

Supplemental Table 1.
Languages reported by respondents in the LASI-DAD study by language family.

Language Family	Languages				
Indo-Aryan	Adivasi	Bhojpuri	Haryanavi	Magahi	Punjabi
	Ahirani	Garhwali	Hindi	Maithili	Rajasthani
	Assamese	Gojri	Kachchhi	Marathi	Sanskrit
	Awadhi	Gujar	Kashmiri	Marwari	Sindhi
	Bajjika	Gujarati	Konkani	Nepali	Thethi
	Bengali	Halbi	Kurmali	Oriya (Odiya)	Urdu
Dravidian	Malayalam				
	Kannada				
	Tamil				
	Telugu				
Tibeto Burmese	Bodo				
	Mishing				
Austro-Asiatic	Santali				
Semito-Hamitic	Arabic				
Germanic	English				
Japonic	Japanese				

Supplemental Table 2.
Neuropsychological battery of Multilingualism Groups with Education

<i>Domain Tasks</i>	Monolingual		Multilingual (1 Language Family)		Multilingual (2+ Language Families)		Range
	Mean	SD	Mean	SD	Mean	SD	
Orientation							
Month	0.89	0.31	0.95	0.23	0.96	0.20	0.00-1.00
Year	0.64	0.48	0.80	0.40	0.89	0.31	0.00-1.00
Day of the Week	0.87	0.33	0.91	0.29	0.94	0.23	0.00-1.00
Day of the Month	0.73	0.44	0.82	0.38	0.86	0.35	0.00-1.00
Season	0.88	0.33	0.90	0.29	0.96	0.21	0.00-1.00
State	0.70	0.46	0.88	0.33	0.93	0.26	0.00-1.00
City	0.96	0.19	0.98	0.15	0.98	0.14	0.00-1.00
Floor of the Building	0.92	0.27	0.95	0.22	0.94	0.24	0.00-1.00
Address	0.92	0.27	0.96	0.19	0.99	0.12	0.00-1.00
Name of Place/Hospital	0.87	0.34	0.92	0.28	0.93	0.26	0.00-1.00
Prime Minister	0.75	0.44	0.86	0.34	0.91	0.29	0.00-1.00
Memory							
3-Word Recall (Immediate)	2.83	0.53	2.86	0.47	2.91	0.36	0.00-3.00
10-Word Recall (3 trials)	12.6	4.60	13.9	4.66	14.9	0.36	0.00-30.0
Brave Man (Immediate)	5.88	3.01	6.41	2.72	7.13	2.70	0.00-12.0
Logical Memory (Immediate)	4.28	4.14	5.28	4.08	7.05	4.88	0.00-25.0
3-Word Recall (Delayed)	2.05	0.99	2.27	0.95	2.31	0.85	0.00-3.00
10-Word Recall (Delayed)	3.48	2.25	4.07	2.29	4.38	2.21	0.00-10.0
Brave Man (Delayed)	1.46	1.72	1.77	1.73	2.12	1.91	0.00-6.00
Logical Memory (Delayed)	3.42	4.21	4.11	4.23	6.15	5.19	0.00-25.0
Constructional Praxis (Delayed)	3.11	2.73	4.09	2.84	5.03	3.14	0.00-11.0
Word List Recognition	16.9	2.92	17.5	2.80	17.9	2.40	0.00-20.0
Logical Memory Recognition	7.93	2.90	8.45	2.66	9.57	2.47	0.00-15.0
Executive Function							
Raven's Test	8.03	3.07	8.96	3.10	10.3	3.11	0.00-17.0

Go-no-go trial 1	7.44	3.16	8.37	2.66	8.67	2.38	0.00-10.0
Go-no-go trial 2	5.89	3.45	6.75	3.33	7.45	3.09	0.00-10.0
Serial 7s	2.56	1.74	2.91	1.65	3.60	1.47	0.00-5.00
Backward Day Naming	4.16	1.66	4.40	1.48	4.61	1.17	0.00-5.00
Symbol Cancellation	10.3	8.13	13.3	8.44	17.3	9.92	0.00-58.0
Digits Backward	0.41	0.49	0.52	0.50	0.71	0.45	0.00-1.00
Digits Forward	0.35	0.48	0.47	0.50	0.62	0.49	0.00-1.00
Language							
Naming Described Objects	1.48	0.64	1.61	0.57	1.64	0.53	0.00-2.00
Animal Fluency	12.2	4.62	12.3	4.66	14.1	5.04	0.00-32.0
Writing/Saying a Sentence	0.88	0.32	0.93	0.25	0.99	0.12	0.00-1.00
Repeating a Sentence	0.93	0.26	0.94	0.25	0.98	0.15	0.00-1.00
Read/Follow and Close Eyes	0.52	0.50	0.48	0.50	0.59	0.49	0.00-1.00
3-stage task	2.70	0.58	2.72	0.59	2.81	0.51	0.00-3.00
Name Common Object	5.36	1.02	5.48	1.00	5.73	0.57	0.00-6.00
Visuospatial							
Interlocking Pentagons	0.75	0.93	0.99	0.96	1.30	0.92	0.00-2.00
Constructional Praxis	6.86	3.07	7.75	2.70	8.39	2.65	0.00-11.0

Supplemental Table 3.

Association of multilingual status and cognitive functioning among participants with education; propensity analysis

	Executive Function		Language		Memory		Visuospatial	
	β	SE	β	SE	β	SE	β	SE
Language Group (ref: Monolingual)								
Multilingual (1 language family)	0.196*	0.78	0.047	0.083	0.173*	0.078	0.125	0.083
Multilingual (2+ language family)	0.284***	0.078	0.209*	0.083	0.226**	0.078	0.106	0.083
Years of Education	0.309***	0.035	0.169***	0.037	0.180***	0.035	0.213***	0.037
Age (years)	-0.229***	0.034	-0.166***	0.036	-0.259***	0.034	-0.170***	0.036
Sex (ref: Male)								
Female	-0.233**	0.080	0.046	0.086	0.252**	0.081	-0.258**	0.086
Rurality (Ref: Urban)								
Rural	-0.130	0.073	0.014	0.079	-0.134	0.074	0.018	0.079
Consumption (Ref. Q1)								
Q2	0.015	0.146	0.011	0.154	0.164	0.146	0.040	0.155
Q3	0.004	0.136	0.017	0.146	0.136	0.137	0.042	0.146
Q4	0.049	0.131	0.129	0.141	0.041	0.133	0.059	0.141
Adj R-squared	0.232		0.106		0.201		0.112	
Observations	797		797		797		797	

Note. All models control for age, sex, years of education, urbanicity, BMI, hypertension, diabetes, heart disease, smoking status, hearing loss, consumption quartile, and childhood SES (parental education)

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Supplemental Table 4.

Association of multilingual status on cognitive functioning among participants with no education; propensity analysis

	Executive Function		Language		Memory		Visuospatial	
	β	SE	β	SE	β	SE	β	SE
Language Group (ref: Monolingual)								
Multilingual (1 language family)	0.249**	0.076	0.149	0.080	0.083	0.078	0.135	0.080
Multilingual (2+ language family)	0.129	0.119	0.089	0.125	-0.107	0.123	0.023	0.125
Age (years)	-0.177***	0.037	-0.130**	0.039	-0.205***	0.039	-0.171***	0.039
Sex (ref: Male)								
Female	-0.587***	0.086	-0.297***	0.091	-0.043	0.089	-0.470***	0.091
Rurality (Ref: Urban)								
Rural	-0.175*	0.077	-0.210*	0.081	-0.244**	0.080	0.046	0.081
Consumption (Ref. Q1)								
Q2	0.147	0.096	-0.100	0.100	0.066	0.098	0.112	0.100
Q3	0.170	0.096	0.096	0.101	0.192	0.099	0.199	0.101
Q4	0.190	0.113	0.182	0.118	0.251	0.116	0.092	0.118
Adj R-squared	0.179		0.087		0.121		0.089	
Observations	662		662		662		662	

Note. All models control for age, sex, urbanicity, BMI, hypertension, diabetes, heart disease, smoking status, hearing loss, consumption quartile, and childhood SES (parental education)

* p<0.05, ** p<0.01, *** p<0.001