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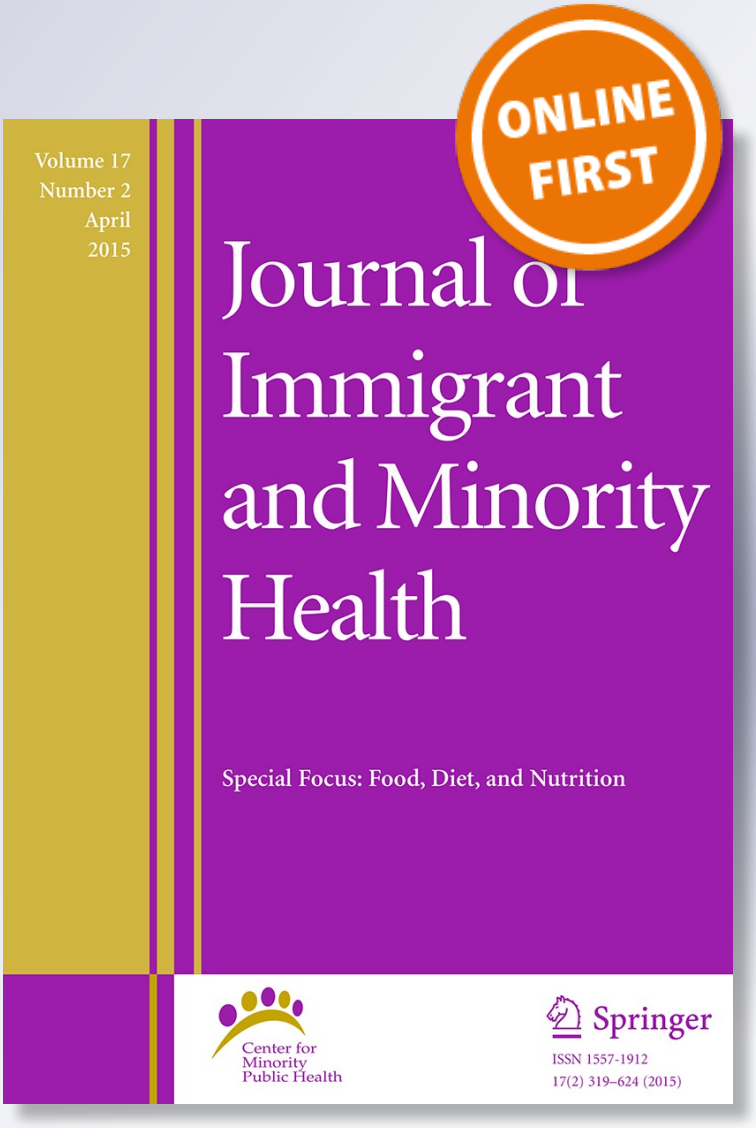

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ORIGINAL PAPER

The Role of Health Literacy in Predicting Multiple Healthcare Outcomes Among Hispanics in a Nationally Representative Sample: A Comparative Analysis by English Proficiency Levels

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Abstract Health literacy (HL) research among Hispanics currently focuses on individuals with limited English proficiency but impacts of HL on healthcare outcomes among other English language proficiency groups is relatively unknown. Regression models assessed associations between HL and healthcare outcomes for Hispanics overall (n = 4013) and for proficiency level sub-populations using the 2007 Pew Hispanic Health Survey. Overall, Hispanics with adequate HL percieved US medical care as "excellent," were more satisfied with their doctor's help, and reported "excellent" overall health. In the sub-population analysis, "excellent" perception of US healthcare was associated with HL among the Spanish and English dominant groups. Among bilinguals, adequate HL was associated with decreased use of traditional medicine. The effect of adequate HL varied within English proficiency groups. HL research that focuses only on Spanish dominant speakers can exclude a substantial percentage of English proficient or bilingual populations who have low HL.

Keywords Health literacy · Latino/Hispanic · English proficiency · Hispanic healthcare

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Introduction

Health literacy, defined as "the degree to which an individual has the capacity to obtain, communicate, process, and understand basic health information and services to make appropriate health decisions," [1] is a national health issue specifically addressed as an objective in Healthy People 2020 [2]. Health literacy is an essential part of an individual's active involvement in their healthcare and can help consumers better communicate with health professionals, navigate healthcare systems, and effectively manage existing conditions. Inadequate health literacy has been linked to poorer quality of care, lower use of preventive services, higher rates of medication non-adherence, higher hospitalization rates, poorer self-reported health, and increased disparities in healthcare access or utilization [3–5]. Limitations in health literacy and its subsequent impact on healthcare outcomes can be magnified among minority populations, like Hispanics [6], where language and cultural barriers add additional complexities to potential health literacy–healthcare linkages.

The Hispanic population is estimated at 54 million individuals representing 17 % of the total US population [7]. Data from The National Assessment of Adult Literacy (NAAL) studies [8] and the Pew Research Center [9] confirm that Hispanics have the lowest levels of health literacy among all racial/ethnic groups. Forty-one percent of Hispanics have "below basic health literacy" compared with 25 % of American Indians/Alaska Natives, 24 % of non-Hispanic Blacks, 13 % of Asians/Pacific Islanders and 9 % of non-Hispanic Whites [8, 9]. Low health literacy within the Hispanic population is associated with lower use of preventive tests and healthcare services, higher depression scores and incorrect medication usage [10–13].

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To date, studies on health literacy among Hispanics have primarily focused on Hispanics with limited English proficiency (LEP), defined as "individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English" [14], or on differences between LEP and those with high levels of English proficiency [13, 15, 16]. There is a substantial gap in the literature pertaining to health literacy among bilinguals and little is known about differences in healthcare outcomes among different language proficiency groups of Hispanics. Exploring differences across the language proficiency sub-populations can provide an understanding of the nuances in healthcare usage and perceptions of healthcare among Hispanics. The primary purpose of this study is to add to the Hispanic health literacy literature by studying the relationship between health literacy and healthcare outcomes across multiple levels of English proficiency.

Methods

The analysis was conducted using the 2007 Pew Hispanic Healthcare Survey, a dual frame (cellphone and landline), interviewer-assisted survey among a nationally representative sample of 4013 Hispanic respondents ages 18 and older. Hispanics were surveyed from July to September 2007 with an overall response rate of 46.3 %. Details regarding sample selection, response rate, and interview procedure have been reported elsewhere [17]. The interview was administered in both Spanish and English, depending on the language preference of the respondent. The total nationally representative sample of 4013 Hispanics was included in this study. Institutional Review Board Approval was not required for the study because the data set is fully de-identified and publicly available.

Health Literacy

Three health literacy items [18], were used to measure self-reported health literacy: (1) "How often do you have someone help you read hospital materials," (2) "How confident are you in filling out medical forms by yourself," and (3) "How often do you have problems learning about your medical condition because of difficulty understanding written information." Internal consistency, inter-rater reliability, and factor structure of the screener have been supported in prior studies [18–20]. Participants in this study were classified as having adequate health literacy if they (1) "never" or "occasionally" had someone help read hospital materials, (2) were "extremely" or "quite a bit" confident in filling out medical forms, *AND* (3) "never" or "occasionally" had problems learning about medical conditions because of difficulty understanding written information. Participants were classified as having inadequate health literacy if they (1) "sometimes," "often," or "always," had someone help read hospital materials, (2) were "somewhat," "a little bit," or "not at all" confident in filling out medical forms, or (3) "sometimes," "often," or "always" had problems learning about medical conditions because of difficulty understanding written information.

Language Proficiency

We used the Pew Hispanic Healthcare report's construction of language proficiency groups [17]. The report constructed an aggregated language proficiency variable using four items: (1) "Would you say you can carry on a conversation in Spanish, both understanding and speaking—very well, pretty well, just a little, or not at all," (2) "Would you say you can read a newspaper or book in Spanish—very well, pretty well, just a little, or not at all," (3) "Would you say you can carry on a conversation in English, both understanding and speaking—very well, pretty well, just a little, or not at all," and (4) "Would you say you can read a newspaper or book in English—very well, pretty well, just a little, or not at all." If respondents replied "very well" or "pretty well" to the items, they were coded as being Spanish speakers and Spanish readers or English speakers and English readers respectively. The responses were then added to construct an aggregate variable for English speakers/readers and Spanish speakers/readers. The language variable was coded as "English dominant" if respondents spoke or read only in English, "Bilingual" if the participant responded that they spoke/read both languages, and "Spanish dominant" if the respondent spoke or read only in Spanish. The Spanish dominant population in the study is comparable to the LEP participants in other studies [15, 16, 21]. The language variable was used to stratify the population to examine health literacy influences on healthcare use and perceptions across the multiple levels of language proficiency.

Acculturation

Acculturation measures are especially common in Hispanic health research, and have been used to examine a variety of health concerns. The Pew Hispanic Healthcare Survey has two proxies of acculturation: nativity and years spent in the US. Nativity was categorized as US born or foreign born. US born individuals were those who were born in the US and US territories. All others were classified as foreign born. For those who were foreign born, years spent in the US was categorized as living in the US $\geq$20, 10–19, and $<$10 years. We constructed an acculturation score for each participant based on these proxy measures. A score of 0–3

was assigned for nativity combined with years in the US (3 = US born, 2 = foreign born and lived in the US ≥20 years, 1 = foreign born and lived in the US 10–19 years, and 0 = foreign born and lived in the US <10 years). This acculturation score has been used in previous research [22]. The variable was further collapsed into dichotomous categories (0 = US born/living in US >20 years, 1 = foreign born/living in the US ≤20 years).

Health Outcomes

Healthcare use/access variables were coded dichotomously (yes/no) using the following items that asked participants whether they: (1) have a 'usual care' medical home in the US, (2) accessed mental healthcare in the US in the past 12 months, (3) have ever used alternative medicine such as prayer healing or seeking help from a cuarendo, shaman, or other healer, and (4) have health insurance. The analysis also included self-reported overall health status and two items assessing perceptions of quality of medical care provided: (1) "Overall, how would you rate the quality of medical care that you have received in the past 12 months? Was the medical care excellent, good, fair, or poor?", and (2) "During the past 5 years have you ever felt that you received poor quality of medical treatment or care?" Participants who rated the quality of care as "excellent" or "good" and did not receive poor quality of medical treatment in the last 5 years were coded as having excellent perceptions of medical care in the US. We further assessed the participant's perception of provider communication using the following Pew survey item: "During your last doctor's visit did you feel (confused, relieved or comforted, frustrated, or reassured) by the information and help that you were given?" Participants who reported being "relieved or comforted" and "reassured" by the information were coded as having received adequate help and information from their doctors.

Demographic Variables

The demographic variables in the analyses include age, sex, education, income, and legal status. All variables were coded dichotomously: age (18–39 vs. 40+), education (high school or less vs. some college), income (≤$50,000 vs. >$50,000), and legal status (have documentation vs. do not have any documentation).

Comorbidity Status

Comorbidity status was measured using three self-reported dichotomous items (yes/no) indicating if a participant had diabetes or high blood sugar, hypertension or asthma, and emphysema or chronic bronchitis. Any 'yes' response for a chronic disease was coded as having a comorbid status and was used as a control variable in all analyses. We also examined the presence of interaction effects between comorbidity status and health literacy on healthcare outcomes among the population.

Statistical Methods

Data were analyzed using SAS 9.3 (Cary, NC) with appropriate weighting methods to ensure an accurate representation of the Hispanic population nationally. Sampling methodology and weighting methods for the Pew Hispanic Healthcare Survey have been reported elsewhere [23]. We used Rao Scott Chi square tests to explore differences between the English proficiency levels to determine how similar these populations were. These groups were determined to be dissimilar and it was therefore necessary to fit stratified multivariable logistic regression models among the three language proficiency levels. Multivariable logistic regression models were fit for the entire cohort and among the stratified populations to determine the strength of the association between health literacy and the healthcare outcomes. In the overall cohort, multivariable models were adjusted for primary language proficiency, sex, age, education, income, acculturation, documentation and comorbidity status while the stratified models were adjusted for the same factors except primary language proficiency. From the logistic regression models, we report odds ratios (ORs) or the adjusted odds ratios (AORs) along with 95 % confidence intervals (CIs). A $p < 0.05$ was considered to be statistically significant.

Results

Full Sample Analysis

The full cohort demographics and healthcare usage by health literacy for the sample (n = 4013) are given in Table 1. In the total cohort, more than 50.0 % were males, 54.2 % were younger Hispanics aged 18–39, and only 15.0 % reported a comorbidity. A majority of the population was acculturated (82.4 %) and 30.0 % were college educated. While 78.0 % had incomes ≤$50,000, 80.0 % had a medical home, 65.0 % had health insurance, and 69.0 % reported having excellent overall health. Two in five reported they were not satisfied with the US medical care and almost 55.0 % reported being frustrated or confused by information provided by their doctors. Lastly, only 38.4 % of the entire cohort self-reported having adequate health literacy. Significant differences in both demographic and healthcare outcomes were found between those with adequate health literacy and those with lower

Table 1 Sample demographics and healthcare use and perceptions by health literacy (weighted percent)

Characteristic	Full sample % (SE)	Adequate health literacy SE (%)	Inadequate health literacy SE (%)	*p* value
Total (weighted n)	4013	1538	2471	
Male	51.6 (0.9)	52.6 (1.6)	45.8 (1.1)	<0.001*
Age 18–39 years	54.2 (0.9)	51.8 (1.6)	55.7 (1.1)	0.045*
Comorbidity status (chronic disease)	14.6 (0.6)	5.2 (0.4)	9.4 (0.5)	0.227
Not acculturated	17.6 (0.7)	8.7 (0.8)	24.8 (1.1)	<0.0001*
Undocumented	6.1 (0.4)	2.0 (0.4)	9.0 (0.5)	<0.0001*
High education	30.5 (0.9)	52.4 (1.6)	16.8 (0.9)	<0.0001*
Income ≤$50,000	77.7 (0.9)	57.2 (1.7)	91.5 (0.7)	<0.0001*
Language proficiency				
English dominant	23.9 (0.9)	36.9 (1.6)	15.9 (1.0)	<0.0001*
Bilingual	35.2 (0.9)	47.3 (1.6)	27.7 (1.0)	–
Spanish dominant/LEP	40.9 (0.9)	15.8 (1.0)	56.4 (1.1)	–
Have medical home	80.1 (0.8)	84.7 (1.2)	77.3 (0.9)	<0.0001*
Have health insurance	65.7 (0.9)	76.8 (1.4)	58.7 (1.1)	<0.0001*
Accessed mental health care	10.0 (0.6)	9.9 (1.0)	10.0 (0.7)	0.943
Have excellent perception of US medical care	60.1 (0.9)	63.6 (1.6)	57.9 (1.1)	0.004*
Satisfied with help and information from doctors	45.4 (0.9)	55.5 (1.6)	39.1 (1.1)	<0.0001*
Have used traditional medicine	44.5 (0.9)	41.5 (1.6)	46.4 (1.2)	0.020*
Have excellent overall health	68.6 (0.8)	81.5 (1.2)	60.6 (1.1)	<0.0001*

SE standard error, *LEP* limited English proficiency

* Significant result at $p < 0.05$

health literacy. Mental healthcare use and comorbidity status were the only non-significant differences among the adequate and inadequate health literacy groups.

Table 2 reports the unadjusted ORs as well as the results from the multivariable logistic regression models examining associations between health literacy and healthcare outcomes in the full sample. After controlling for demographics, comorbidity status and language proficiency, only perceptions of care (AOR 1.4, 95 % CI 1.1–1.8), satisfaction with help from doctors (AOR 2.0, 95 % CI 1.6–2.5) and having better overall health (AOR 1.9, 95 % CI 1.5–2.5) remained significant in the model. The interaction between health literacy and having a comorbidity status on healthcare outcomes was examined in the full sample but failed to reach significance.

Stratified Sample Analysis

Table 3 presents demographic, literacy and healthcare usage percentages among the three English proficiency

Table 2 Associations between adequate health literacy and healthcare outcomes in the full cohort

Healthcare outcome	OR (95 % CI)	AOR[a] (95 % CI)
Have medical home	1.6 (1.3–2.0)*	1.1 (0.8–1.5)
Have health insurance	2.3 (2.0–2.8)*	1.3 (0.9–1.6)
Accessed mental health care	1.0 (0.7–1.3)	0.8 (0.6–1.2)
Have excellent perception of US medical care	1.3 (1.1–1.5)*	1.4 (1.1–1.8)*
Satisfied with help and information from doctors	1.9 (1.7–2.3)*	2.0 (1.6–2.5)*
Have used traditional medicine	0.8 (0.7–0.9)*	0.9 (0.7–1.1)
Have excellent overall health	3.0 (2.5–3.5)*	1.9 (1.5–2.4)*

OR odds ratio, *CI* confidence interval, *AOR* adjusted odds ratio

* Significant result at $p < 0.05$

[a] Adjusted for primary language proficiency, sex, age, education, income, acculturation, documentation and comorbidity status

Table 3 Sample demographics and healthcare use and perceptions by primary language (weighted percent)

Characteristic	English dominant % (SE)	Bilingual % (SE)	Spanish dominant/LEP % (SE)	*p* value
Total (weighted n)	959	1414	1641	
Male	56.8 (2.2)	51.5 (1.5)	48.7 (1.3)	0.005*
Age 18–39 years	58.5 (2.2)	50.8 (1.6)	54.5 (1.3)	0.010*
Comorbidity status (chronic disease)	3.3 (0.3)	5.9 (0.4)	5.4 (0.4)	0.039*
Adequate health literacy	58.9 (2.2)	51.0 (1.6)	13.9 (0.8)	<0.0001*
Not acculturated	2.1 (0.5)	14.1 (2.1)	37.6 (1.6)	<0.0001*
Undocumented	0.3 (0.2)	4.2 (0.6)	11.3 (0.8)	<0.0001*
High education	46.8 (2.3)	39.4 (1.6)	13.2 (0.9)	<0.0001*
Income ≤$50,000	61.2 (2.3)	70.0 (1.6)	95.2 (0.6)	<0.0001*
Have medical home	84.3 (1.7)	81.8 (1.3)	76.2 (1.1)	<0.001*
Have health insurance	76.3 (1.9)	70.1 (1.5)	55.6 (1.3)	<0.0001*
Accessed mental health care	12.3 (1.5)	11.1 (1.0)	7.7 (0.7)	0.005*
Have excellent perception of US medical care	57.2 (2.3)	59.6 (1.5)	62.2 (1.2)	0.116
Satisfied with help and information from doctors	45.4 (2.3)	46.9 (1.6)	43.9 (1.3)	0.378
Have used traditional medicine	41.7 (2.3)	45.2 (1.6)	45.6 (1.3)	0.281
Have excellent overall health	81.5 (1.6)	69.7 (1.4)	60.2 (1.2)	<0.0001*

SE standard error, *LEP* limited English proficiency

* Significant result at $p < 0.05$

level groups (English dominant, bilingual, Spanish dominant). There were significant differences in age ($p = 0.009$), comorbidity status ($p = 0.039$), gender ($p = 0.005$), education ($p < 0.0001$), documentation status ($p < 0.0001$), income ($p < 0.0001$), and acculturation ($p < 0.0001$) among the English proficiency levels. Percentages of respondents with adequate health literacy were also significantly different among the three groups ($p < 0.0001$) with only 13.9 % of Spanish dominant Hispanics having adequate health literacy compared to 51.0 % of bilinguals and 58.9 % of English dominant Hispanics. The groups further differed significantly among healthcare outcomes such as having a medical home ($p < 0.001$), having health insurance ($p < 0.0001$), accessing mental care in the past 12 months ($p = 0.005$) and overall health ($p < 0.0001$).

Multivariable logistic regression models were fit within language proficiency levels to examine associations between health literacy and health outcomes within the groups controlling for demographics and comorbidity status (Table 4). The adjusted models revealed that for all levels of English proficiency, higher health literacy was associated with having higher overall health status, although the association was slightly greater among bilinguals (AOR 2.0, 95 % CI 1.4–2.9) than among Spanish dominant (AOR 1.8, 95 % CI 1.2–2.8) or English dominant (AOR 1.8, 95 % CI 1.0–3.2) groups. Having adequate health literacy was also significantly associated with participant satisfaction with help and information they received from doctors. This association was stronger among bilinguals and Spanish dominant individuals than English dominant (AOR 1.7, 95 % CI 1.1–2.7 for English dominant; AOR 2.1, 95 % CI 1.5–2.9 for bilingual; and AOR 2.3, 95 % CI 1.5–3.4 for Spanish dominant). Spanish and English dominant speakers with adequate health literacy, were 2.1 (95 % CI 1.3–3.2) and 1.4 (95 % CI 1.1–1.7) times respectively more likely to report having excellent perceptions of US medical care. It is noted that the significant associations mentioned were stronger among Spanish dominant speakers than English dominant speakers. Lastly adequate health literacy was associated with decreased use of traditional medicine (AOR 0.7, 95 % CI 0.5–0.9) only among bilinguals.

Discussion

Health literacy is an essential skill to function effectively within a shifting paradigm of a more patient-centered care approach, but within the Hispanic population, questions remain about how the complex interactions between health literacy and varying levels of English proficiency influence healthcare outcomes [24, 25]. Our study is one of the first to conduct a comparative analysis between health literacy and multiple health outcomes by differing levels of English proficiency among a large sample of Hispanics.

Table 4 Associations between adequate health literacy and healthcare outcomes by primary language group

Healthcare outcome	Health literacy		OR (95 % CI)	AOR[a] (95 % CI)
	Adequate % (SE)	Inadequate % (SE)		
English dominant				
Have medical home	85.8 (2.2)	82.0 (2.8)	1.3 (0.8–2.2)	0.9 (0.5–1.6)
Have health insurance	81.8 (2.3)	68.2 (3.4)	2.1 (1.4–3.2)*	1.3 (0.7–2.1)
Accessed mental health care	11.4 (2.0)	13.6 (2.5)	0.8 (0.5–1.4)	1.0 (0.5–2.0)
Have excellent perception of US medical care	52.7 (3.6)	60.3 (2.8)	1.4 (0.9–1.9)	1.4 (1.1–1.7)*
Satisfied with help and information from doctors	52.6 (2.9)	35.0 (3.3)	2.1 (1.4–2.9)*	1.7 (1.1–2.7)*
Have used traditional medicine	42.0 (2.9)	41.2 (3.7)	1.0 (0.7–1.5)	1.1 (0.7–1.8)
Have excellent overall health	85.6 (1.9)	75.4 (2.9)	1.9 (1.2–2.9)*	1.8 (1.0–3.2)*
Bilingual				
Have medical home	86.0 (1.7)	77.2 (1.9)	1.8 (1.2–2.5)*	1.2 (0.7–1.9)
Have health insurance	77.3 (2.1)	62.4 (2.2)	2.1 (1.5–2.7)*	1.2 (0.8–1.8)
Accessed mental health care	9.9 (1.4)	12.3 (1.5)	0.7 (0.5–1.2)	0.7 (0.4–1.2)
Have excellent perception of US medical care	63.4 (2.2)	55.6 (2.1)	1.4 (1.1–1.7)*	1.3 (0.9–1.8)
Satisfied with help and information from doctors	57.2 (2.3)	36.1 (1.9)	2.4 (1.8–3.0)*	2.1 (1.5–2.9)*
Have used traditional medicine	42.5 (2.3)	48.0 (2.2)	0.8 (0.6–1.0)*	0.7 (0.5–0.9)*
Have excellent overall health	81.6 (1.7)	56.9 (2.1)	3.4 (2.5–4.5)*	2.0 (1.4–2.9)*
Spanish dominant/LEP				
Have medical home	78.4 (2.7)	75.9 (1.2)	1.1 (0.8–1.6)	1.4 (0.7–2.5)
Have health insurance	63.8 (3.1)	54.2 (1.4)	1.5 (1.2–1.9)*	1.2 (0.8–1.9)
Accessed mental health care	6.6 (1.6)	7.9 (0.8)	0.8 (0.4–1.4)	0.9 (0.5–1.9)
Have excellent perception of US medical care	71.9 (2.8)	60.5 (1.4)	1.7 (1.2–2.3)*	1.9 (1.3–2.9)*
Satisfied with help and information from doctors	57.4 (3.1)	41.6 (1.4)	1.9 (1.4–2.5)*	2.3 (1.6–3.4)*
Have used traditional medicine	37.5 (3.1)	47.0 (1.4)	0.7 (0.5–0.8)*	0.9 (0.6–1.3)
Have excellent overall health	71.6 (2.8)	58.3 (1.3)	1.8 (1.3–2.4)*	1.8 (1.2–2.8)*

SE standard error, *OR* odds ratio, *CI* confidence interval, *AOR* adjusted odds ratio, *LEP* limited English proficiency

* Significant result at $p < 0.05$

[a] Adjusted for sex, age, education, income, acculturation, documentation and comorbidity status

Consistent with previous literature [8, 11, 16, 26], our analysis reports high levels of inadequate health literacy in the full Hispanic sample population as well as among English dominant (41.0 %) and bilingual Hispanics (49 %). Prior research confirms that Hispanics in general have lower health literacy than any other racial group [8, 9]. Earlier studies have primarily examined health literacy and health outcomes among Hispanics with LEP [15, 16] and some comparing English speaking Hispanics to LEP [10, 27]. Our study recognizes that the relationships between health literacy and health outcomes are not confined to LEP Hispanics, but affect the range of English proficient Hispanics including those that self-report as being bilingual. Only focusing on the LEP population can leave out a substantial percentage of the Hispanic population who are bilingual or English dominant, but with low health literacy. Our study found Hispanics, across all English proficiency levels, with adequate health literacy were almost two times more likely to report better overall health. This suggests that only focusing on the LEP population among Hispanics may discount barriers among the higher English proficiency populations who have better English skills but still have low health literacy which impacts self-reported health. However, we also found that the associations between health literacy and healthcare outcomes, like provider satisfaction and perceptions of care, were stronger among bilinguals and Spanish dominant, underscoring the importance of having adequate health literacy in lieu of lower English proficiency levels. Finally, our results note that respondents with adequate health literacy were less likely to use traditional medicine from a 'cuarendo' than their less health literate counterparts. However, the association was significant only among bilingual Hispanics. Further research should be conducted to examine the use of traditional medicine among Hispanics.

This study has some limitations. The Pew Hispanic Healthcare Survey did not measure objective levels of health literacy. The survey assessed health literacy via measures of self-reported beliefs about health literacy; however, the measures have been validated in prior research [18]. In addition, we could not determine if the extremely high rate of inadequate health literacy among the dominant Spanish speakers was truly due to low health literacy (i.e., participants were provided health information in Spanish at the provider's office and could not understand the information) or because they were given information in English and were unable to read or communicate. This study also combined all Hispanics into a single ethnic group due to small sample sizes for each Hispanic sub-population in the Pew dataset, and therefore differences between Hispanic sub-populations (e.g., Mexican vs. Puerto Rican) cannot be examined but may be present. Additionally, the comorbidities data in the Pew sample was self-reported and lacking objective measures, such as electronic health records. Datasets that combine self-report with electronic health record data may provide more validated measures of comorbidities. Moreover, other variables such as provider language concordance can play an important role in healthcare outcomes and need to be considered in future research. Finally, while these 2007 data are the most current data available for this analysis, relationships may have changed with immigration patterns since this survey was conducted and updated studies will be needed.

Conclusion

Despite the limitations, the results from this study can be of particular importance to health care providers and screening programs that serve Hispanics. Our findings fill a major gap in Hispanic health literacy literature and examine health literacy across the range of English proficiency. The results suggest that a high percentage of both bilinguals and English dominant Hispanics have inadequate health literacy and can face challenges in the healthcare system, even with some English proficiency. Furthermore, both limited health literacy and limited English proficiency are barriers to patient–provider communication and health professionals need to be cognizant of both factors in healthcare for Hispanics. Straightforward translations for the Spanish dominant group or even those who are bilingual may be impractical if they already have low health literacy (i.e., the translation can still be non-simplistic). Future research should include health literacy data accounting for the various English level proficiency subpopulations and the interventions in place, if any, within the healthcare system to respond to them.

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