

# Financial Literacy and Consumer Choice of Health Insurance

## Evidence from Low-Income Populations in the United States

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"Low Financial Literacy May Counteract Benefits of Consumer Choice of Health Insurance: Evidence from Low-Income Populations in the United States"

**Abstract**

Under the U.S. Affordable Care Act (ACA), many low income consumers will become eligible for government support to buy health insurance. Whether these consumers are able to take advantage of the support and to make sound decisions about purchasing health insurance will likely depend on their knowledge and skills in navigating complex financial products. This ability is frequently referred to as "financial literacy". We examined the level and distribution of consumers' financial literacy across income groups, using 2012 data collected in the RAND American Life Panel, an internet panel representative of the U.S. population. Financial illiteracy was particularly prevalent among individuals with incomes between 100-400% of the Federal Poverty Line, many of whom will be eligible for subsidies. In this group, the young, less educated, females, and those with less income were more likely to have low financial literacy. Our findings suggest the need for targeted policies to support vulnerable consumers in making good choices for themselves, possibly above and beyond the support measures already planned for in the ACA.

## **INTRODUCTION**

With the implementation of the Affordable Care Act (ACA), millions of Americans will need to make a high-stakes financial decision: choosing appropriate health insurance. The ACA includes incentives for individuals to take up health insurance, including an individual mandate with penalties for noncompliance, subsidies for low-income households, and the health insurance exchanges as new marketplaces where individuals can compare and shop for insurance.

The ability of consumers to understand and navigate the new environment, and the rules and regulations, is critical to the intended functioning of U.S. health care reform. This ability is particularly important for low-income households who may be affected by the penalty and subsidy, and may be likely to obtain their coverage through the insurance exchanges. In particular, the penalty is the higher of a flat fee or a percent of income (\$95 or 1% of income in 2014), and households with low incomes are more likely to incur the flat-fee - implying that their penalty is large relative to their income.

Similarly, government support is targeted at consumers with relatively low household incomes (between 100 and 400% of the

Federal Poverty Line, FPL, or \$23,550 to \$94,200 annually for a family of four in 2013). These consumers may be eligible to receive premium tax credits and cost-sharing subsidies that are phased out over this income range. Subsidy-eligible consumers who have access to health insurance through their employer will further have to be able to assess whether switching to a plan in the health insurance exchange will be more or less beneficial than staying with their old coverage and thus foregoing subsidies. These calculations will depend on the available income as well as on family size and available health insurance plans.(1) Experience with other government entitlements, such as Medicaid and the Earned Income Tax Credit, suggest that many eligible households may not take up the subsidies.(2)

In addition to navigating the penalty and subsidy schedules, health plan choice itself may be confusing for consumers. Many have little experience and proficiency with selecting health insurance, a choice of a multidimensional product that requires understanding deductibles, co-payments, out-of-pocket limits and other complex attributes and making trade-offs between these attributes. Experience is limited even among those individuals who currently have health insurance through their employer as many of those select their coverage from a limited menu of employer-sponsored plans: in 2012, more than 80% of firms

offered only one type of plan.(3) The insurance mandate and potential penalties make it costly not to purchase health insurance, while potential access to subsidies adds to the complexity of choice. Research on employer-sponsored health insurance and Medicare suggests that individuals consistently overpay for health insurance as they give unmerited weight to some plan attributes in their initial choice or do not switch as better choices become available.(4,5) In one employer-based setting, about one-third of workers were enrolled in a plan that was unambiguously worse than available alternative plans.(6)

Under the ACA, the health insurance exchanges will offer active consumer guidance (navigators, help lines) and passive support (tiers by actuarial value, explanations, etc.) to assist consumers in choosing appropriate coverage. However, comparing and selecting plans can remain a daunting task. The role model for the insurance exchanges, the Massachusetts Connector, offers plans in three high-level tiers of actuarial value (bronze, silver, gold; the ACA adds a fourth tier, platinum). These are further divided into three groups each (low, medium, high) and the Connector screens plans that participate in the program by awarding its "Seal of Approval". Evidence of choices in the Connector suggests that consumers struggle to make good choices even in a supportive setting and may use overly simplistic

heuristics to guide their decisions.(7,8) Qualitative work and small-scale experiments indicate the relevance of these concerns to the exchanges.(9,10)

Successfully navigating the penalties, subsidies, and health insurance choices requires sufficient understanding of complex financial relationships. As recognized in research on related areas of financial decision-making, consumers often lack the understanding, ability and confidence to make financial choices that are in their best interest.(11) Consumers' financial literacy, "the ability to use knowledge and skills to manage financial resources effectively for a lifetime of financial well-being"(12), has been found to be critical to decisions in areas such as retirement planning, investing and debt.(11,13) Financial literacy may also be critical to achieving many of the coverage objectives of the ACA because the decision to purchase insurance or not will depend on financial penalties and subsidies and the choice of a plan will in part depend on expected costs. To shed light on consumers' ability to navigate the ACA and understand subsidy eligibility and financial consequences of foregoing health insurance, we examined the distribution of a measure of general financial literacy.

## **DATA AND ANALYSIS**

To measure financial literacy we used data from the RAND American Life Panel (ALP), a population-representative online panel. The ALP includes about 6,000 civilian, non-institutionalized individuals ages 18 and older who are reimbursed for their participation in the panel and are provided with a computer and internet access if not already available (<https://mmicdata.rand.org/alp/>). Sample weights are provided to correct for remaining selectivity and allow population inference using benchmark distributions from the Current Population Survey (CPS). Since 2006 the ALP has supported a wide range of research studies. We combined individual responses to questions on insurance status in ALP survey 192 (fielded to 4,924 people in March to June 2012 with a response rate of 76%) with the same respondents' answers to questions on financial literacy recorded in ALP survey 243 (fielded to 4,643 people in March and April 2012 with a response rate of 71%; the financial literacy questions are described below.) The joint response rate for these two surveys was 63%. We used information on household income and size to express income as percent of the FPL, which will be used to determine federal subsidies under the ACA. We excluded respondents with a reported income above 1,000% of the FPL (\$230,500 for a family of four in 2012) as well as individuals aged 65 and older.



These groups are unlikely to be directly affected by the policy changes. Table 1 shows the distribution of ALP respondents in our study sample. Among those with incomes between 100-400% of FPL, 30% (261 of 868) were uninsured. The uninsured had lower educational attainment and income and were less likely to be employed and working than the insured. They also had relatively lower scores on the financial literacy questions, although this difference was not statistically significant.

We employed general measures of financial literacy since, to our knowledge, there are no validated measures of financial literacy in the context of health insurance. General financial literacy focuses on domains such as numeracy, understanding of compound interest and inflation, as well as risk diversification and investing.<sup>(11)</sup> The associated measures were developed primarily in the context of saving and planning for the future. We used a widely used set of three questions on numeracy, inflation, and risk diversification that are shown in Table 2. The questions were designed to assess knowledge of basic concepts of finance. As these measures have been developed in the context of savings and portfolio choice,<sup>(11)</sup> they do not map perfectly to the choice of health insurance. However, measures of general financial literacy will likely capture individuals' comfort with

complex financial products, which could affect choices about not only saving and investing but also products like health insurance.

We constructed an index of financial literacy from these three questions by counting the number of correct responses for each individual, as is typically done in the financial literacy literature. The bottom panel of Table 1 shows the individual components of the index. There was a moderate correlation between the answers to the individual financial literacy questions: the correlation coefficients between the answers to questions 1 and 2, 1 and 3, and 2 and 3 were 0.23, 0.18, and 0.33, respectively.

Our analysis has several potential weaknesses. First, our measures of financial literacy are not specific to health insurance and, as a result, may miss important concepts that are relevant to consumers' abilities to choose. Our measures do not test for respondents' understanding of insurance terminology, such as deductibles, cost-sharing and copayments nor of drug tiers and in/out of network care. Given the added complexity of health insurance, our measure of financial literacy may therefore not capture the true level of "financial literacy in

health insurance.” However, basic financial literacy is likely important to understanding the financial consequences, such as penalties and subsidies, of the decision to purchase health insurance or forgo coverage under the ACA. Second, this analysis focused on an online panel that, while representative of the U.S. population, may not precisely reflect the population that will be required to make choices under the ACA. As incomes fluctuate especially for lower-income households, some of the respondents between 100-400% of the FPL will be eligible for Medicaid while others may exceed the subsidy eligibility threshold in 2014.(14) Nevertheless, households that are eligible at the time the program is implemented are likely to be similar to those who would have been eligible had the program been implemented at the time of data collection. Many households may also have access to employer-sponsored insurance and hence select from a more limited, preselected menu of plans. However, even these households will have to decide if they are better off in the exchanges where they could receive government subsidies. Third, we could not identify in the ALP whether respondents were dependents who could be covered under their parents’ policy. However, our results were comparable when excluding respondents younger than 26 years. Fourth, income in the ALP is self-reported and interval-coded (<\$5,000, \$5,000-\$7,499, \$7,500-\$9,999, etc.). We took the center of each income

interval to construct income in percent of the FPL. Our results were robust to using either the upper or the lower bound of the intervals. Finally, the surveys we used for the empirical analysis had a joint response rate of 63%, and those who did not respond may have differed from the respondents. However, the statistical weights ensured that our sample remained representative for the U.S. population based on observable characteristics.

## **RESULTS**

On average, respondents in the 100-400% FPL sample answered 1.9 of the three financial literacy questions correctly, while respondents with income between 400-1000% of FPL answered on average 2.4 questions correctly (Table 1). This difference was statistically significant ( $p\text{-value} < 0.001$ ). Across all groups of individuals in our sample the numeracy question had the highest score. Those who did not have health insurance performed worse on all measures of financial literacy, although the differences were not statistically significant.

### **Differences by income group**

Figure 1 plots the financial literacy index and its three components for groups at different income levels. The figure

indicates that general financial literacy increased with income and that this increase flattened out for incomes above 400% of the FPL. Financial literacy was particularly low for the population eligible to receive subsidies and most likely to enroll in the exchanges (incomes between 100 and 400% of the FPL, as measured in 2012). The empirical pattern suggests that these individuals may have difficulties in responding to the opportunities and requirements of the ACA. The individual components of the index had similar patterns as the overall index.

#### **Characteristics of those with limited financial literacy**

Table 3 focuses on individuals with incomes between 100% and 400% of the FPL and compares those with lower levels of financial literacy (0 or 1 question answered correctly) to those with higher levels of financial literacy (2 or 3 questions answered correctly). The young, less educated, women, and individuals with low income were more likely to have low financial literacy. Furthermore, individuals who did not report having health insurance were more likely to have low financial literacy. The difference, however, was not statistically significant (p-value 0.13). In multivariate regression age, sex, education and income remained the only statistically

significant predictors of low financial literacy (see Appendix Table 1).

## **CONCLUSION**

The ACA's penalties, subsidies and health plan choice require consumers to understand and make complex financial decisions with potentially significant consequences. Using nationally representative data to document levels of financial literacy by income as a percent of FPL, we found that financial literacy increased with income and was lowest among individuals with income less than 400% of the FPL. Although the ACA provides this group with subsidies to purchase insurance, their low levels of financial literacy may impede the uptake of this support and, ultimately, reduce the benefits of the ACA to these consumers.

Financial literacy is low in the population most likely to face complex choices of health insurance under the ACA. Consumers with low financial literacy may not fully understand the potential financial consequences of foregoing insurance and may not reap the full benefits of available government support to obtain coverage. Furthermore, they might struggle to discriminate among different plans and may ultimately select a plan that does not best fit their interests.

In addition to the important benefits for individuals' welfare, supporting consumers in making their choices could drive down premiums and thus reduce government spending on the premium tax credit, as the latter is tied to market premiums.

Targeted tracking and improving of consumers' financial literacy may be a cost-effective policy with significant benefits for consumers. Consumer decision-support tools in particular may be critical to the success of the ACA. These tools need to accommodate the needs of all consumers, including those with low financial literacy.

## NOTES

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**List of tables and figures (in order)**

Table 1: Descriptive statistics of ALP sample. Table, source: ALP

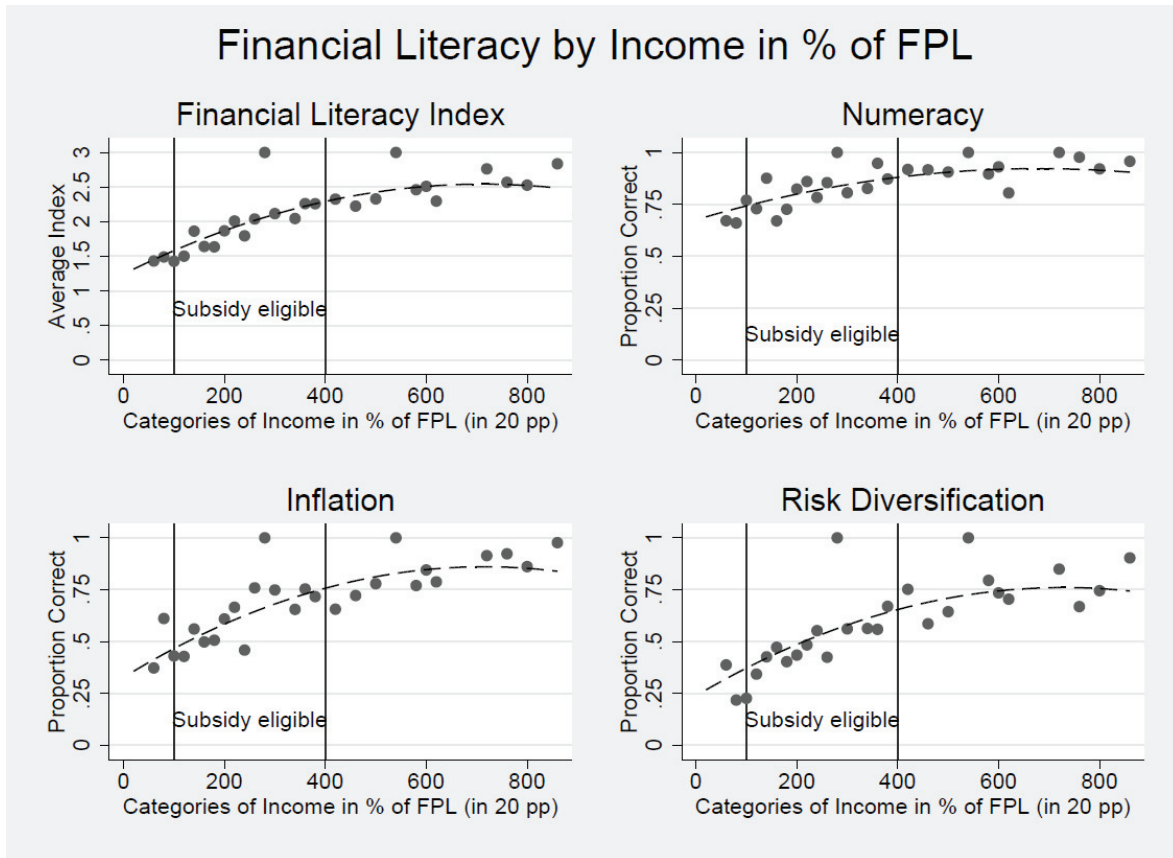
Table 2: Financial Literacy Questions in ALP. Table, source: ALP

Figure 1: Financial Literacy by Income Group. Figure, source: ALP

Table 3: Characteristics of respondents by score on the financial literacy questions. Table, source: ALP

Appendix Table 1: Linear Probability Model of Low Financial Literacy. Table, source: ALP

Figure 1: Financial Literacy by Income Group



**Table 1: Descriptive statistics of ALP sample**

	Whole Sample		100-400% FPL					
	Mean	SD	All		Uninsured		Insured	
			Mean	SD	Mean	SD	Mean	SD
<b>Age (years)</b>	41.6	11.5	40.5	11.2	39.2	11.2	41.2	11.1
<b>Female (%)</b>	51.2	50.0	49.5	50.0	51.4	48.9	48.6	50.5
<b>Married (%)</b>	63.4	48.2	59.7	49.1	58.7	48.2	60.1	49.5
<b>Race (%)</b>								
<b>White</b>	74.0	43.9	73.4	44.2	62.4	47.4	78.4	41.6
<b>Ethnicity (%)</b>								
<b>Hispanic</b>	23.0	42.1	25.7	43.7	32.2	45.7	22.8	42.4
<b>Education (%)</b>								
<b>High School</b>	47.3	49.9	50.6	50.0	54.3	48.8	48.9	50.5
<b>Some College</b>	29.0	45.4	32.8	47.0	36.2	47.0	31.3	46.9
<b>BA or equiv.</b>	23.8	42.6	16.6	37.2	9.5	28.6	19.9	40.3
<b>Income (% FPL)</b>	318.1	225.1	227.5	82.7	190.8	69.2	244.3	83.2
<b>Working</b>	64.6	47.9	66.0	47.4	49.6	48.9	73.6	44.6
<b>Employed</b>	58.5	49.3	61.3	48.7	42.7	48.4	69.8	46.4
<b>Financial Literacy (FL)</b>								
<b>FL Index</b>	1.99	0.97	1.91	0.96	1.81	0.90	1.95	0.98
<b>Numeracy</b>	0.82	0.38	0.80	0.40	0.77	0.41	0.82	0.39
<b>Inflation</b>	0.64	0.48	0.61	0.49	0.60	0.48	0.62	0.49
<b>Risk</b>	0.53	0.50	0.49	0.50	0.44	0.49	0.52	0.50
<b>Diversification</b>								
<b>N</b>	1898		868		261		607	

Notes: Based on ALP survey MS 243, individuals aged 18-64 with income of maximal 1000% of FPL, excluding snowball sample and individuals with missing information on relevant individual or household characteristics. Measure of health insurance comes from ALP survey 192. Raking weights are used to correct for sample selection.

**Table 2: Financial Literacy Questions in ALP (\* indicates the correct answer)**

**1. Numeracy:** Suppose you had \$100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?

- 1 More than \$102\*
- 2 Exactly \$102
- 3 Less than \$102
- 4 Don't know

**2. Inflation:** Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, would you be able to buy:

- 1 More than today
- 2 Exactly the same as today
- 3 Less than today\*
- 4 Don't know

**3. Risk Diversification:** Please tell us whether this statement is true or false. Buying a single company stock usually provides a safer return than a stock mutual fund.

- 1 True
- 2 False\*
- 3 Don't know

Source: ALP.

**Table 3: Characteristics of respondents by score on the financial literacy questions**

	<b>Financial Literacy Questions</b>				<b>Difference</b>	<b>p-value</b>
	<b>0-1 correct</b>		<b>2-3 correct</b>			
	<b>Mean</b>	<b>SD</b>	<b>Mean</b>	<b>SD</b>		
<b>Age (years)</b>	37.5	8.9	42.0	12.0	-4.5	<0.001
<b>Female (%)</b>	58.5	44.0	45.0	52.2	13.6	0.03
<b>Married (%)</b>	57.3	44.2	60.8	51.3	-3.5	0.55
<b>Race (%)</b>						
<b>White</b>	69.2	41.2	75.5	45.2	-6.2	0.21
<b>Ethnicity (%)</b>						
<b>Hispanic</b>	33.7	42.2	21.8	43.3	11.9	0.02
<b>Education (%)</b>						
<b>High School</b>	65.2	42.5	43.3	52.0	21.9	<0.001
<b>Some College</b>	23.9	38.1	37.3	50.8	-13.4	
<b>BA or more</b>	10.9	27.8	19.4	41.5	-8.5	
<b>Income (% FPL)</b>	204.8	71.8	238.8	85.5	-34.0	<0.001
<b>Working (%)</b>	66.0	42.3	66.0	49.7	-0.1	0.99
<b>Employed (%)</b>	61.0	43.5	61.4	51.1	-0.4	0.94
<b>Insured (%)</b>	62.9	43.1	71.4	47.5	-8.5	0.13
<b>N</b>	229		639			

Notes: Individuals with income between 100-400% of FPL, weighted. p-values are displayed for testing hypotheses that the differences in means are equal to 0 using t-tests for all items except for education where Pearson's chi2 test was used. Source: authors' calculations using ALP.

Appendix

Table 1: Linear Probability Model of Low Financial Literacy

	<b>Coefficient</b>	<b>t-statistic</b>
<b>Age</b>	-0.008***	(-3.79)
<b>Female</b>	0.183***	(4.13)
<b>Married</b>	-0.041	(-0.85)
<b>White</b>	-0.021	(-0.41)
<b>Hispanic</b>	0.096	(1.63)
<b>Some College</b>	-0.224***	(-4.49)
<b>BA or more</b>	-0.215***	(-3.82)
<b>Income (100 % FPL)</b>	-0.396**	(-2.29)
<b>Income squared</b>	0.065*	(1.82)
<b>Working</b>	0.075	(0.70)
<b>Employed</b>	-0.085	(-0.80)
<b>Insured</b>	0.012	(0.22)
N		868
R2		0.158

\* p<.1, \*\* p<.05, \*\*\* p<.01

Notes: t-statistics in parenthesis. Coefficients of linear probability model displayed with indicator for low financial literacy (zero or one questions answered correctly) as dependent variable. Model incorporates weights to adjust to US population. t-statistics are based on heteroskedasticity robust Huber-White standard errors.