

The Role of Patient Activation on Patient–Provider Communication and Quality of Care for US and Foreign Born Latino Patients

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BACKGROUND: Previous research has shown positive effects of patient activation on healthcare outcomes, but there is practically no information on the generalization of these findings for Latino patients. Little data are available on whether patient activation is associated with healthcare outcomes for Latino patients and whether activation varies by language proficiency and nativity status.

OBJECTIVE: We examined the levels of activation by characteristics of Latino patients (e.g. nativity, language, health status). We investigated whether patient activation relates to the quality of care received and enhanced doctor–patient communication for Latino patients.

DESIGN: We conducted analyses of 1,067 US born and foreign born Latinos who participated in the second wave of the PEW/RWJF Hispanic Healthcare Survey during 2008.

PARTICIPANTS: Participants were self-identified Latinos (18+) with a doctor visit, living in the contiguous United States who could be contacted by telephone.

RESULTS: US born Latinos had significantly ($P < 0.001$) greater patient activation scores than foreign born Latinos (75 versus 70). Latinos classified as bilingual and those reporting excellent health evidenced higher mean activation scores as compared to Spanish-speaking Latinos and those reporting fair or poor health. After adjusting for demographics, health status, other language and service use factors, patient activation was strongly associated with self-reported quality of care and better doctor–patient communication among both US and foreign born Latino respondents.

CONCLUSIONS: Interventions that augment patient activation could increase quality of care and improved patient–provider communication, potentially reducing health care disparities for Latinos.

KEY WORDS: patient–provider communication; Latinos; activation; quality of care.

J Gen Intern Med 24(Suppl 3):534–41

DOI: 10.1007/s11606-009-1074-x

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INTRODUCTION

Improving patient activation, defined as one's ability and willingness to manage their health and health care,¹ may be an essential component of addressing disparities in quality of health care. Previous studies have shown that optimal patient–provider communication² and a collaborative relationship between patient and provider may improve health care^{3,4} and health outcomes.⁵

Data show that patients rarely state their concerns during a medical visit^{6,7} and typically refrain from engaging in information-seeking⁸ behavior. Among patients that do seek information, providers typically spend little time informing them of their treatment plan and underestimate their patients' desire for information.⁹ Results from assessments of self-management of chronic conditions^{10,11} indicate that greater patient activation can increase satisfaction with care,¹² improve the health care process,^{13,14} ensure the receipt of guideline-concordant treatments,⁴ and potentially enhance health outcomes.¹⁵

Patient activation interventions have been developed for patients with cancer,^{2,16} diabetes,¹⁷ hypertension,¹⁸ obstetrical and gynecological issues,¹⁹ and end-stage renal disease;²⁰ however, few studies evaluate the effect of patient activation in helping Latino patients optimize their healthcare. Research on patient activation in the US is based on the general population,¹ with limited data on whether these findings have been replicated among Latinos. Many surveys are only administered to English-speaking respondents and exclude large numbers of first-generation Latino immigrants with limited English proficiency, precluding examination of how foreign born Latinos fare in terms of patient activation. Given the growing size of the US Latino population, describing the extent to which Latinos engage in patient activation and whether language and nativity affect this process is important. Furthermore, virtually nothing is known about whether patient activation for Latinos is related to perceived quality of care and doctor–patient communication.

Yet, patient activation may enhance the therapeutic relationship by signaling to patients that their opinions are important to their health provider,⁴ thereby augmenting the perceived quality of care.²¹ Patient activation may also enhance patient–provider communication, allowing patients to better understand the logic of treatment and obtain needed information in order to better participate in care.

Increased patient activation may be particularly beneficial for Latinos and other minority groups. Latinos, for example, often avoid hostile confrontation in favor of “simpatía,”²² a preference for politeness and pleasantness even when confronted with disappointment and frustration. Latino patients also value warm personal relationships with their providers²³,

and worry that asking questions or requesting further explanation may jeopardize this relationship. Latinos may hold traditional role expectations that eschew active involvement in the clinical encounter, preferring to delegate decisions about their care to their providers.^{24,25}

This paper will describe differences in patient activation, as measured by the Patient Activation Measure (PAM)²⁶ among US born and foreign born Latinos who had a doctor visit during 2008. Second, it will establish whether patient activation is associated with self-reported quality of care and enhanced doctor-patient communication among US born and foreign born Latinos. Because cultural factors can influence Latinos experience of and participation in health care interactions,²⁷ we analyze the effects of patient activation on these two outcomes separately for US born and foreign born Latinos. We expect that both foreign and US born Latinos who score higher on patient activation will report better communication with their provider and higher quality of care.

METHODS

Sample

Study participants were from a stratified, random telephone survey (the Pew Hispanic Center/Robert Wood Johnson Foundation Latino Health Survey) of $N=4,013$ adult Latinos (aged 18 and older) administered by International Communications Research. Telephone area codes in the contiguous US were divided into very high, high, medium, and low Latino household incidence strata based on estimates of the proportion of Latino households in each exchange. Based on telephone number listings, numbers associated with a Latino surname were taken out of these strata and placed into a fifth stratum. Separate random samples of telephone numbers were drawn from each of these five strata with sampling rates determined by minimizing sampling variance given a fixed cost. Initial telephone interviews (Wave 1) conducted in the summer of 2007 had a response rate of 39.5%. Participants were called again in the spring of 2008 for a second interview (Wave 2) with questions focusing on chronic disorders and medical care received. Participants for this study are the $N=1,067$ persons who completed the Wave 2 interview.

Sampling weights were calculated as the inverse of selection probabilities. Post-stratification weight adjustment for Wave 2 consisted of a rescaling of Wave 1 sampling weights so that the sum of the weights by sex, age, nativity, and education matched those of Latinos in the March 2007 supplement of the Current Population Survey.²⁸ This rescaling was minor, indicating that the Wave 2 sample response was demographically representative of the US Latino population. Respondents were identified as Latino if they answered yes to the question, *Are you, yourself of Hispanic or Latino origin or descent such as Mexican, Puerto Rican, Cuban, Dominican, Central or South American, Caribbean, or some other Latin American background?* Once participants were contacted and identified as Latino, they were given the option to complete the interview in English or Spanish.²⁹

Measures

Demographic and language measures used in analyses were from the Wave 1 interview (for those respondents who com-

pleted Wave 2); all other measures were from the Wave 2 interview. Acculturation was measured by language of interview (Spanish or mostly Spanish versus English or a mix of English and Spanish), language proficiency, and number of years in the US if foreign born (0–5, 6–15, or ≥ 16 years). Respondents were classified by verbal language proficiency based on their responses to the questions, *Would you say you can carry on a conversation in Spanish (English), both understanding and speaking—very well, pretty well, just a little, or not at all?* Those persons who answered *very well* to both Spanish and English were classified as bilingual. Otherwise, persons were classified as Spanish or English dominant based on their reported greater proficiency (or language of interview in the few cases when they were equal). Respondent's self-reported health status (classified as *excellent, very good, good, fair, or poor*) was used to adjust for differences in health status.

In Wave 2, participants were given the Patient Activation Measure (PAM),²⁶ which asked whether they agreed or disagreed with statements about their role in their healthcare and their relationship with their provider, such as *When all is said and done, I am the person who is responsible for managing my health condition*, and *Taking an active role in my own health care is the most important factor in determining my health and ability to function* (see Appendix for PAM items).

A full Spanish translation and adaptation of the PAM into Spanish was completed using a bilingual team of translators of various Latino heritages. These evaluated whether the scale maintained conceptual equivalence for different Latino subgroups. Internal consistency of the PAM measure was assessed using Cronbach's α (0.83 for the English version and 0.88 for the Spanish version), demonstrating good internal consistency in both languages.

Using the recommended methodology for the PAM,²⁶ persons who answered *strongly agree* to all 13 items ($N=174$) and persons who answered don't know, not applicable, or refused to answer 7 or more items ($N=9$) were omitted from all analyses, yielding a final sample size of $N=884$. Raw PAM scores were converted to activation scores with a range of 0–100 following established PAM methodology.²⁶

Two outcome measures were analyzed to assess whether patient activation is associated with Latino patients' management of their healthcare. The first was a single item measure of self-reported quality of medical care received in the past 12 months (response options were *excellent, very good, good, fair, or poor*). The second was the *doctor-patient communication scale* consisting of four items from the Interpersonal Processes of Care Survey Short Form (IPC-18),³⁰ with Cronbach's $\alpha=0.74$ for English version and 0.76 for Spanish version (see Appendix for items).

Statistical Analyses

Weighted percentages of demographic, acculturation, health, and number of doctor visits were used to describe US born and foreign born Latinos in Table 1. Table 2 illustrates how mean PAM activation scores vary by demographics, time in the US, language factors, number of past-year doctor visits, and self-reported health status for US born and foreign born Latinos and for all Latinos.

To evaluate whether patient activation was associated with self-reported quality of care (see Table 3), odds ratios from ordered logistic regressions were estimated with self-reported

Table 1. Characteristics of the N=884 Respondents from the PEW/RWJF Hispanic Healthcare Survey with Analyzable Patient Activation Measure (PAM) Scores*

	US born	Foreign born†	All Latinos
Sample size	241 %	643 %	884 %
Sex			
Female	52	47	49
Male	48	53	51
Age (years)			
18–29	39	28	32
30–49	38	48	44
50–64	14	15	15
≥65	9	8	8
Education			
0–8 years	5	30	20
9–11 years	16	20	18
High school graduate or GED	32	28	29
Some college	32	15	21
College graduate or more	15	8	11
Household income			
\$0–14,999	17	28	24
\$15,000–24,999	12	29	23
\$25,000–34,999	14	20	18
\$35,000–59,999	29	16	21
≥\$60,000	28	8	15
Foreign born by time in US (years)			
0–5		18	
6–15		38	
≥16		43	
Health insurance			
Any	80	62	69
None	20	38	31
Language of interview			
Spanish or mostly Spanish	19	88	62
English or mix of English and Spanish	81	12	38
Verbal language proficiency‡			
Spanish better	7	77	50
Bilingual	26	15	19
English better	67	8	30
English reading proficiency§			
Very good or pretty good	94	31	55
Just a little or not at all	6	69	45
Doctor visits, past year			
None	20	22	22
1–2	32	44	40
3–4	20	16	18
5–7	9	8	9
8 or more	18	9	13
Self-reported health status			
Excellent	17	11	13
Very good	38	11	21
Good	27	35	32
Fair	14	37	28
Poor	4	6	5

*All data except sample size are weighted percentages. Excluded are N=9 persons who did not answer 7 or more of the 13 PAM scale items and N=174 persons who answered strongly agree to all of the 13 PAM scale items; see [Methods](#)

†Foreign born includes US citizens who were born on the island of Puerto Rico

‡Verbal language proficiency is based on responses to the question, *Would you say you can carry on a conversation in Spanish (English), both understanding and speaking—very well, pretty well, just a little, or not at all?* Bilingual denotes persons who answered very well to both Spanish and English

§English reading proficiency is based on responses to the question, *Would you say you can read a newspaper or book in English—very well, pretty well, just a little, or not at all?*

Table 2. Mean Values of Patient Activation Measure (PAM) Activation Scores* for US Born Latinos, Foreign Born Latinos, and All Latinos

	US born	Foreign born†	All Latinos
Overall mean‡ (SE)	75 (1)	70 (1)	72 (1)
Sex			
Female	75 (1)	70 (1)	72 (1)
Male	75 (1)	70 (1)	72 (1)
	P=0.9	P=1.0	P=0.8
Age (years)			
18–29	74 (2)	68 (2)	71 (1)
30–49	75 (2)	71 (1)	73 (1)
50–64	76 (2)	71 (1)	73 (1)
≥65	76 (2)	71 (2)	73 (1)
	P=0.8	P=0.6	P=0.7
Education			
0–8 years	63 (5)	71 (1)	71 (1)
9–11 years	75 (2)	70 (2)	72 (1)
High school graduate or GED	74 (2)	68 (1)	70 (1)
Some college	76 (2)	73 (2)	74 (1)
College graduate or more	76 (2)	75 (2)	75 (1)
	P=0.1	P=0.02	P=0.01
Household income			
\$0–14,999	76 (2)	72 (1)	73 (1)
\$15,000–24,999	67 (2)	69 (1)	69 (1)
\$25,000–34,999	79 (3)	70 (1)	72 (1)
\$35,000–59,999	76 (2)	69 (2)	72 (2)
≥\$60,000	76 (2)	75 (2)	75 (1)
	P=0.001	P=0.2	P=0.02
Foreign born by time in US (years)			
0–5		72 (1)	
6–15		70 (1)	
≥16		71 (2)	
		P=0.6	
Language of interview			
Spanish or mostly Spanish	72 (2)	69 (1)	70 (1)
English or mix of English and Spanish	75 (1)	77 (2)	76 (1)
	P=0.2	P=0.006	P<0.001
Verbal language proficiency§			
Spanish better	72 (3)	69 (1)	69 (1)
Bilingual	77 (2)	76 (2)	78 (1)
English better	74 (1)	67 (3)	74 (1)
	P=0.4	P<0.001	P<0.001
English reading proficiency			
Very good or pretty good	75 (1)	72 (1)	74 (1)
Just a little or not at all	72 (4)	69 (1)	69 (1)
	P=0.4	P=0.06	P<0.001
Doctor visits, past year			
None	78 (2)	70 (2)	73 (1)
1–2	75 (1)	71 (1)	72 (1)
3–4	74 (2)	71 (2)	72 (1)
5–7	77 (3)	70 (2)	74 (2)
8 or more	74 (2)	70 (3)	72 (2)
	P=0.4	P=0.9	P=0.9
Self-reported health status			
Excellent	82 (2)	76 (2)	79 (1)
Very good	75 (1)	69 (2)	73 (1)
Good	73 (1)	72 (1)	72 (1)
Fair	72 (2)	68 (1)	69 (1)
Poor	71 (6)	66 (4)	66 (3)
	P<0.001	P=0.01	P<0.001

*Shown are weighted mean activation scores for the PAM (range 0–100) with standard errors given in parentheses. Except for means by sex and age, all results are age–sex adjusted. Joint test of significance is shown below means

†Foreign born includes US citizens who were born on the island of Puerto Rico.

‡Test of US born versus foreign born difference: P<0.001

§See the third footnote in Table 1

|| See fourth footnote in Table 1

Table 3. Association of Self-reported Quality of Care* with PAM Activation Scores: Ordered Logistic Regression Models for US Born and Foreign Born Latinos with Any Past-year Doctor Visits

	US born		Foreign born†	
	Odds ratio(95% CI)	Significance (P)	Odds ratio(95% CI)	Significance (P)
PAM activation score‡	20 [1.6, 247]	0.02	3.9 [1.3, 11]	0.02
Male	1.3 [0.6, 2.5]	0.5	0.9 [0.6, 1.4]	0.6
Female	1		1	
Age (years)				
18–29	0.5 [0.2, 1.3]	0.2	0.5 [0.3, 1.0]	0.05
30–49	1		1	
50–64	0.9 [0.4, 2.4]	0.9	1.0 [0.6, 1.7]	0.9
≥65	1.4 [0.5, 4.4]	0.9	1.5 [0.8, 3.1]	0.2
(Test of any difference)		0.3		0.1
Education				
0–8 years	0.1 [0.0, 0.4]	0.001	0.8 [0.5, 1.4]	0.4
9–11 years	1.2 [0.3, 4.5]	0.8	1.5 [0.8, 2.7]	0.2
High school graduate	1		1	
Some college	1.0 [0.4, 2.4]	1.0	1.0 [0.4, 2.1]	0.9
College degree or more	1.0 [0.3, 2.9]	0.9	1.5 [0.7, 3.4]	0.3
(Test of any difference)		0.01		0.4
Household income				
\$0–14,999	3.7 [1.0, 14]	0.05	1.3 [0.7, 2.3]	0.4
\$15,000–24,999	6.7 [1.6, 29]	0.01	0.9 [0.5, 1.6]	0.7
\$25,000–34,999	1		1	
\$35,000–59,999	2.5 [0.8, 7.6]	0.1	0.7 [0.3, 1.4]	0.3
≥\$60,000	2.4 [0.7, 8.8]	0.2	0.9 [0.3, 2.8]	0.9
(Test of any difference)		0.1		0.4
Foreign born: time in US (years)				
0–5			1.4 [0.7, 2.7]	0.3
6–15			1.2 [0.7, 2.0]	0.5
≥16			1	
(Test of any difference)				0.6
Language of interview				
Spanish or mostly Spanish	3.2 [1.1, 9.7]	0.04	0.9 [0.3, 2.4]	0.8
English or mix of English and Spanish	1		1	
Verbal language proficiency§				
Spanish better or bilingual	2.2 [1.0, 4.8]	0.04		
English better	1			
English better or bilingual			0.9 [0.4, 2.0]	0.8
Spanish better			1	
English reading proficiency				
Very good or pretty good			1.0 [0.6, 1.9]	0.9
Just a little or not at all			1	
Health insurance	4.5 [1.5, 14]	0.009	1.9 [1.2, 3.1]	0.01
Self-reported health status				
Excellent	0.5 [0.1, 2.1]	0.3	3.3 [1.1, 9.7]	0.03
Very good	1.8 [0.6, 5.6]	0.3	1.5 [0.8, 2.7]	0.2
Good	1		1	
Fair	1.0 [0.2, 4.2]	1.0	0.6 [0.4, 0.9]	0.02
Poor	0.2 [0.0, 1.3]	0.09	0.4 [0.2, 1.1]	0.09
(Test of any difference)		0.05		0.002
Health care information from TV				
A lot	0.4 [0.1, 0.9]	0.04	1.4 [0.8, 2.6]	0.2
A little	0.6 [0.2, 1.5]	0.3	1.2 [0.7, 2.0]	0.6
None at all	1		1	
(Test of any difference)		0.1		0.5

*Exact ones in table indicate reference category

†Foreign born includes US citizens who were born on the island of Puerto Rico

‡PAM activation scores were scaled to have an observed range of 0 to 1 so odds ratio represents ratio of a person with maximum PAM score to a person with minimum PAM score; see Methods

§Different verbal language proficiency terms fit for the US born than for the foreign born because of cell sizes. For the US born, terms fit for Spanish better plus bilingual combined versus English better. For the foreign born, terms fit for English better plus bilingual combined versus Spanish better. Also see the third footnote to Table 1

|| Only included in model for foreign born Latinos because of inadequate cell sizes for US born Latinos. Also see the fourth footnote to Table 1

quality of care as the outcome in two separate models, one for foreign born and one for US born Latinos. Since PAM scores had a bimodal distribution, PAM activation scores were scaled to have an observed range of 0 to 1 in both the ordered logistic

regressions in Table 3 and the linear regressions in Table 4. Hence, the odds ratio in Table 3 represents the ratio of a person with a maximum PAM score as compared to a person with the minimum PAM score.

Table 4. Association of the Doctor-patient Communication Scale* with PAM Activation Scores: Linear Regression Models for US Born and Foreign Born Latinos with Any Past-year Doctor Visits

	US born		Foreign born†	
	Coefficient (95% CI)	Significance (P)	Coefficient (95% CI)	Significance (P)
PAM activation score‡	61 [38, 85]	<0.001	24 [9, 39]	0.002
Male	2 [-7, 10]	0.7	-4 [-9, 2]	0.2
Female	0		0	
Age (years)				
18-29	-4 [-13, 6]	0.5	1 [-7, 9]	0.7
30-49	0		0	
50-64	-8 [-20, 3]	0.2	-1 [-8, 7]	0.9
≥65	-17 [-28, -5]	0.004	-6 [-15, 3]	0.2
(Test of any difference)		0.02		0.6
Education				
0-8 years	-12 [-31, 6]	0.2	-3 [-11, 5]	0.4
9-11 years	-7 [-18, 5]	0.2	2 [-7, 11]	0.6
High school graduate	0		0	
Some college	0 [-10, 10]	1.0	-5 [-14, 4]	0.3
College degree or more	-4 [-16, 8]	0.5	-1 [-12, 10]	0.8
(Test of any difference)		0.5		0.6
Household income				
\$0-14,999	3 [-12, 18]	0.7	-3 [-11, 6]	0.5
\$15,000-24,999	5 [-9, 20]	0.5	3 [-5, 12]	0.4
\$25,000-34,999	0		0	
\$35,000-59,999	-1 [-14, 13]	0.9	-1 [-11, 8]	0.8
≥\$60,000	-4 [-18, 11]	0.6	1 [-12, 13]	0.9
(Test of any difference)		0.7		0.5
Foreign born: time in US (years)				
0-5			-6 [-16, 4]	0.2
6-15			-3 [-10, 4]	0.4
≥16			0	
(Test of any difference)				0.5
Language of interview				
Spanish or mostly Spanish	11 [-1, 22]	0.07	9 [-1, 19]	0.08
English or mix of English and Spanish	0		0	
Verbal language proficiency§				
Spanish better or bilingual	7 [-2, 15]	0.1		
English better	0			
English better or bilingual			8 [0, 17]	0.06
Spanish better			0	
English reading proficiency				
Very good or pretty good			-1 [-10, 7]	0.7
Just a little or not at all			0	
Health insurance	1 [-10, 13]	0.8	6 [-1, 12]	0.09
Self-reported health status				
Excellent	-3 [-18, 12]	0.7	8 [-2, 19]	0.1
Very good	4 [-5, 12]	0.4	7 [-4, 17]	0.2
Good	0		0	
Fair	7 [-4, 18]	0.2	0 [-6, 7]	0.9
Poor	1 [-20, 23]	0.9	-10 [-23, 3]	0.1
(Test of any difference)		0.5		0.1
Health care information from TV				
A lot	-7 [-18, 3]	0.2	2 [-6, 10]	0.7
A little	-1 [-9, 8]	0.9	-4 [-10, 3]	0.3
None at all	0		0	
(Test of any difference)		0.4		0.3

*Outcome measure scaled to have a range of 0 to 100. See Appendix for scale items. Exact zeros in table indicate reference category

†Foreign born includes US citizens who were born on the island of Puerto Rico

‡PAM activation scores were scaled to have an observed range of 0 to 1 so coefficient represents the difference of a person with maximum PAM score relative to a person with minimum PAM score; see Methods

§Different verbal language proficiency terms fit for the US born than for the foreign born because of cell sizes. For the US born, terms fit for Spanish better plus bilingual combined versus English better. For the foreign born, terms fit for English better plus bilingual combined versus Spanish better. Also see the third footnote to Table 1

|| Only included in model for foreign born Latinos because of inadequate cell sizes for US born Latinos. Also see the fourth footnote to Table 1

To assess whether patient activation was related to better doctor-patient communication, linear regressions were fit with doctor-patient communication as the outcome (Table 4). For ease of interpretation, the doctor-patient communication scale was rescaled to a range of 0-100 in Table 4. In these linear

regressions, coefficients for reference categories have a value of zero and negative coefficients represent a relationship in which a greater value of the corresponding variable is associated with a lower value of the doctor-patient communication scale. Here, the PAM coefficient represents the difference in the outcome for

a person with the maximum PAM score relative to a person with the minimum PAM score.

For both analyses of these outcomes, an initial model was fit with the factors shown in Tables 3 and 4 entered as covariates simultaneously in the model plus terms for chronic conditions (diabetes, asthma, high blood pressure, arthritis, heart disease, cancer, and depression) and number of doctor visits. However, for all models, since chronic conditions and number of doctor visits were non-significant and highly collinear with self-reported health status, they were eliminated from the final models. All other terms were retained in the final models.

Standard errors were calculated using the linearization method and all inferential procedures accounted for the complex survey design. All analyses were conducted using Stata statistical software version 10.1.³¹

RESULTS

Table 1 gives sample characteristics for the $N=884$ respondents who had analyzable PAM scores (see [Methods](#)). US born Latinos tended to be younger with a greater proportion ages 18–29 than the foreign born. Foreign born Latinos had appreciably lower levels of education and income and were less likely to have health insurance than US born Latinos. The vast majority of foreign born Latinos (88%) interviewed in Spanish or mostly Spanish, whereas only 19% of the US born did. English reading proficiency was high in the US born (94%) but low (31%) in the foreign born. Self-reported health status differed as well with 55% of the US born reporting excellent or very good health compared to only 22% of the foreign born.

US born Latinos had a significantly ($P<0.001$) greater mean value on the PAM than foreign born Latinos (75 versus 70; see [Table 2](#)). There were no significant differences on the PAM by sex or age, and differences by education were only significant among the foreign born. US born Latinos with low levels of education (0–8 years) had a low mean PAM, but this small subpopulation, comprises only 5% of the US born population. Household income was associated with activation only among the US born, with those in the second quintile (\$15,000–24,999) having the lowest mean PAM; the other income quintiles had greater mean PAM scores. Self-reported health status, however, was highly associated with PAM among both the US born and foreign born, with those reporting better health generally having higher PAM scores.

No significant difference in PAM scores by years of residence in the US was shown for foreign born Latinos. Both US and foreign born Latinos who interviewed in Spanish had lower mean PAM scores than those interviewed in English; however, differences in PAM scores by interview language did not reach statistical significance among the US born.

Persons classified as bilingual had the greatest mean PAM scores, although differences by verbal language proficiency were only significant among the foreign born. To differentiate possible language proficiency effects from language of interview and nativity effects, we fitted a regression model (data not shown) with PAM as the outcome and language terms and demographic factors as predictors. The bilingual predictor was highly significant ($P<0.001$), and terms for language of interview and nativity were not significant. Hence, PAM appears to have a primary association with whether a person is bilingual.

Table 3 shows ordered logistic regression models for self-reported quality of care with separate models for US and foreign born Latinos. After adjusting for demographics, health status, and other factors, PAM is a strongly associated with self-reported quality of care for both US born Latinos and foreign born Latinos ([Table 3](#)). In the model for US born Latinos, this odds ratio was 20 (95% CI [1.6, 247]; $P=0.02$). For the foreign born, the odds ratio was 3.9 (95% CI [1.3, 11]; $P=0.02$). Both these odds ratios were the largest in their respective models, indicating that PAM has effect size greater than the other variables included in the models.

In the model for US born Latinos, being bilingual, interviewing in Spanish, and having health insurance were also associated with greater reported quality of care. In contrast, having low education (0–8 years) and getting “a lot” of health care information from television were associated with lower perceived quality of care. In the model for the foreign born, having health insurance and having excellent health status were associated with greater reported quality of care, while being young (18–29 years) and having fair health status were associated with lower quality of care. Interestingly, there was no significant effect of time in the US for the foreign born, nor were there any significant language effects associated with self-perceived quality of care among the foreign born.

Table 4 shows that PAM was also strongly associated with doctor–patient communication among both US born Latinos and foreign born Latinos. Note that in these models, the outcome variable is scaled to have a range of 0–100. Hence, the PAM coefficient for the US born of 61 (95% CI [38, 85]; $P<0.001$) means that persons with the largest PAM scores have, according to this model, a mean doctor–patient communication score 61 points higher (out of a possible 100) than persons with the lowest PAM scores. For foreign born Latinos, the effect was highly significant but the effect size was smaller (coefficient 24 with 95% CI [9, 39] and $P=0.002$). In the model for US born Latinos, older adults (age ≥ 65 years) had significantly lower scores on the doctor–patient communication scale. In the model for the foreign born, only PAM scores were significantly associated with doctor–patient communication.

DISCUSSION

Patient activation is related to better perceived quality of care and enhanced doctor–patient communication among both US born and foreign born Latinos. These findings, consistent with the work of Hibbard and Cunningham¹ and with results for the general US population,^{4,13,14} demonstrate the importance of patient activation as a critical component of enhancing patient–provider communication and quality of healthcare. Patient activation functions as a mechanism to increase patient engagement. Having realistic expectations of what providers can do and understanding the benefits of participation can also increase perceptions of quality of care. Patient activation is a skill that can be taught³² and might provide a way to reduce service disparity gaps among ethnic and racial minorities.

Mean PAM scores among our respondents were higher than mean scores in previous studies.²⁶ This may be due to an increased likelihood of participation among Latino respondents who feel comfortable speaking on the phone and/or who have higher levels of activation. Interview fatigue, due to the position of PAM items in the interview (located near the end of a 100-plus

question interview) cannot be ruled out as potential explanation for the higher mean scores. It is unlikely, however, that problems with translation or adaptation of the instrument for Spanish speakers is responsible for difference in mean scores as Latinos who interviewed in Spanish had lower scores than those who interviewed in English. Future studies should be conducted using in-person surveys to see if these results can be replicated.

Differences in quality of care and doctor communication measures by nativity appear to be only partially related to differences in PAM, and suggest the need for further exploration as to why foreign born Latinos might be less likely to receive quality care, even when activated. Low health literacy may be a contributing factor in deterring foreign born Latinos³³ from advocating for quality care. Bilingual Latino respondents have higher mean PAM scores, suggesting that patient activation might be more related to communication skills than to education. In addition to activation, increasing patient's knowledge about their illness and treatment options, and perceived efficacy in decision-making³⁴ may be needed to improve the quality of care among Latino patients.

The finding that US born Latinos had higher mean values on the PAM than foreign born Latinos underscores the importance of preparing foreign born patients to engage in their health-care. Foreign born Latinos may not have as thorough an understanding of the healthcare system as their US born counterparts, putting them at greater risk of assuming that their provider's decisions are necessarily in their best interest.

Patient activation is associated with beneficial outcomes for Latino patients. A sense of collaboration and mutual involvement between health provider and patients can be achieved if minority patients feel they play an active role in their healthcare. Integrating patient activation strategies into routine care might be a low-cost strategy to potentially reduce healthcare disparities.

Acknowledgements: This publication was made possible by the Robert Wood Johnson MD002261-02 and also supported by NIH Research Grant # 1P50 MHO 73469 funded by the National Institute of Mental Health and #P60 MD0 02261 (NCMHD) funded by the National Center for Minority Health and Health Disparities.

Conflict of Interest: Drs. Alegria and Perez, Mr. Sribney, Ms. Laderman, and Ms. Keefe report no conflicts of interest.

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APPENDIX

Patient Activation Measure (PAM)

The 13-Item PAM (Hibbard et al.²⁶) consists of the following items:

Please let me know how much you agree or disagree with the following statements.

1. When all is said and done, I am the person who is responsible for managing my health condition.
2. Taking an active role in my own health care is the most important factor in determining my health and ability to function.
3. I am confident that I can take actions that will help prevent or minimize some symptoms or problems associated with my health condition.
4. I know what each of my prescribed medications does.
5. I am confident that I can tell when I need to go get medical care and when I can handle a health problem myself.
6. I am confident I can tell my health care provider concerns I have even when he or she does not ask.
7. I am confident that I can follow through on medical treatments I need to do at home.
8. I understand the nature and causes of my health condition(s).
9. I know the different medical treatment options available for my health condition.
10. I have been able to maintain the lifestyle changes for my health that I have made.
11. I know how to prevent further problems with my health condition.

12. I am confident I can figure out solutions when new situations or problems arise with my health condition.
13. I am confident that I can maintain lifestyle changes like diet and exercise even during times of stress.

Would you say you...?

- (4) Strongly agree
- (3) Moderately agree
- (2) Moderately disagree, or
- (1) Strongly disagree

Item responses were summed to produce a raw score using the numerical values given above. Raw score statistics: minimum observed value 19; maximum observed value 52; median 46; mean 45.7; standard deviation 5.3; Cronbach's α =0.88 (overall), 0.83 (English version), and 0.88 (Spanish version).

Doctor–Patient Communication Scale

This scale was based on the following four items from the Interpersonal Processes of Care Survey Short Form (IPC-18; UCSF, 2006):

How often did doctors or health professionals ...

- a. Really find out what your concerns were
- b. Clearly explain their advice and recommendations
- c. Clearly explain the side effects of the medication(s)
- d. Ask if you were having problems following their advice and recommendations

Would you say...?

- (0) Never
- (1) Rarely
- (2) Sometimes
- (3) Usually, or
- (4) Always

The items were summed to produce the scale using the numerical values given above. Scale statistics: minimum observed value 0; maximum observed value 16; median 10; mean 10.1; standard deviation 4.4; Cronbach's α =0.75 (overall), 0.74 (English version), 0.76 (Spanish version).