

Health Insurance Literacy: Disparities by Race, Ethnicity, and Language Preference

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With the implementation of health insurance exchanges established by the Affordable Care Act (ACA), more than 20 million Americans gained access to health insurance. Of those, about 10 million enrolled in private insurance plans called qualified health plans (QHPs) that met certain ACA requirements—37% for the first time.¹ In doing so, the newly insured entered a complex system of jargon, rules, limits, exceptions, and exclusions. Policy makers understood from the outset that health insurance literacy (HIL) would be a key factor in the long-term success of the ACA. In 2011, an HIL roundtable coined the following working definition: HIL “measures the degree to which individuals have the knowledge, ability, and confidence to find and evaluate information about health plans, select the best plan for their own (or their family’s) financial and health circumstances, and use the plan once enrolled.”²

To be of practical value, HIL requires consumers to have basic health and financial literacy and basic numeracy skills to calculate out-of-pocket expenses, decide whether they can afford to act, and know when they have been incorrectly billed, for instance. For this reason, HIL must be viewed as a unique skill, without which consumers cannot rationally choose or use health insurance or realize the full value of their policies. Several national studies have shown that consumers, even highly educated ones, have difficulty choosing and using their health insurance²⁻⁴ and that HIL levels vary widely across population groups. Racial and ethnic minorities, young adults, and those with limited English language proficiency are especially disadvantaged.⁵ Poor HIL is compounded by insurance product complexity.^{6,7} These conditions can widen existing disparities in health and well-being among minorities.

In 2013, Connecticut launched its health insurance exchange, Access Health Connecticut (AHCT). An extensive statewide consumer outreach campaign resulted in a significant reduction in the state’s uninsured rate by 2015.⁸ For 2 consecutive years after the first open enrollment period, AHCT surveys revealed that compared with 34% of white enrollees, 40% of black and 44% of Hispanic enrollees in QHPs had not used their insurance; additionally, compared with 19% of white enrollees, 46% of black enrollees and 52% of Hispanic enrollees did not have a primary care provider. These statistics prompted a need to measure

ABSTRACT

OBJECTIVES: To measure Connecticut’s Affordable Care Act qualified health plan enrollees’ health insurance literacy (HIL) by race, ethnicity, and language preference.

STUDY DESIGN: Statewide landline and cell phone telephonic survey.

METHODS: Geographically balanced cohort that oversampled black and Hispanic enrollees. Questions tested enrollees’ knowledge of basic health insurance terminology and their use. Survey data were supplemented by deidentified administrative data from the state’s health insurance exchange.

RESULTS: Overall, subjects answered 62% of 13 questions correctly. The percentages of correct answers were 53% for black enrollees, 50% for Hispanic enrollees, 74% for white enrollees, and 45% for Spanish-speaking enrollees. The differences by race, ethnicity, and language preference were statistically significant. Overall, enrollees with a college education scored higher across all demographic groups, but disparities by race and ethnicity persisted.

CONCLUSIONS: Health insurance terminology and use rules confuse consumers, especially racial and ethnic minorities. Differences in HIL may be a previously underrecognized source of healthcare disparities because even minor errors can result in delayed care or unanticipated medical bills. Low HIL can diminish the practical value of health insurance and exacerbate perceptions of health insurance as offering insufficient value for premium price. Additional research on ways to improve HIL and investments in insurance navigation support for black and Hispanic enrollees are needed.

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TAKEAWAY POINTS

Consumers can derive disparate value from identical plans based on their health insurance literacy (HIL). Our study measured HIL among qualified health plans' enrollees. Although gaps in HIL were evident among all enrollees, racial/ethnic minorities had significantly lower HIL than white enrollees. Low HIL coupled with complex health plan rules present a barrier to care and put minorities at constant risk for unpredictable financial liabilities.

Three corrective measures are needed to enhance the value of insurance for all:

- ▶ Palliative, short-term measures: research in HIL education, especially for minorities, and enhanced point-of-care insurance coaching and support.
- ▶ Systemic, long-term measure: health insurance simplification.

enrollees' HIL, a potential contributing cause of disparate utilization. This paper presents the results of the first study of HIL among QHP enrollees by race, ethnicity, and language preference in Connecticut.

METHODS

The telephonic survey target was 500 enrollees stratified by county and race/ethnicity. The sample was extracted from a pool of more than 66,000 insured AHCT QHP enrollees inclusive of the 2013, 2014, and 2015 enrollment periods. Based on results of previous national studies that showed lower HIL among racial/ethnic minorities, the survey oversampled black and Hispanic enrollees. Oversampling was defined as a preponderance of people of color compared with the frequency in the general population using the 2010 Connecticut Census as a reference. Therefore, the stratified sample target was 50% white, 25% black, and 25% Hispanic (vs 70%, 10%, and 14%, respectively, in Census) from Connecticut's 8 counties.

The survey was conducted by an independent third-party vendor by random selection from the sample pool until the stratified targets were met. Telephone outreach included landline and cell phone numbers. Interviews were conducted in English or Spanish based on enrollee preference. Participants were offered a \$5 gift card for their participation. The survey was fielded from July 13, 2016, to July 29, 2016.

The 25-minute survey included 13 questions about knowledge and use of health insurance terminology. Responses were augmented with additional administrative data by AHCT. A fully deidentified data set was used for statistical analysis.

Analysis consisted of descriptive statistics, the χ^2 test for categorical or ordinal variables, independent samples *t* tests for 2-group comparisons, univariate analysis of variance for more than 2 groups, and linear regressions for continuous outcomes, with and without categorical copredictors. Analyses were done in Stata 15 (StataCorp, LLC; College Station, Texas), and statistical significance for all tests was established at $P < .05$.

The study was exempted by the University of Connecticut Institutional Review Board because only deidentified data were used in the analysis.

RESULTS

A total of 516 participants completed the survey, and 506 answered questions about race and ethnicity. Unless otherwise stated, all results

are based on the 506 complete responders, 49% of whom were white, 27% Hispanic, and 25% black, very close to the target. Thirty-nine percent were male and 96% were between the ages of 25 and 64 years. Nineteen percent answered the survey in Spanish. All but 1 of the 93 participants who chose Spanish as their preferred language identified themselves as Hispanic. A total of 85% had a household income of less than \$55,000. Totals of 53% and 41% had enrolled in QHPs by telephone and online, respectively. The distribution of

income by race/ethnicity showed a statistically significantly ($P < .05$) higher income among white enrollees.

Respondents from 8 Connecticut counties were collapsed into 4 groups because the number of responders in some counties was too low for robust statistical analysis. The sample included residents from Hartford County (27%), Fairfield County (34%), New Haven County (21%), and the other 5 Connecticut counties (18%). A total of 63% of participants had either some college or a bachelor's degree and 37% either had completed high school or had some high school education. Detailed baseline characteristics of the surveyed population and differences by race/ethnicity are shown in [Table 1](#).

The survey probed enrollees' recognition of the meaning of the words *premium*, *deductible*, *co-pay*, *out-of-pocket limit*, *provider network*, and *appeal* in the context of health insurance. It also included questions probing enrollees' understanding of how to use health insurance terminology and 1 case scenario requiring calculation using co-pay and deductible to figure out enrollee out-of-pocket cost. Black respondents had lower average HIL correct scores by 20.48 percentage points (95% CI, -24.49 to -16.47; $P < .001$) than white respondents (53.29% vs 73.76%, respectively), whereas Hispanic respondents had lower average HIL correct scores by 23.48 percentage points (95% CI, -27.38 to -19.59; $P < .001$) than white respondents (50.28% vs 73.76%, respectively).

The size of the race/ethnicity differences shrank slightly when controlling for education and income, but differences remained significant (black vs white: -14.67% [95% CI, -18.66% to -10.68%]; Hispanic vs white: -16.83% [95% CI, -20.85% to -12.81%]). The difference in the average percent correct HIL responses of Hispanic and black respondents was small and nonsignificant. Controlling for covariates did not change this conclusion. Overall, enrollees with a college education scored higher across all demographic groups, but disparities by race and ethnicity persisted ([Figure](#)).

Among the 172 enrollees with a high school education or less who answered the "premium" question, 26% ($n = 45$) identified the premium as "the best type of health insurance you can buy" (incorrect answer) and 8% ($n = 14$) chose "a bonus you get at the end of the year if you stay covered" (incorrect answer). Among those who took the survey in Spanish, 56% had the correct answer compared with 80% who took it in English ([Table 2](#)). The impact of low HIL was amplified when patients needed to combine insurance features such as deductible and co-pay. The case scenario of

TABLE 1. Baseline Characteristics of the HIL Subjects Surveyed^a

Measures	All (N = 506)		White (n = 246; 48.6%)		Black (n = 124; 24.5%)		Hispanic (n = 136; 26.9%)		P _{R/E Δ}
	n	%	n	%	n	%	n	%	
Female	307	61	143	58	85	69	79	58	.118
Age, years									<.001
18-24	12	2	3	1	5	4	4	3	
25-35	63	12	10	4	33	27	20	15	
35-44	57	11	15	6	13	10	29	21	
45-54	127	25	60	24	27	22	40	29	
55-64	238	47	156	63	43	35	39	29	
65-74	9	2	2	1	3	2	4	3	
Education ^b									<.001
Some high school	46	9	5	2	11	9	30	22	
High school graduate	142	28	52	21	43	35	47	35	
Some college	147	29	72	29	46	37	29	22	
Bachelor's degree or more	168	33	117	48	23	19	28	21	
Employment ^c									<.001
Retired/student/disabled	85	18	69	30	8	7	8	6	
Not employed	83	17	39	17	24	20	20	16	
Employed	309	65	124	53	87	73	98	78	
Income ^d									<.001
<\$25,000	166	35	50	22	57	48	59	46	
\$25,000-<\$55,000	235	50	121	54	53	45	61	48	
≥\$55,000	71	15	55	24	8	7	8	6	
Enrollment channel									<.001
Telephone	268	53	111	45	72	58	85	63	
Online	206	41	125	51	39	31	42	31	
Paper	17	3	7	3	5	4	5	4	
In person	15	3	3	1	8	6	4	3	
Premium subsidy									<.001
None	64	12	50	20	6	5	8	6	
APTC	110	22	76	31	19	15	15	11	
APTC + CSR	332	66	120	49	99	80	113	83	
County ^e									<.001
Fairfield	174	34	58	24	51	41	65	48	
Hartford	135	27	57	23	36	29	42	31	
New Haven	108	21	56	23	33	27	19	14	
Other	89	18	75	30	4	3	10	7	
Language									<.001
English only	412	81	246	100	123	99	43	32	
Spanish only	94	19	0	0	1	1	93	68	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Household size	1.33	0.67	1.37	0.77	1.16	0.43	1.40	0.65	.006
HIL total correct	8.12	2.81	9.59	2.36	6.93	2.61	6.54	2.31	<.001
HIL percent correct	62.44	21.58	73.76	18.17	53.29	20.11	50.28	17.74	<.001

APTC indicates advanced premium tax credit; CSR, cost-sharing reduction; HIL, health insurance literacy; R/E, race/ethnicity.

^aCounts (n) and percentages (%) are shown for categorical measures, and means and SDs are shown for continuous measures; highest percentages or means are in bold font (within each subgroup for categories, and overall for means).

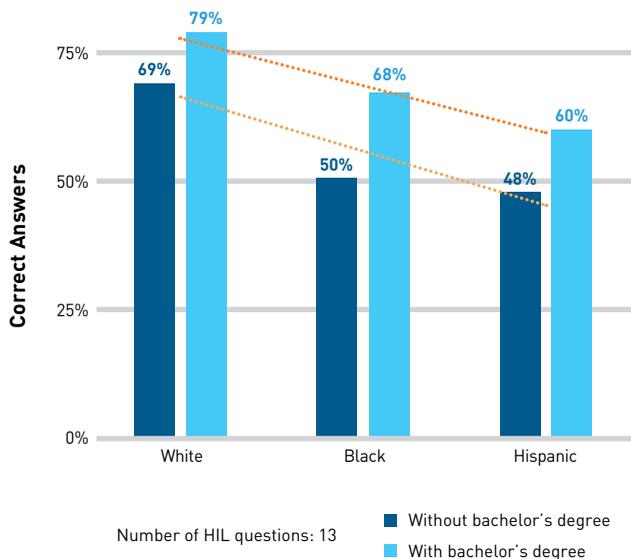
^bMissing values for education: 3 for the entire sample; 0, 1, and 2 for white, black, and Hispanic participants, respectively.

^cMissing values for employment: 29 for the entire sample; 14, 5, and 10 for white, black, and Hispanic participants, respectively.

^dMissing values for income: 34 for the entire sample; 20, 6, and 8 for white, black, and Hispanic participants, respectively.

^eOnly 3 counties with n greater than 100 are shown; the other 5 were grouped in "other."

FIGURE. HIL Percent Correct Answers by Race/Ethnicity and Education



HIL indicates health insurance literacy.

estimating out-of-pocket costs illustrates this point: “Suppose that under your health insurance policy, hospital expenses are subject to a \$1000 deductible and a \$250 per day co-pay. You get sick and are hospitalized for 4 days, and the bill comes to \$6000. How much of that hospital bill will you have to pay yourself?” The correct answer is \$2000. Overall, only 31% of respondents had the correct answer. Of those who underestimated their out-of-pocket cost, 11% thought that they would owe \$0 and another 31% thought that the amount would be \$1000. Another 17% of respondents estimated their out-of-pocket liability to be 2 or 3 times higher than the correct amount.

Our results confirm previous reports that insurance features that involve calculations, such as combining co-pay and deductible to determine out-of-pocket exposure, pose greater difficulty than concepts like “appeal” or “premium.”

DISCUSSION

Low HIL is a substantial barrier to selecting and using commercial health insurance. From the consumer perspective, having health insurance that one cannot fully understand or use with confidence can justifiably erode the perceived value of being insured. The problem is especially burdensome for people of color.

TABLE 2. HIL Knowledge Differences by Racial/Ethnic and Language Groups*

HIL Question	Percent of Responses That Were Correct					
	All	White	Black	Hispanic	English	Spanish
1 Which of the following is the best definition of the term “health insurance premium”?	75%	88%	66%	61%	80%	56%
2 Is a health insurance premium something you must pay every month, regardless of whether you use healthcare services, or do you only have to pay your health insurance premium during the months when you use healthcare services?	94%	98%	94%	88%	96%	84%
3 Which of the following is the best definition of the term “annual health insurance deductible”?	64%	85%	44%	42%	72%	29%
4 Suppose that under your health insurance policy, hospital expenses are subject to a \$1000 deductible and a \$250 per day co-pay. You get sick and are hospitalized for 4 days, and the bill comes to \$6000. How much of that hospital bill will you have to pay yourself?	31%	44%	25%	15%	37%	7%
5 Which of the following best describes the “annual out-of-pocket limit” under a health insurance policy?	55%	70%	42%	39%	60%	31%
6 Which of the following best describes a “co-pay”?	78%	89%	71%	63%	83%	54%
7 Which of the following best describes a “health insurance formulary”?	36%	44%	27%	29%	37%	30%
8 Which of the following best describes a health plan “provider network”?	73%	89%	60%	57%	79%	49%
9 True or false: If you receive inpatient care at a hospital that participates in your health plan’s provider network, all the doctors who care for you while you are in the hospital will also be in network.	45%	47%	34%	51%	44%	50%
10 When talking about health insurance, an appeal is:	68%	80%	63%	51%	74%	44%
11 True or false: If your health insurance plan refuses to pay for a service that you think is covered and your doctor says you need, you can appeal the denial and possibly get the insurance company to pay the claim.	83%	91%	75%	76%	85%	77%
12 While there may be several ways to determine what is covered, what is the best way to find out if a service (ie, doctor’s visit, lab test, etc) will be covered by your health plan?	58%	72%	48%	41%	64%	32%
13 In general, what type of health plan tends to give less choice of doctors?	51%	61%	44%	40%	53%	41%
Percent correct of all 13 HIL questions	62.4%	73.8%	53.3%	50.3%	66.5%	44.9%

HIL indicates health insurance literacy.

*All racial/ethnic differences in percent correct scores are significant at $P < .001$ (except inpatient care [question 9]; $P = .012$). Values in bold font are the highest percent correct across compared groups. Because all Spanish speakers were Hispanic except 1, the English versus Spanish comparison is nearly a comparison of Hispanics versus non-Hispanics (all significant, except health insurance formulary [question 7]; inpatient care [question 9]; and appeal, true or false [question 11]).

Our survey shows that consumers frequently confuse vocabulary terms, such as *premium* or *deductible*, which they know and use in everyday life without great difficulty, but that in the context of health insurance have a different meaning. For example, when asked to choose the best definition of the word *premium* (in the context of health insurance), 25% selected the wrong answer. Considering that the word *premium* has 6 potential uses as a noun, 3 as an adjective, and 2 in idiomatic expressions, choosing the wrong answer is understandable. In everyday life, the word *premium* most commonly denotes something of high value, and the thesaurus synonym is *bonus*. Not surprisingly, 20% (n = 101) respondents chose either “a bonus you get at the end of the year for staying insured” or “the best type of health insurance you can buy.” Only 5% (n = 23) responded that they did not know.

It is plausible that members anticipating an elective hospital admission who erroneously overestimate their out-of-pocket costs—as 20% of black, 17% of Hispanic, and 19% of white enrollees did—could decide to forgo or postpone needed care for fear that they would not be able to afford it. On the other hand, 50% of black and 66% of Hispanic enrollees underestimated their out-of-pocket costs. Among those whose language preference is Spanish, only 9% could calculate their out-of-pocket expense accurately. Similar case scenarios could be constructed with every wrong answer. In nearly every case, the problem was more severe for people of color or with limited English proficiency. Additional qualitative research and empirical data are needed to shed light onto these hypothetical case scenarios. There are multiple reports of the difficulty of selecting a plan, even among experts such as health economists and other highly educated consumers. Peer-reviewed articles, testimonials, and the grey literature frequently highlight the complexity of our current commercial insurance system as a barrier to the selection and use of health plans. Together, the deficits in HIL documented in this survey compose one of several root causes of the discrepancy between consumers’ expected benefits and their actual experience.

Limitations

A limitation of our study is the lack of information about enrollees’ previous insurance status and year of enrollment. It is possible that new enrollees or those with the shortest exposure to insurance have greater difficulty with insurance terminology than those with previous experience. Nonetheless, our results suggest that a concerted effort to test educational approaches that improve HIL among all Connecticut residents, but most especially among minorities and those with less than a high school education, is warranted. Should HIL education prove to be effective, a broad-based educational campaign with contributions from private and public organizations could reduce the overall and disparate HIL gap over time. In the meantime, increased and better point-of-care health insurance navigation support by trained “insurance coaches” could partially overcome HIL barriers. In the best of cases, we believe that HIL education and insurance navigation support are only palliative measures rather than root-cause solutions to efficient selection

and use of overly complex health insurance products. Regretfully, current policy curtailing funding for marketing, communication, and support for ACA enrollment will only exacerbate disparities.

Given the difficulty selecting and using health insurance among even highly educated consumers, a more fundamental solution is needed: a drastic simplification of plan designs, fewer but more meaningful choices, and efficient defaults. An example of simpler insurance is the Basic Health Plan deployed successfully in New York and Minnesota⁹ or the Connecticut Medicaid plan. These plans either exclude cost sharing or have substantially simplified cost-sharing rules.

CONCLUSIONS

Low HIL disadvantages racial/ethnic minorities disproportionately. A demonstrably effective HIL educational campaign, coupled with point-of-care health insurance navigation support and efforts to simplify health insurance designs, can enhance the value of health insurance for all. ■

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REFERENCES

- Carman KG, Eibner C, Paddock SM. Trends in health insurance enrollment, 2013-15. *Health Aff (Millwood)*. 2015;34(6):1044-1048. doi: 10.1377/hlthaff.2015.0266.
- Quincy L. Making health insurance cost-sharing clear to consumers: challenges in implementing health reform’s insurance disclosure requirements. *Issue Brief (Commonw Fund)*. 2011;2:1-17.
- Loewenstein G, Friedman JY, McGill B, et al. Consumers’ misunderstanding of health insurance. *J Health Econ*. 2013;32(5):850-862. doi: 10.1016/j.jhealeco.2013.04.004.
- Paez KA, Mallery CJ. A little knowledge is a risky thing: wide gap in what people think they know about health insurance and what they actually know. American Institutes for Research website. air.org/sites/default/files/Health%20Insurance%20Literacy%20brief_Oct%202014_amended.pdf. Published October 2014. Accessed January 30, 2018.
- Long SK, Goin D. Large racial and ethnic differences in health insurance literacy signal need for targeted education and outreach. Urban Institute website. hrms.urban.org/briefs/literacy-by-race.html. Published February 6, 2014. Accessed January 30, 2018.
- Villagra VG. Enhancing the value of health insurance by making it simpler. Reform to Transform website. reformtotransform.files.wordpress.com/2015/11/2t-policy-briefs-2-0-simplifying-health-insurance-final2.pdf. Published October 2015. Accessed January 30, 2018.
- Bhargava S, Loewenstein G. Choosing a health insurance plan: complexity and consequences. *JAMA*. 2015;314(23):2505-2506. doi: 10.1001/jama.2015.15176.
- Barnett JC, Vornovitsky MS. *Health Insurance Coverage in the United States: 2015*. Washington, DC: United States Census Bureau; 2016. census.gov/content/dam/Census/library/publications/2016/demo/p60-257.pdf. Accessed February 2, 2018.
- Tolbert J, Antonisse A, Dorn S. Improving the affordability of coverage through the Basic Health Program in New York and Minnesota. Kaiser Family Foundation website. files.kff.org/attachment/Issue-Brief-Improving-the-Affordability-of-Coverage-through-the-Basic-Health-Program-in-Minnesota-and-New-York. Published December 8, 2016. Accessed February 2, 2018.

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