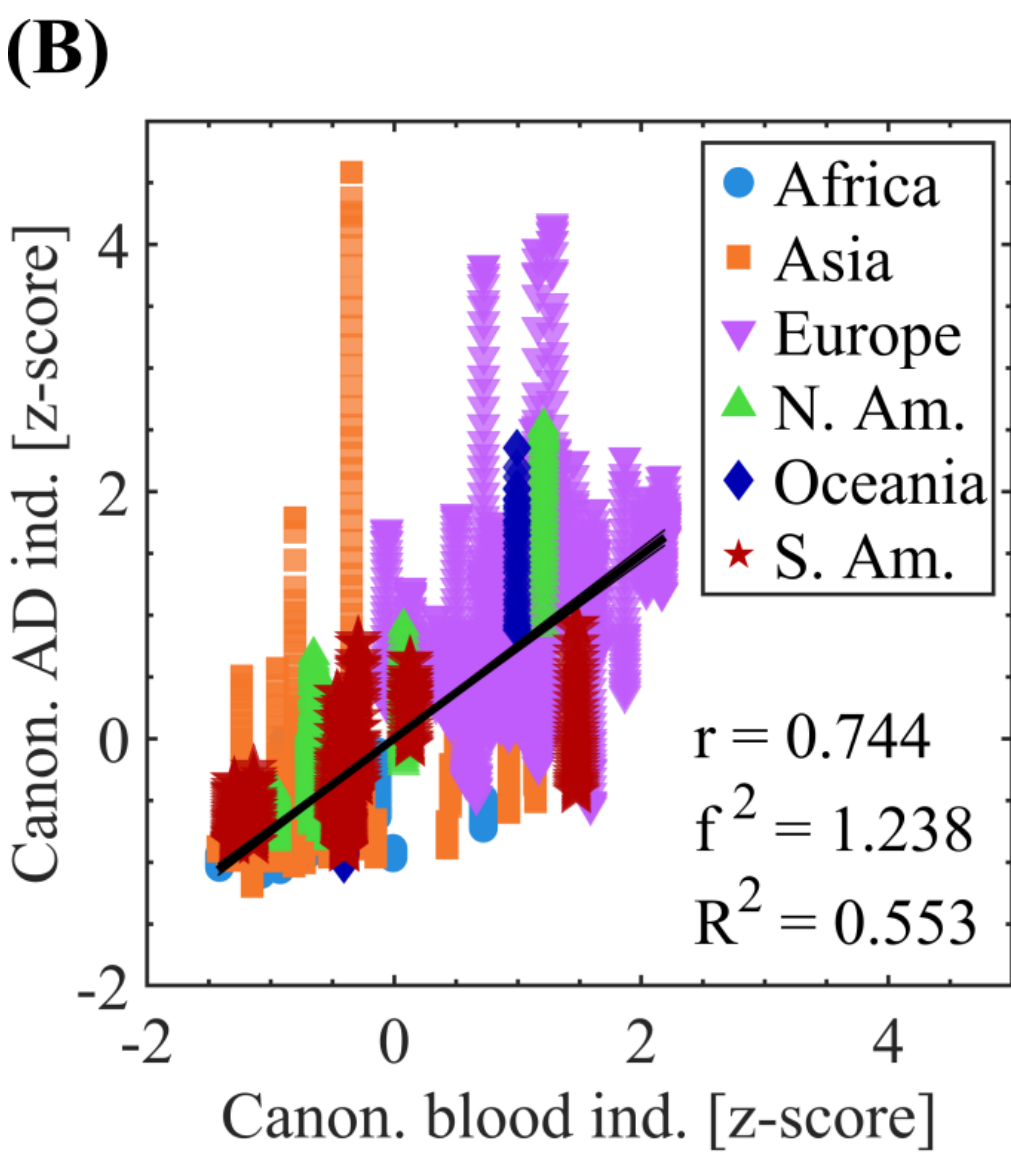
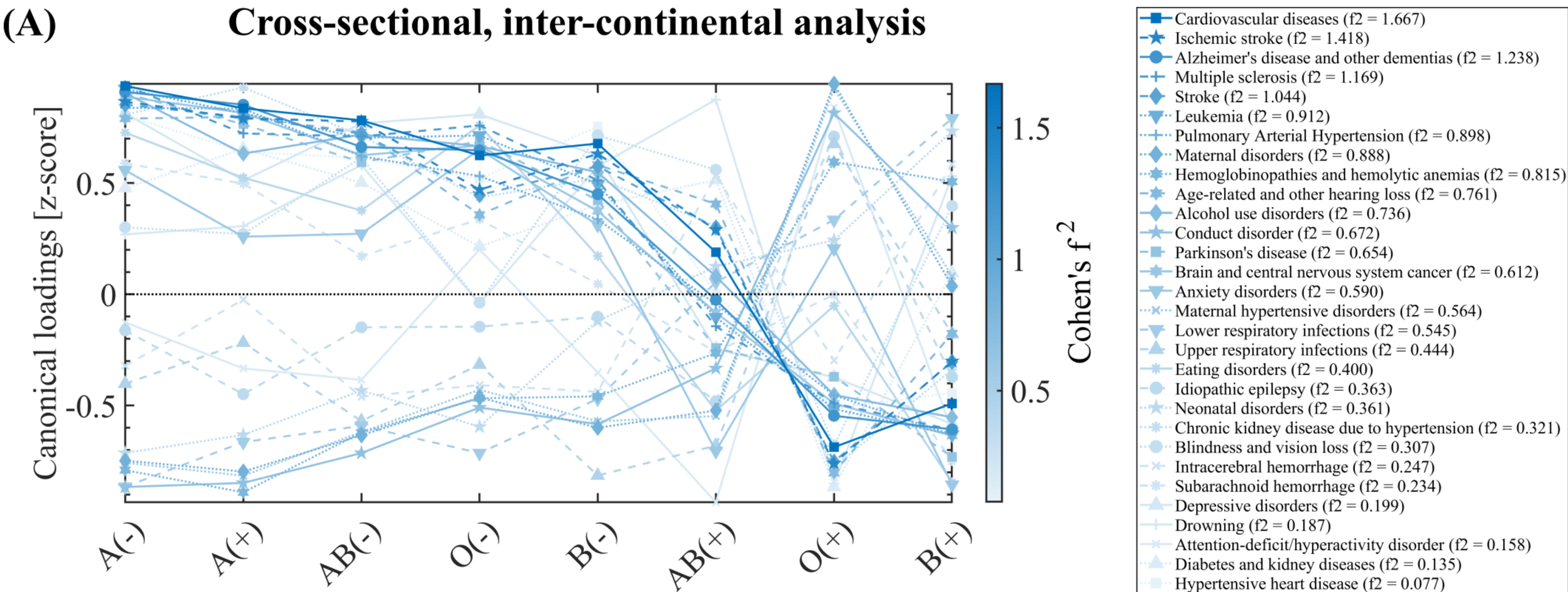


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Cross-sectional study was conducted using Canonical Correlation Analysis (CCA) on population-level aggregated data from the Global Burden of Disease and World Bank databases including prevalence estimates of 30 diseases across 126 countries spanning 6 continents. We elucidated latent dimensions underlying multivariate associations among ABO and Rh blood group phenotypes and dementia-spectrum outcomes (Figures 1A-C). Moreover, we revealed continent-dependent interactions among the ABO phenotypes, economic and exposome indicators (Figures 1D-G).

(A) Cross-sectional, inter-continental analysis



CAPTION

Canonical Correlation Analysis (CCA) applied to prevalence of ABO and Rh blood groups considered collectively (indep. indicators) and 30 diseases considered individually (dependent indicators), across 126 countries spanning 6 continents. (A) ABO canonical loadings (association profile). (B) Scatter plot between the canonical indicators for Alzheimer's Disease (AD) and ABO phenotypes. (C) ABO canonical loadings for Cardiovascular Diseases (CVD) in each continent. (D) Multimodal canon. loadings for AD and CVD for Africa. (E) Same as in (D) for Asia, Oceania. (F) Same as in (D) for N. Am., S. Am. (G) Same as in (D) for Europe.

REFERENCES

Legaz A, Moguilner S,... Dellavale D,... Hernandez H, Ibáñez A (2026), The exposome of brain aging across 34 countries, Nature Medicine 32(5):1838-1851. DOI:10.1038/s41591-026-04302-z

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