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Non-English-Language Proficiency of Applicants to US Residency Programs

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More than 25 million US residents have limited English proficiency, an 80% increase from 1990 to 2010.¹ Limited English proficiency (LEP) may impede participation in the English-language-dominant health care system.² Little is known about the non-English-language skills of physicians in training. This study characterizes the language diversity of all US residency applicants through the Electronic Residency Application Service and contrasts applicant language skills with the predominant languages of the US population with LEP.

Methods

Applicants were asked to self-report proficiency in all languages spoken using the Interagency Language Roundtable scale adapted for physicians for the first time in 2013.³ The 5 response options were: “native/functionally native,” “advanced,” “good,” “fair,” and “basic.”

We explored the percentage of applicants who were English-speaking only vs those who reported more than 1 language by ethnic self-identity and citizenship/immigration status. The applicants’ linguistic diversity was contrasted with the US LEP population. The top 25 LEP languages spoken were obtained from the US Census Bureau for individuals aged 5

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Study concept and design: Diamond, Grbic.

Acquisition, analysis, or interpretation of data: All authors.

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years and older between 2007 and 2011.¹ The US Census categorizes individuals as LEP if they report speaking English less than “very well.” The prevalence of at least advanced proficiency among applicants per 100 000 LEP speakers was calculated.

We used logistic regression to calculate odds of reporting non-English-language proficiency (Stata version 12; Stata Inc). We considered a 2-sided *P* value <.05 to be statistically significant. The Memorial Sloan Kettering institutional review board decided that the project required neither monitoring nor applicant consent because the data were deidentified.

Results

Most (84.4%) of the 52 982 applicants for 2013 reported some proficiency in at least 1 non-English language. The most common languages were Spanish (53.2%), Hindi (20.5%), French (15.6%), Urdu (10.1%), and Arabic (9.8%). Of applicants with any non-English-language proficiency, 48.1% reported native/functionally native proficiency; 10.8%, advanced; 11.8%, good; 10%, fair; and 19.4%, basic. Only 21% of applicants reported at least advanced Spanish proficiency. More than 95% of Latino applicants reported speaking some level of Spanish, frequently with native/functionally native proficiency (84.5%).

Compared with white applicants, Latino (odds ratio [OR], 27.3 [95% CI, 19.9–37.6]), South Asian (OR, 18.2 [95% CI, 15.8–20.9]), and other Asian (OR, 8.6 [95% CI, 7.5–9.8]) applicants were more likely to report speaking 2 languages (*P* < .001). In addition, compared with white applicants, Latino (OR, 19.4 [95% CI, 18.2–20.6]), South Asian (OR, 3.4 [95% CI, 3.2–3.6]), other Asian (OR, 1.2 [95% CI, 1.1–1.3]), and black (OR, 1.2 [95% CI, 1.1–1.4]) applicants were more likely to report speaking 2 or more languages (*P* < .001). Non-US citizens were more likely to report proficiency in 2 or more languages (Table) compared with US citizens (OR, 6.9 [95% CI, 6.3–7.6], *P* < .001).

Among the 25.1 million US LEP speakers, 16.4 million speak Spanish.¹ For every 100 000 US LEP speakers, there were 105 applicants who reported at least advanced proficiency in a non-English language. Relative to this rate, there was an overrepresentation of Hindi-speaking applicants, and an underrepresentation of Spanish, Vietnamese, Korean, and Tagalog, which are 4 of the top 5 US LEP languages (Figure).

Discussion

Even though applicants for medical residencies are linguistically diverse, most of their languages do not match the languages spoken by the LEP population. Further research is needed on whether increasing the number of bilingual residents, educating trainees on language services, or implementing medical Spanish courses as a supplement to (not a substitute for) interpreter use would improve care for LEP patients.^{4,5}

This study has limitations. The data were based on self-report. However, a recent study found that clinicians’ self-assessment correlated with their oral language assessment, particularly at the high and low ends.⁶ Fifteen percent of applicants did not provide a self-identity and only 26 392 (49.8%) matched into an internship. The population actually entering internship may differ in their diversity or language proficiencies. Because of

confidentiality, we do not know the relationship between applicant language proficiency and geographic matching of these skills to the local communities' language needs.

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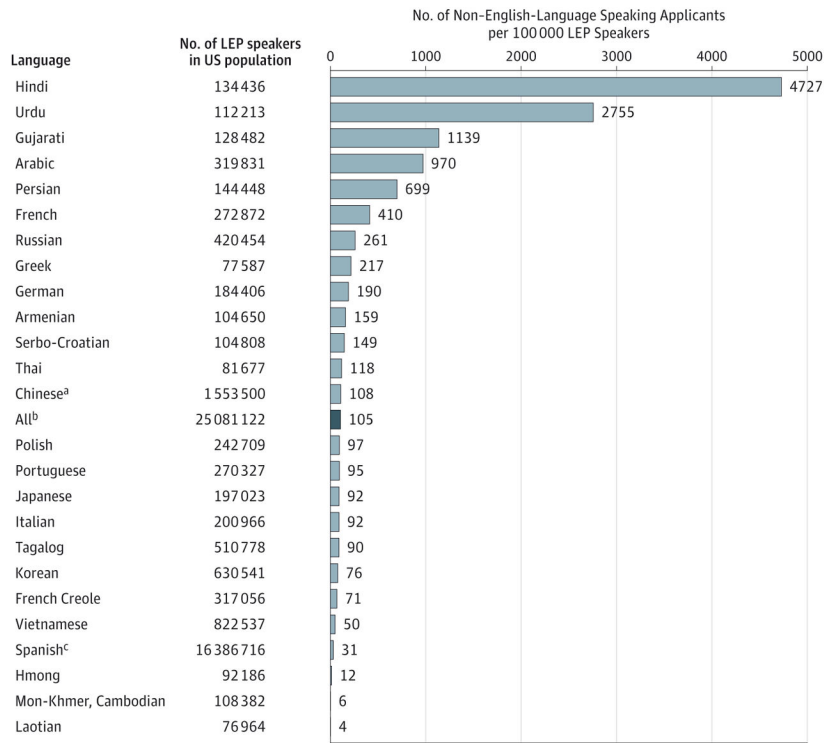


Figure. 2013 Applicants With at Least Self-rated Advanced Proficiency in a Non-English Language in the United States

The data presented in this figure are from the US Census Bureau.¹ The following categories, which were among the top 25 languages, were excluded: other Indic languages, African languages, other Asian, other Indo-European, other Pacific, and other Slavic. LEP indicates limited English proficiency.

^aIncludes Cantonese, Mandarin, and other dialects.

^bRefers to all LEP speakers in the United States; therefore, in 2013, there were 105 applicants with at least advanced proficiency in any non-English language for every 100 000 LEP speakers.

^cThe US Census Bureau combines both Spanish and Spanish Creole.

2013 Residency Applicants by Ethnic Self-identity and Citizenship/Immigration Status

Table

Ethnic Self-identity ^b	Total (N = 52 892)	Applicants, %	Languages Spoken, % ^a			At Least Advanced Proficiency of NEL, %
			English Only	2	>2	
Latino	2800	5.3	1.4	73.6	25.0	91.4
Peruvian	166	0.3	0	63.3	36.8	98.2
Dominican	178	0.3	0	72.5	27.5	98.3
Colombian	279	0.5	0.4	74.6	25.1	96.0
Puerto Rican	594	1.1	1.2	85.4	13.5	96.4
Other Hispanic, Latin	743	1.4	1.2	59.6	39.2	94.4
Cuban	232	0.4	1.3	86.6	12.1	90.4
Mexican, Mexican American	608	1.1	3.1	77.1	19.7	76.7
Asian						
South Asian	10 430	19.7	2.1	14.0	84.0	82.6
Bangladeshi	308	0.6	0.3	22.4	77.3	89.3
Pakistani	1842	3.5	0.8	14.9	84.3	90.4
Indian	8280	15.6	2.4	13.5	84.1	80.5
Other	5548	10.5	4.3	48.1	47.6	68.9
Vietnamese	596	1.1	2.7	51.7	45.6	64.7
Taiwanese	404	0.8	2.7	41.6	55.7	59.8
Chinese	1812	3.4	2.9	56.7	40.4	69.0
Other Asian	1088	2.1	3.6	35.2	61.2	82.1
Korean	816	1.5	6.3	43.6	50.1	60.3
Filipino	668	1.3	7.5	49.9	42.7	64.4
Japanese	164	0.3	11.0	58.5	30.5	78.8
Black/African American	3376	6.4	27.7	47.9	24.4	56.1
Other black or African	143	0.3	16.1	39.2	44.8	65.0
African	1372	2.6	19.7	54.5	25.8	78.6

	Total (N = 52 892)	Languages Spoken, % ^a		>2	At Least Advanced Proficiency of NEL, %	
		Applicants, %	English Only			
Afro-Caribbean	518	1.0	24.1	33.2	42.7	54.7
African American	1343	2.5	38.5	47.7	13.9	25.9
White	21 077	39.8	27.9	50.9	21.3	31.3
Other	1722	3.3	8.3	44.8	47.0	74.9
No identity response ^c	8029	15.2	10.2	41.6	48.3	61.0
Citizenship/Immigration Status						
Non-US citizens	15 219	28.7	3.6	32.9	63.5	93.0
Legal alien ^d	7227	13.6	3.0	28.3	68.7	93.4
US permanent resident	5126	9.7	3.3	38.7	58.0	94.8
Non-US-based applicant	2866	5.4	5.6	34.0	60.4	88.7
US citizen	37 763	71.3	20.4	46.7	32.9	42.2

Abbreviation: NEL, non-English language.

^a Percentages may not equal 100% due to rounding.

^b Self-identity categories with at least 100 responses are shown; only the top 68% (23/34) of self-identity categories are listed. Obtained via self-report from predetermined categories on the application and was included to comment on different language abilities among different ethnic groups. The application asked participants “How do you self-identify? Please select all that apply.” Subgroup rows ordered by percentage speaking English only (low to high).

^c Applicants who were citizens of a European country were instructed to select “Prefer not to say.”

^d Refers to an individual who entered the United States legally (eg, entered the United States on a student visa).