

Cognitive Aging in Ghana: Implementing HCAP in a Sub-Saharan African Low-Middle Income Country

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HCAP
NETWORK



POPULATION AGING
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Site of Pilot Data collection: Navrongo Demographic and Health Surveillance Site (NDHSS)

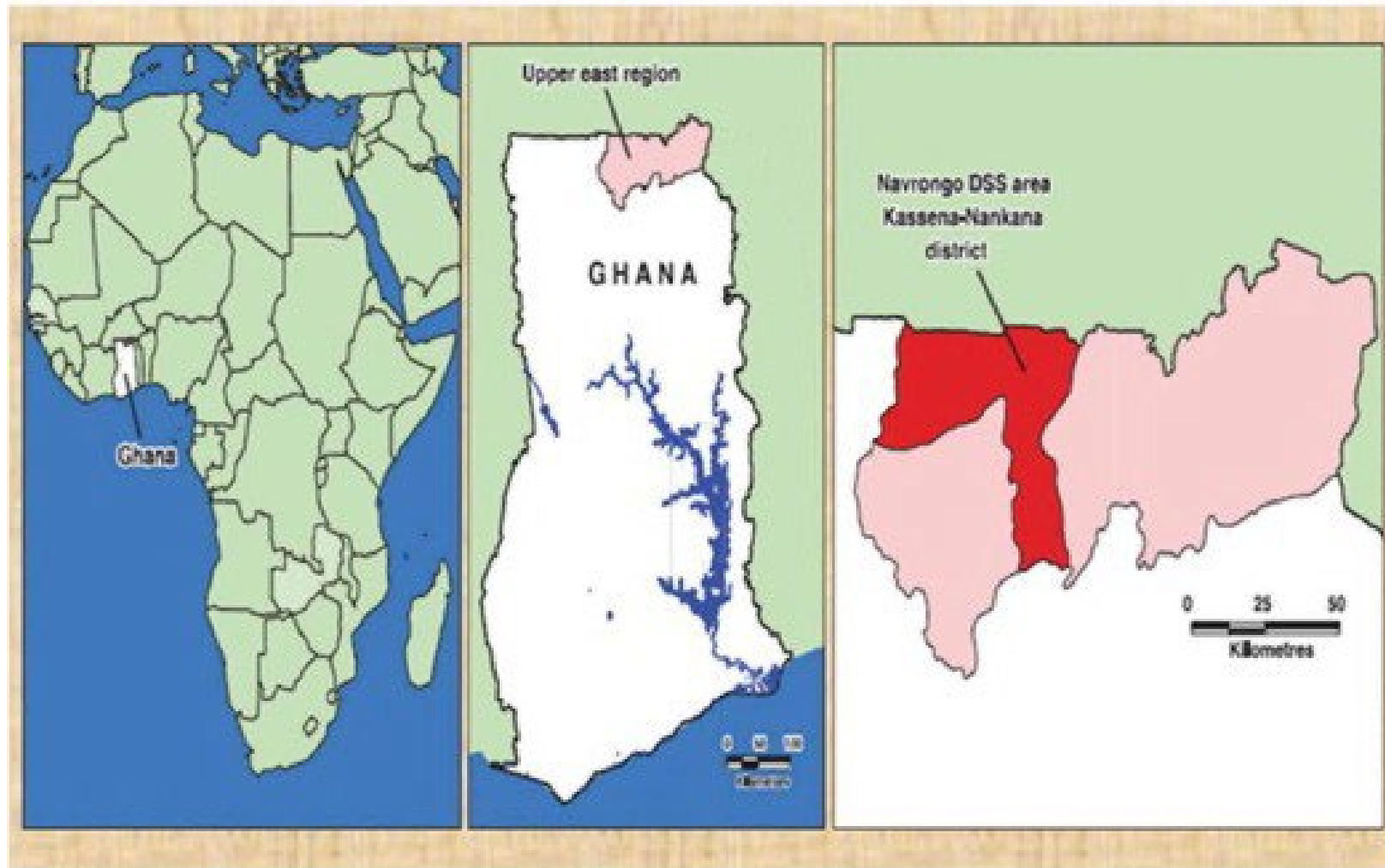


Figure 1. Maps showing Ghana in Africa, Kassena Nankana district in the upper east region and the Navrongo HDSS coverage area.

Design of the Pilot Study

Two components:

respondent (ages 50+) and caregiver/informant interviews

Respondent Sample (N=521 out of 800 initially listed)

Drawn from two prior studies carried out in the NDHSS

1. INDEPTH-SAGE Adult Health and Ageing Survey (INDEPTH-SAGE) fielded in January – April 2007
 - ✓ 206 surviving respondents ages 67-98
2. Genomic and Environmental Risk Factors to Cardiometabolic Diseases in Africans---Africa Wits-INDEPTH Genomic (AWI-Gen) study fielded in 2015
 - ✓ 315 respondents ages 50-69

All interviews were conducted in person by trained interviewers.

Sample respondents in the NDHSS

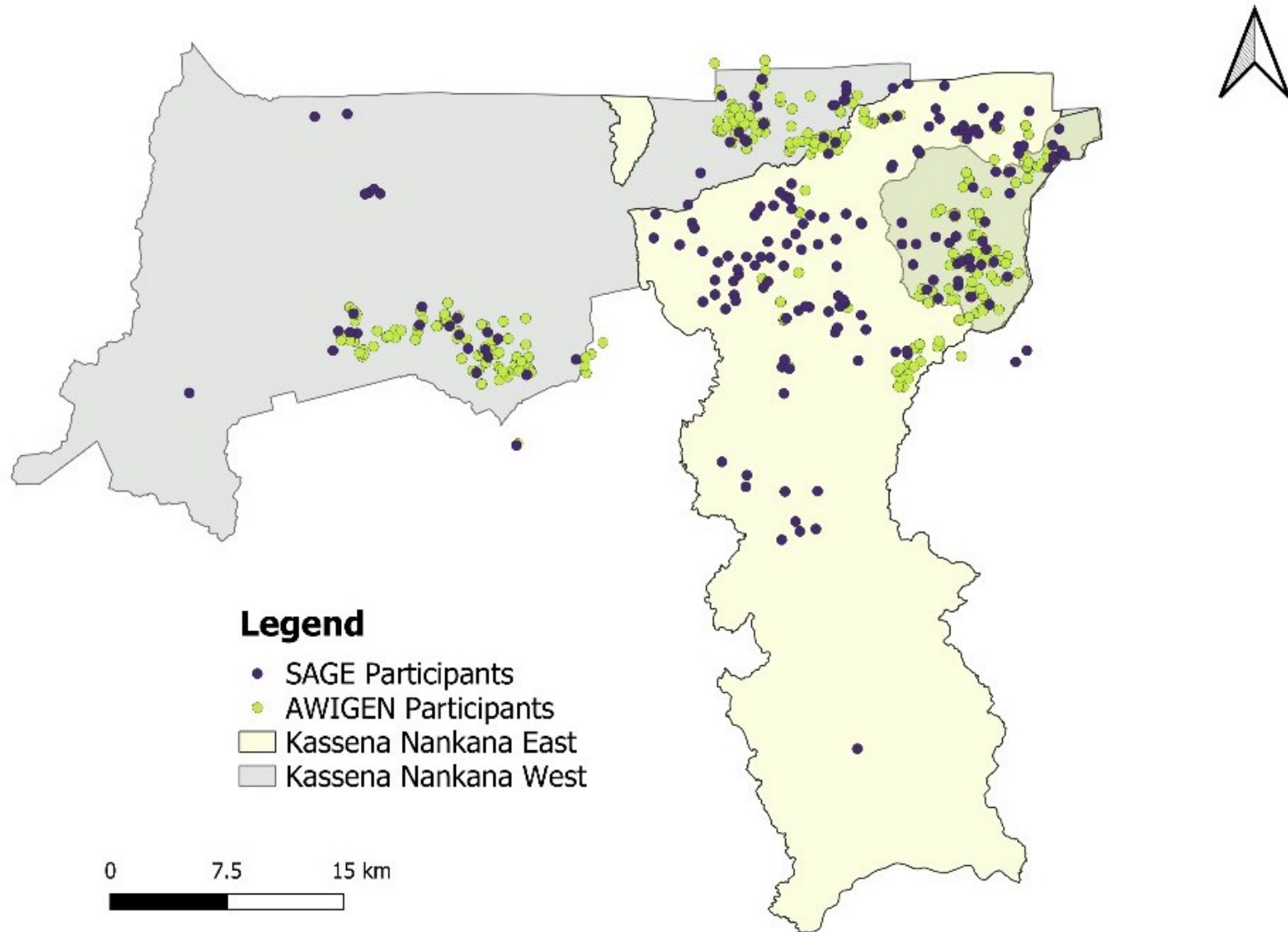


Table 1: Respondent Sample Characteristics compared to Ghana 2021 Census, Ages 50+

	Ghana HCAP	Census		
		Navrongo	Upper East	Ghana
Sample size	521	27,513	177,024	3,758,162
Female (%)	60.3	61.0	60.2	54.6
Age (mean)	64.8	65.7	65.4	65.5
Never attended school (%)	78.9	79.8	86.7	43.8
Married or cohabiting (%)	51.1	62.6	67.5	62.0
Widowed (%)	44.5	29.5	27.7	23.2

Table 1: Respondent Sample Characteristics

	Ghana-HCAP		
	Total	Male	Female
Sample size (%)	521	207 (39.7)	314 (60.3)
Age (mean)	64.8	62.6	66.3
Never attended school (%)	78.9	68.1	86.0
Married or cohabiting (%)	51.1	86.5	27.7
Widowed (%)	44.5	6.8	69.4
Interview in English (%)	8.3	12.1	5.7
Interview in Kassem (%)	51.6	51.2	51.9
Interview in Nankam (%)	40.1	36.7	42.4
Blind (%)	6.1	4.8	7.0
Physical limitations (%)	6.9	4.8	8.3
Can't count (%)	71.4	55.1	82.2
Can't recognize numbers (%)	45.7	31.4	55.1
Can't read nor write (%)	89.6	81.2	95.2

HCAP Instrument

Modeled after HCAP instruments: India (LASI), Kenya (KLPS, LOSHAK), South Africa (HAALSI), Chile (Chile-Cog), and items from Malawi (MLSFH).

1. **Orientation** (today's date, day of the week, month, year, season, country, name of town/community/village, president)
2. **Memory** (immediate and delayed 3- word, 10-word, and short and long story recall; 10- word recognition; **delayed constructional praxis**)
3. **Executive functioning** (forward and backward day naming, **symbol cancellation**, forward and backward digit span, go-no-go, token test, hand movement sequencing test, **trail making, Serial 7**)
4. **Language** (object naming, sentence, animal naming, CSI-D)
5. **Visuospatial** (pentagon, immediate constructional praxis)

HCAP Survey

Other components from the MLSFH and Awi-Gen

1. Sociodemographic characteristics (education, marital status, household assets, type of cooking fuel; food insecurity)
2. Activities of Daily Living (ADLs)
3. Instrumental Activities of Daily Living (IADLs),
4. Mental health (anxiety, depression)
5. Loneliness
6. Health behaviors (tobacco and alcohol use)
7. Blood pressure, height and weight

Summary by HCAP Domain

Domain	Obs.	Mean	Std. dev.	Min	Resp. Max	HCAP Max
Orientation	519	5.37	1.95	0	8	8
Memory	457	101.47	31.86	17	165	197
Executive function	454	39.59	17.17	1	100	109
Language	484	23.67	3.64	11	38	38
Visuospatial	452	3.78	3.33	0	12	12
Total score	417	176.21	47.43	45	303	364

Don't know has been coded 0

Figure 1. Ghana-HCAP domain scores and 95% CI by age and sex, 2024

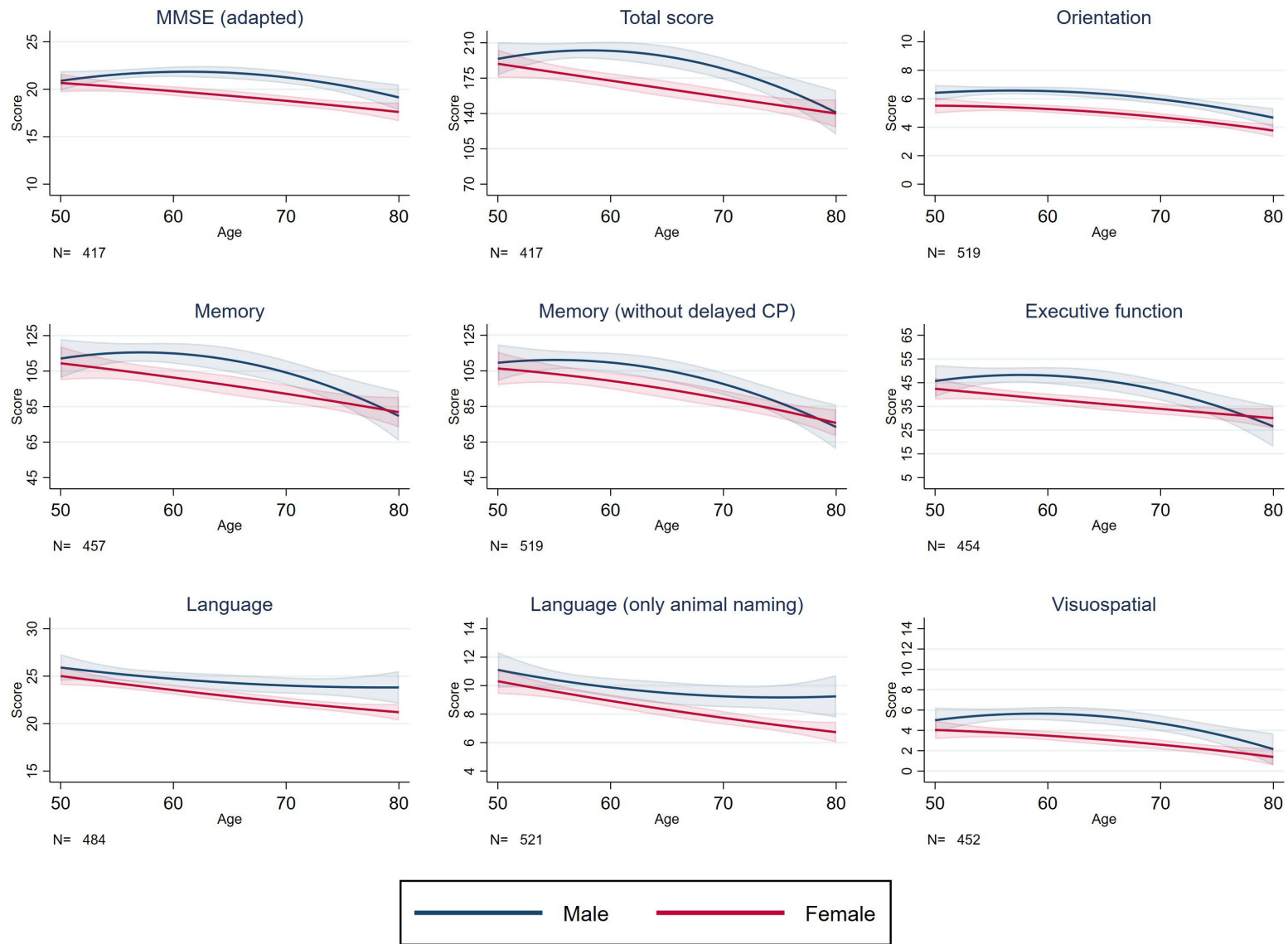


Figure 2. Ghana-HCAP domain scores and 95% CI by age and education, 2024

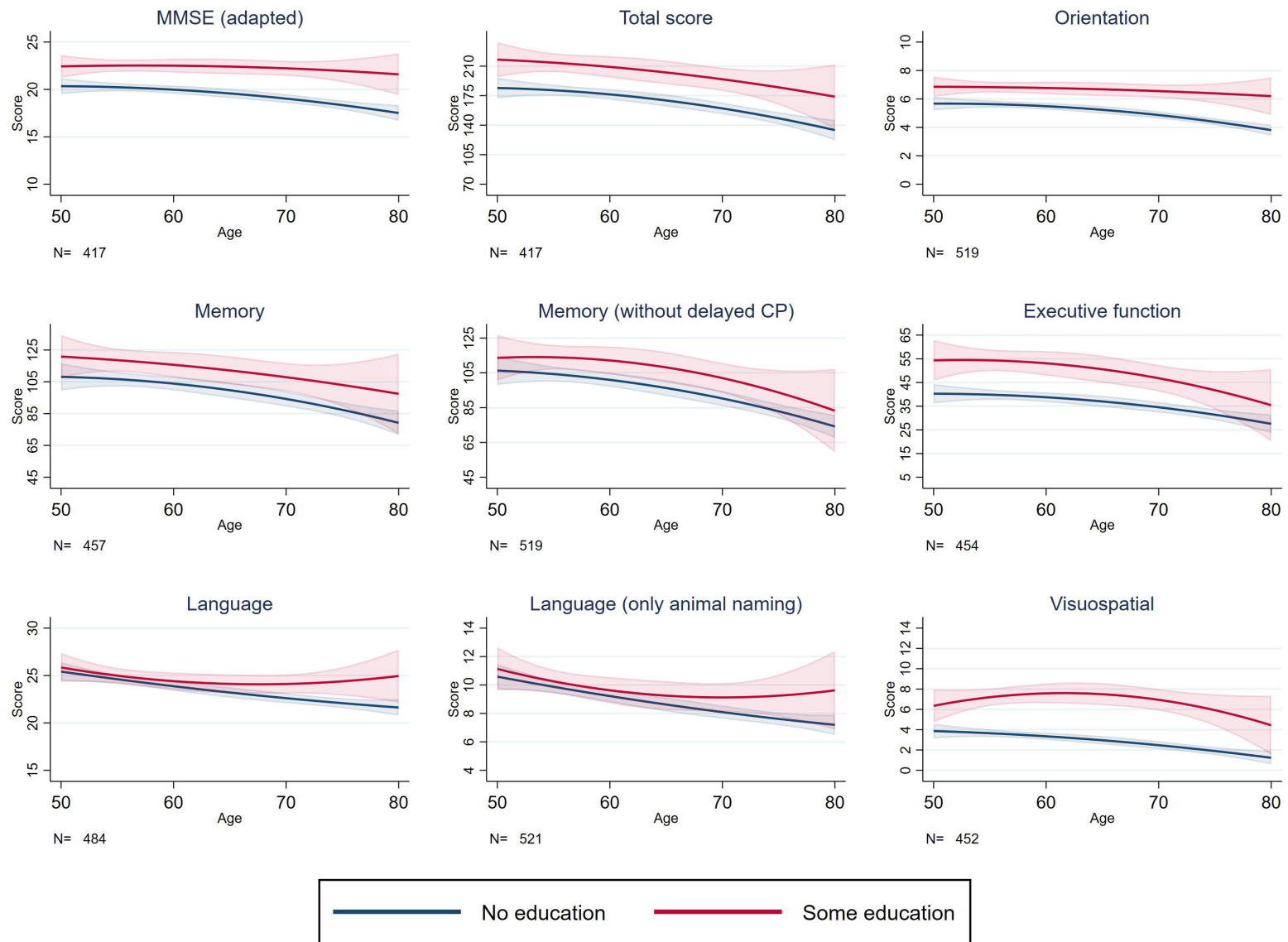
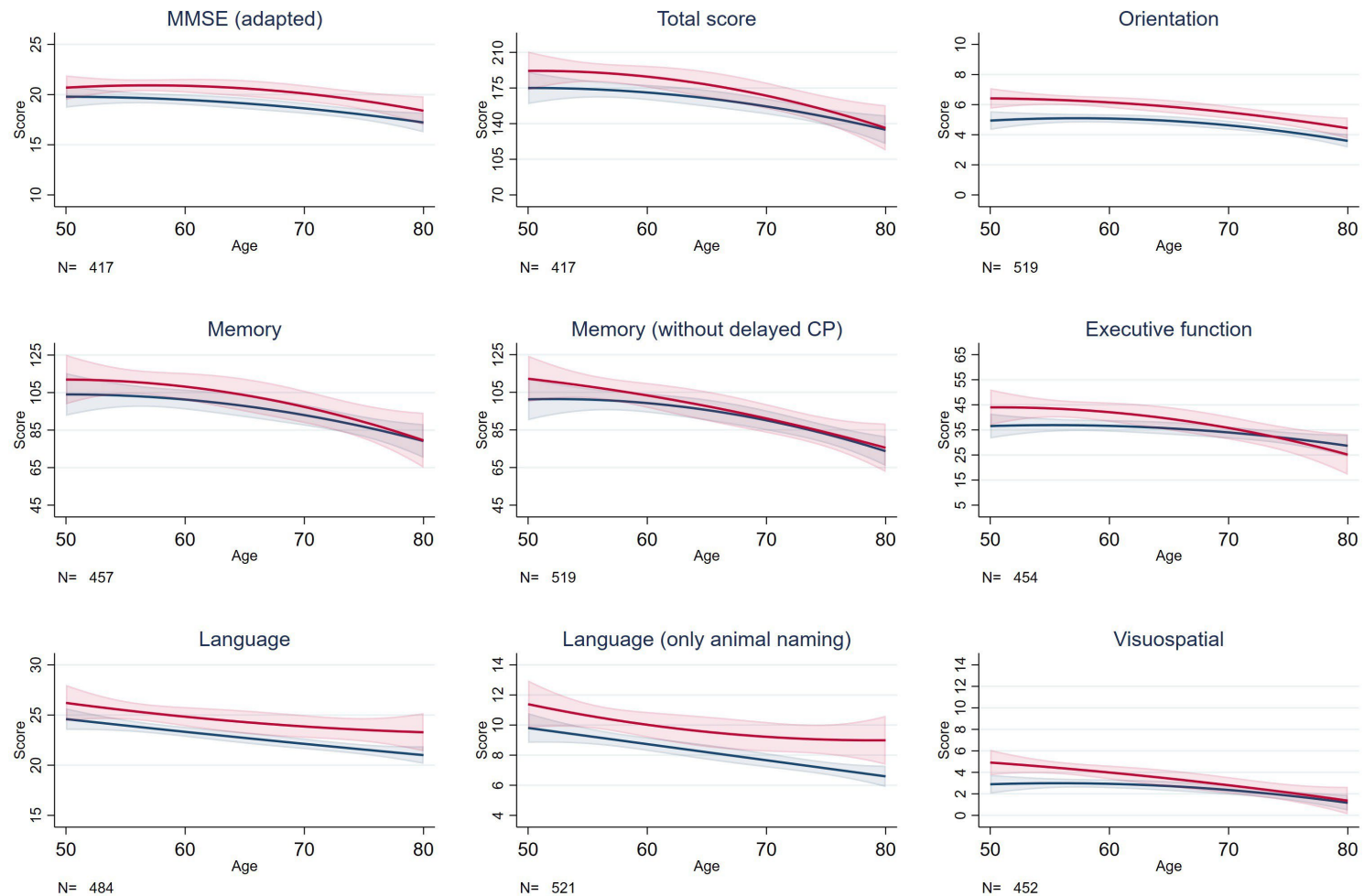


Figure 3. Ghana-HCAP domain scores and 95% CI by age and sex among those with no education, 2024



— Female, no education — Male, no education

Design of the Pilot Study

Caregiver/Informant Sample (N=102)

- a. Respondents were asked to nominate 3 individuals who were either their caregivers or knew their health, memory and daily activities well.
- b. Caregivers/informants were selected based on the distribution of the respondents' overall HCAP score, excluding items that could not be performed by blind individuals.
- c. For the respondent caregiver/informant to be selected, the HCAP score had to fall in the bottom 25th percentile (N=127).

All interviews were conducted in person by trained interviewers.

Pilot Caregiver/Informant Questionnaire Domains

1. Eligibility determination
2. Demographic characteristics, including relationship to respondent, length of time known respondent, how often see respondent etc.
3. Health history of HCAP respondent
4. JORM – IQCODE test
5. Blessed test parts 1 and 2
6. Activities
7. CSI-D
8. 10-66



THANK YOU!

