



Associations of Cognitive Impairment With Mortality Risk Across the US, Mexico, and India

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INTRODUCTION

- Cognitive impairment is a predictor of mortality risk in later life^{1,2}
- Previous studies have shown a gradient in mortality risk, with dementia associated with the highest risk, followed by mild cognitive impairment (MCI) and then normal cognition^{3,4}
- Cross-national differences in healthcare access and cognitive assessment methods may contribute to variability in the cognition–mortality association, highlighting the need for harmonized international comparisons^{5,6}
- We examined associations between cognition and mortality risk among older adults in the United States (US), Mexico, and India, using harmonized cognitive measures and diagnostic classifications.

METHODS

Data

- We used data from three Harmonized Cognitive Assessment Protocol (HCAP)-network studies: the Health and Retirement Study-HCAP (HRS-HCAP), Mexican Cognitive Aging Ancillary Study (Mex-Cog), and Longitudinal Aging Study in India–Diagnostic Assessment of Dementia (LASI-DAD).
- We included adults aged ≥64 years: HRS-HCAP (US; n = 3,283), Mex-Cog (Mexico; n = 1,395), LASI-DAD (India; n = 2,824)

Measures and Analysis

- Cox proportional hazards models with sampling weights
 - Predictors:
 - 1) General cognitive performance (GCP), domain-specific cognition (orientation, language, memory, executive, visuospatial functioning),
 - 2) Harmonized diagnostic classification (normal, MCI, dementia)
 - Outcome: survival months (7-9 year follow-up)
 - Covariates: sociodemographic (age, sex, race/ethnicity(US), caste(India), marital status, education, household wealth), health-related factors (chronic conditions, smoking history, binge drinking history, BMI, depression)

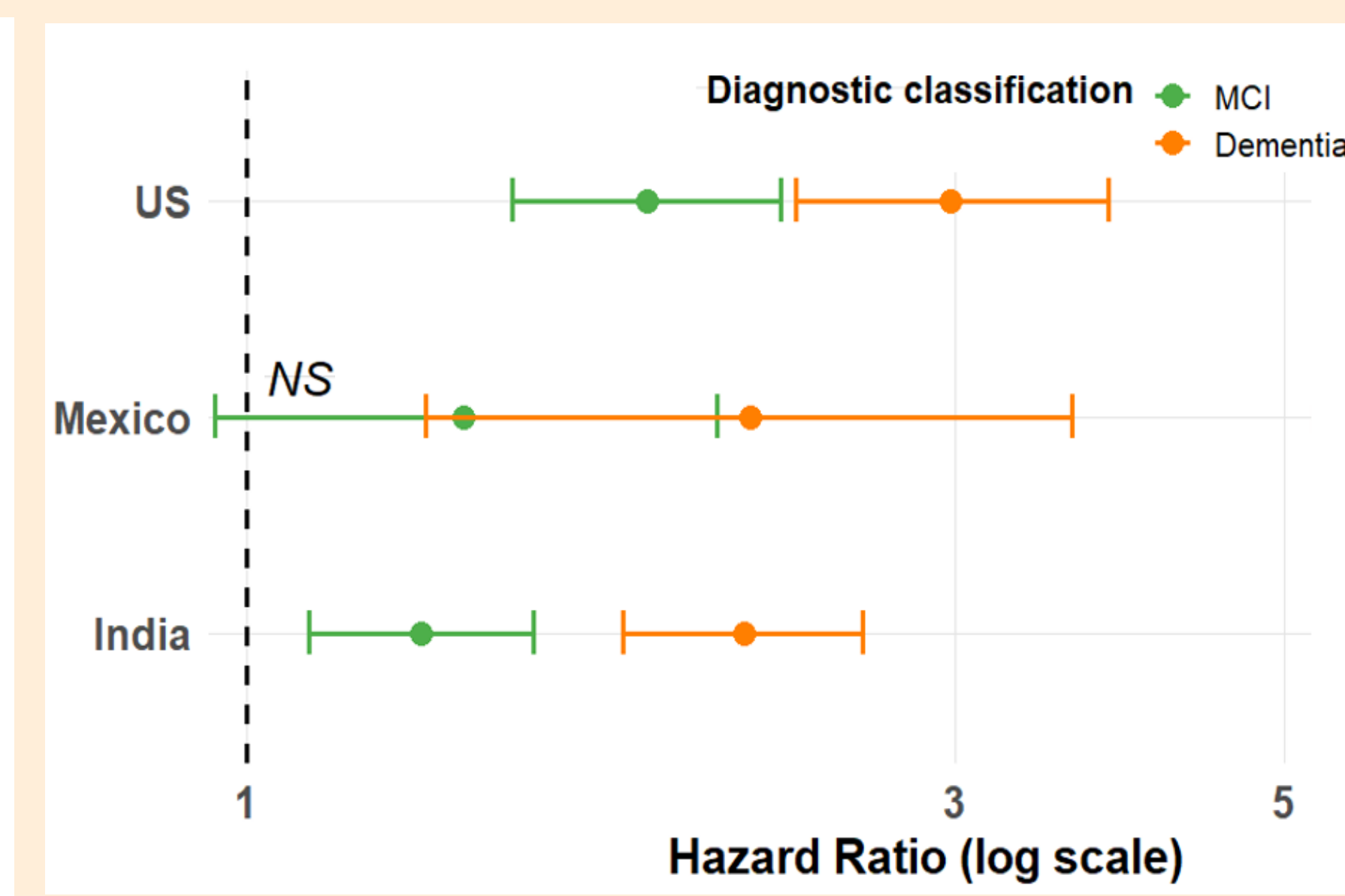
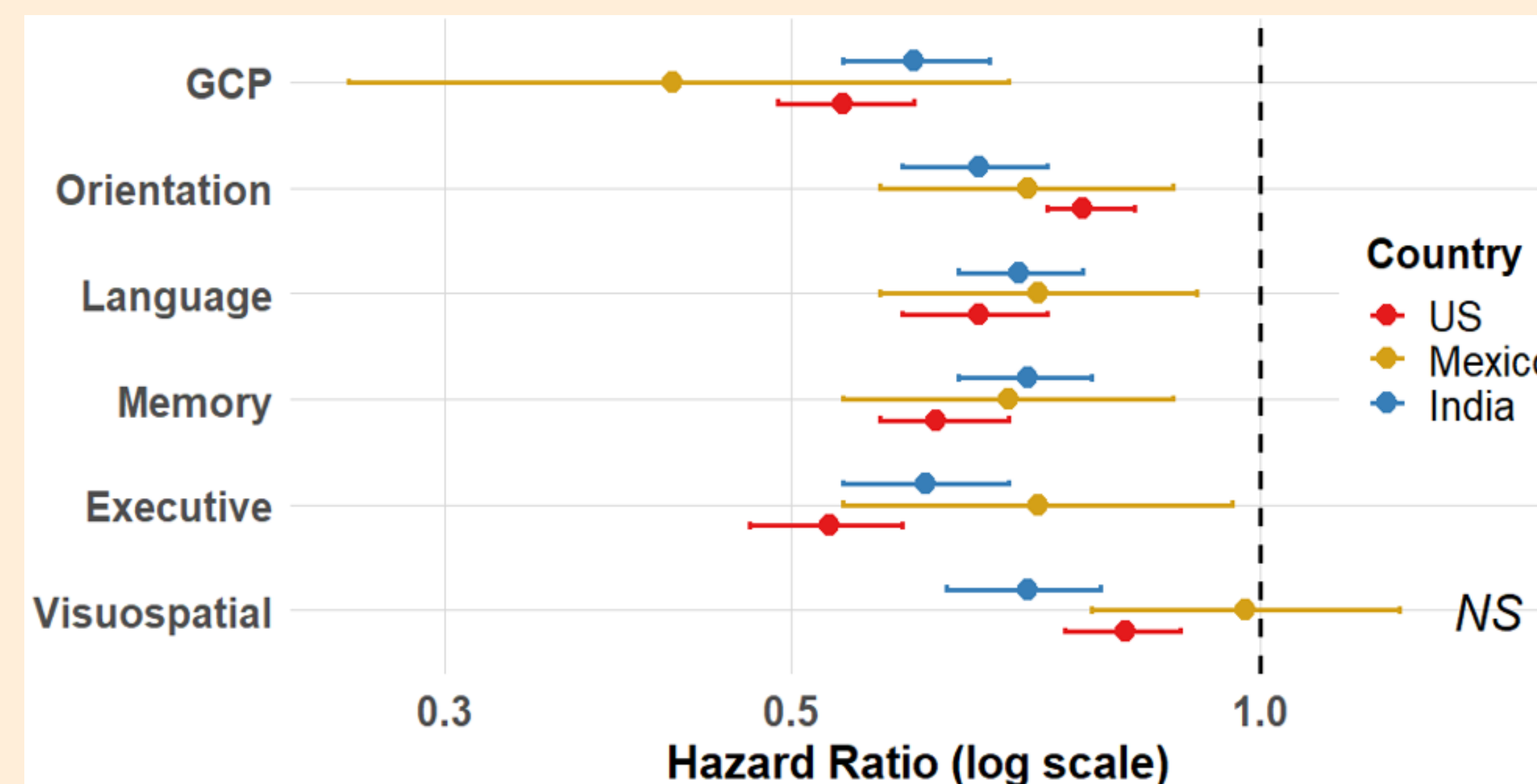
Characteristics of the analytic samples

	US	Mexico	India
	M(SD)	M(SD)	M(SD)
Age	75.8(7.5)	73.5(7.2)	71.8(7.0)
% of female	61%	56%	51%
% with upper secondary+	83%	9%	17%
Follow-up months	57.6(19.6) range:0-98	83.4(28.4) range:0-105	48.7(16.1) range:0-80
% of the deceased	25%	33%	29%

Note. US sample: 71% Non-Hispanic White, 16% Non-Hispanic Black, 11% Hispanic, and 2% Other race/ethnicity.
India sample: 24% Scheduled Caste or Scheduled Tribe, 43% Other Backward Class, and 34% No caste or Other caste.

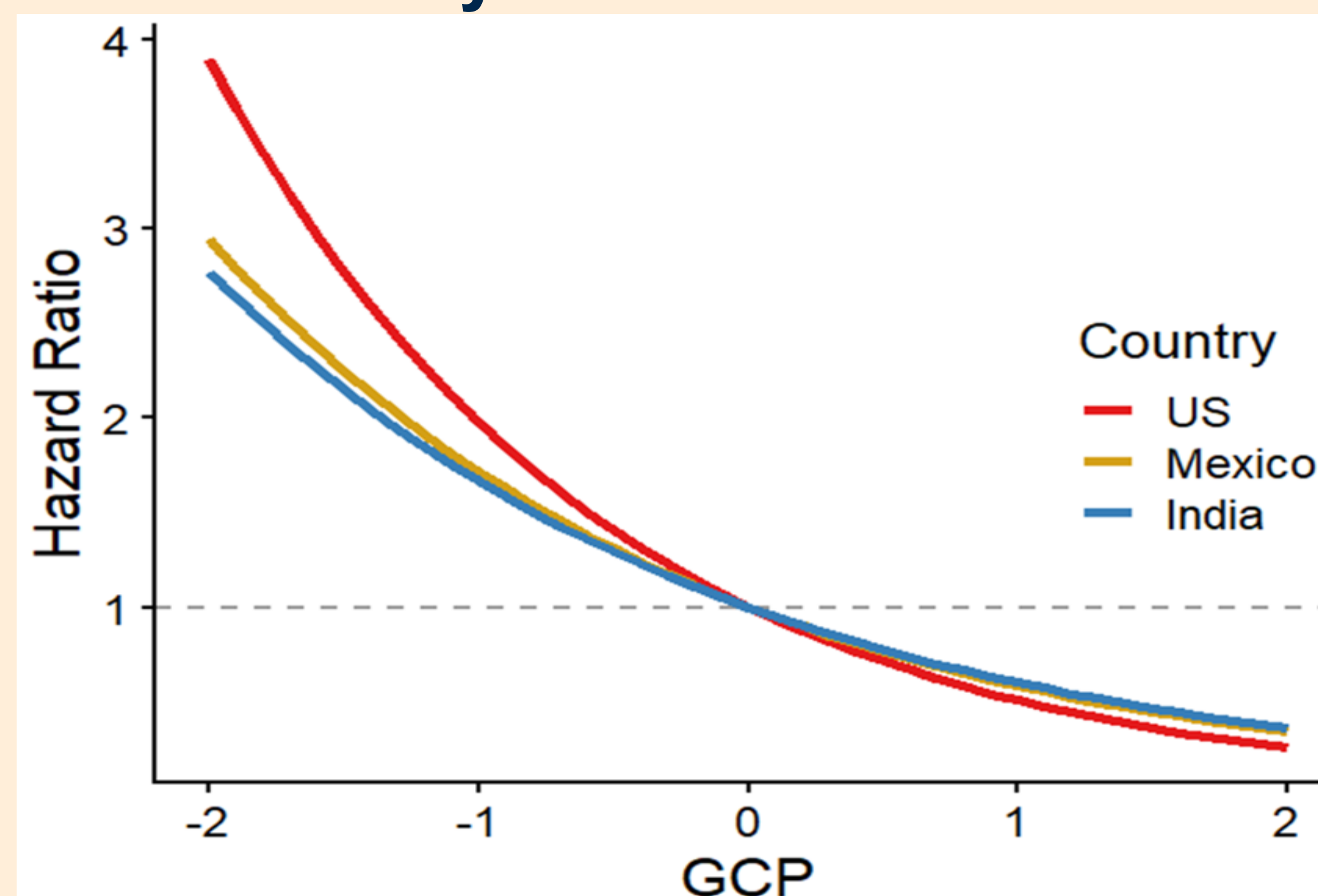
RESULTS

Associations of Cognitive Functioning With Mortality Risk



- Lower cognitive functioning was associated with higher mortality risk across countries, except for visuospatial functioning in Mexico.
- Across countries, MCI and dementia were associated with elevated mortality risk compared to normal cognition, with the strongest associations observed for dementia.

Cross-national Comparisons Between General Cognitive Performance And Mortality Risk



Note. 'Race/ethnicity(US)' and 'Caste(India)' were not included as a covariate.

- The association between cognition and mortality risk appears to be stronger in the US compared to Mexico or India, although the association was statistically significant in the Indian sample($p=.045$).
- Similar patterns are observed in other domains.
- MCI and dementia: The MCI/dementia–mortality association was stronger in the US than in India and Mexico, with statistically significant interaction effects observed only in India.

DISCUSSION

- Cognitive impairment is associated with increased mortality risk across countries, suggesting a robust and generalizable link between cognitive health and survival.
- The strength of the association may be stronger in the US than in Mexico and India.
- These findings highlight both the role of cognitive health as an indicator of survival and the importance of contextual factors in cognition–mortality associations, which may vary due to measurement validity or underlying multimorbidity.

Funding

NIA 1RF1AG088009-01

Reference

1. Dewey et al., 2001
2. Liang et al., 2021
3. An & Liu, 2016
4. Luck et al., 2017
5. Santabábara et al., 2016
6. Seeher et al., 2022

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