Cross-National Comparisons of the Effects of Hospitalization on Cognition

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Background

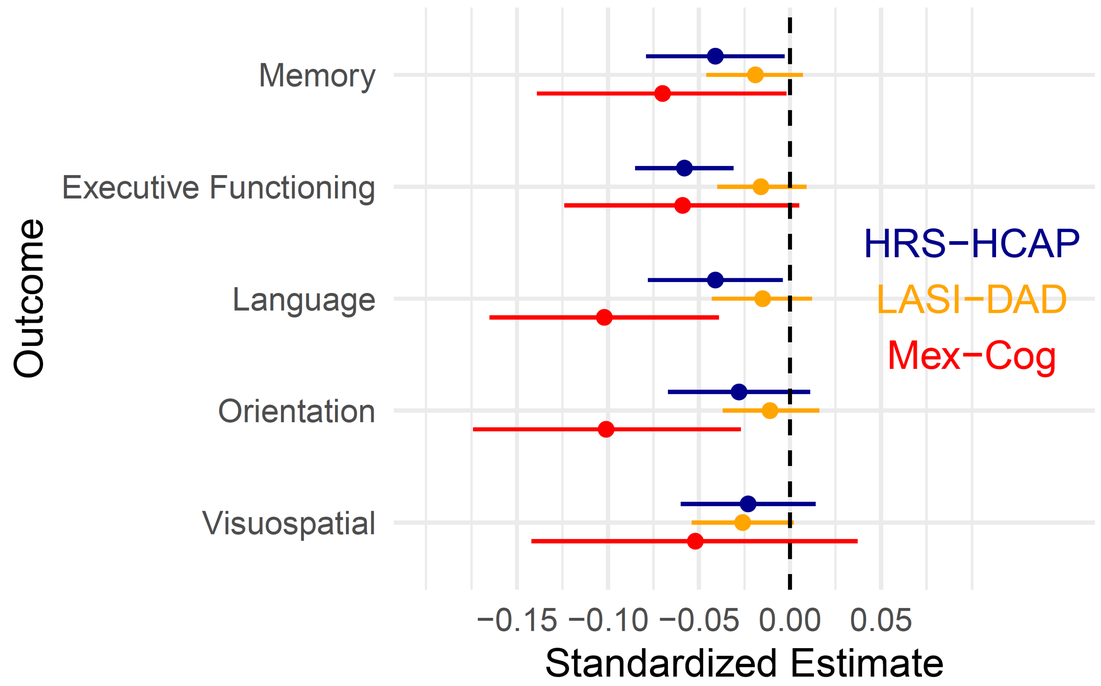
- **Hospitalization** in older adulthood is **linked to** subsequent **cognitive decline** and increased **dementia risk**, yet most evidence comes from high-income countries.
- It is unclear whether **associations** between hospitalization and cognitive outcomes **generalize across diverse** healthcare systems and sociocultural **contexts.**
- We examined **cross-national associations between recent hospitalization, cognitive performance** across multiple domains, **and risk of mild cognitive impairment (MCI) or dementia** in 3 nationally representative cohorts.

Methods

- 3 Harmonized Cognitive Assessment Protocol (HCAP) network studies: **HRS-HCAP** (United States), **LASI-DAD** (India), and **Mex-Cog** (Mexico)
- **Predictor:** self-reported recent hospitalization
- **Linear regression models:** association between hospitalization and domain-specific cognition (domains: memory, executive functioning, language, orientation, visuospatial ability)
- **Ordinal regression models:** association between hospitalization and cognitive status (unimpaired, MCI, dementia)
- **Covariates:** age, sex, education, number of medical comorbidities, health insurance, net worth, rurality, race/ethnicity for HRS-HCAP, and caste for LASI-DAD

Results

Figure 1. Associations of Hospitalization with Cognition



- **Hospitalization** was **negatively associated** with cognition **across all domains**, though not always significant
- In **HRS-HCAP**, hospitalization was negatively associated with **memory, executive functioning, and language**
- In **Mex-Cog**, hospitalization was negatively associated with **memory, language, and orientation**
- **No associations** achieved statistical significance **in LASI-DAD**

Table 2. Associations of Hospitalization with MCI & Dementia Diagnosis

Cohort	MCI or Dementia Diagnosis
HRS-HCAP	1.07 (1.02, 1.12)
LASI-DAD	0.99 (0.95, 1.04)
Mex-Cog	1.12 (0.97, 1.29)

- Hospitalization was associated with **higher odds of** an MCI or dementia **diagnosis in HRS-HCAP**
- The association with hospitalization and diagnosis was **not significant in LASI-DAD or Mex-Cog**

Table 1. Sociodemographic characteristics by group

	Self-Reported Hospitalization					
	HRS-HCAP (n=3,496)		LASI-DAD (n=4,096)		Mex-Cog (n=2,042)	
	Yes (n=1,121)	No (n=2,363)	Yes (n=370)	No (n=3,689)	Yes (n=272)	No (n=1,769)
Age, M(SD)	76 (8)	74 (7)	70 (7)	70 (8)	70 (9)	69 (9)
Female, n(%)	657 (56)	1,431 (57)	186 (50)	2,009 (55)	175 (64)	1,027 (58)
Years of Education, M(SD)	13.1 (4.2)	13.3 (4.2)	4.2 (4.4)	3.8 (4.7)	5.4 (4.5)	5.3 (4.4)
Rurality, n(%)	280 (26)	673 (29)	232 (63)	2,281 (62)	62 (23)	512 (29)
Medical comorbidities, M(SD)	2.9 (1.3)	2.1 (1.3)	1.5 (1.1)	1.0 (1.0)	1.8 (1.2)	1.1 (1.0)
Net worth in 2016 US Dollars, M(SD)	594,542 (1,575,959)	706,629 (1,366,955)	255,099 (1,152,334)	155,331 (545,639)	163,118 (265,804)	181,271 (337,408)
Insured, n(%)	1,115 (100)	2,327 (99)	102 (28)	753 (20)	265 (97)	1,586 (90)

Discussion

- **Recent hospitalization** is **associated with worse cognitive performance** across diverse national contexts and **with elevated risk of MCI or dementia in the United States**.
- **Cross-national variation in effect magnitude** may reflect differences in healthcare access, hospitalization thresholds, and post-hospital care.
- These findings highlight hospitalization as a **potentially important marker of cognitive vulnerability** in older adults and underscore the **need for longitudinal studies** to clarify causal pathways and identify modifiable targets for intervention.

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