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Exploring Links between Health Perceptions and Financial Knowledge

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Abstract

Results from a random sample of 530 undergraduate students indicated that almost 50% of respondents ranked their health as being very good (30.2%) or excellent (19.6%) compared to 11.7% and 4.7%, respectively, who regarded their financial knowledge as being very good or excellent. Students who indicated that they were in excellent health were more likely to answer the financial quiz question on stock market risk correctly. Income and gender influenced the scores earned on the financial literacy quiz, but scores were invariant to age, academic classification, area of residence, household size, marital and work status, race, and health perceptions.

Keywords: financial knowledge, financial stress, health perceptions, National Financial Capability Survey, students

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Introduction

Since the 2008 global financial crisis, economists and others in the financial service industry have been shining a spotlight on Americans' low levels of financial literacy and their ramifications on the economy and consumers' health and well-being. In 2009, the Financial Industry Regulatory Authority Investor Education Foundation conducted the first National Financial Capability Survey to measure Americans' financial capabilities. Follow-up studies were conducted in 2012 and 2015. In all three studies, less than 50% of survey participants were able to correctly answer four or more of the five financial quiz questions.

Anderson, Baker, and Robinson (2017) incorporated questions from the National Financial Capability Survey along with questions from other sources to measure financial literacy among a sample of LinkedIn members. They found that, on average, financial literacy was low and that there were positive correlations among financial literacy, precautionary savings, and retirement planning for perceived but not actual scores earned on the financial quiz. Low-literacy respondents were less willing to accept financial advice. Kramer (2016) found a similar result on overconfidence and the seeking of financial advice among survey participants from the Netherlands. Respondents with higher confidence were less likely to seek advice than their corresponding counterpart.

Gubler and Pierce (2014) explored relationships between the decision to contribute to a 401(k) retirement plan and corrective actions to improve poor physical health. They found a high correlation between the two activities for those who contributed to the 401(k) plan compared to those who did not contribute. Other research findings suggested that health and financial literacy led to improvements in the health and well-being and better decision making in older adults (James et al., 2012), that conscientiousness and financial literacy were consistent predictors of asset accumulation among young adults (Letkiewicz and Fox, 2014), and that there were strong positive associations between financial literacy and net worth (van Rooij, Lusardi, and Alessie, 2012). O'Neill, Xiao, and Ensle (2016) used an online quiz to examine relationships between health and financial practices. They concluded that statistically significant relationships existed between health and financial behaviors with respect to time commitments and the avoidance of selected negative health practices. Race, income, and education levels also influenced these practices. O'Neill (2015) drew similar conclusions.

Consumer education programs focusing on health and personal financial management issues have been undertaken for several decades (O'Neill, Xiao, and Ensle, 2016). However, because of the 2008 financial crisis and Great Recession, rising healthcare costs, obesity rates, student loan debt, and financial stress, and the complexity of financial products, federal and state agencies and educational institutions are adopting a more holistic approach when addressing health and financial issues in order to improve the effectiveness of the educational programs being offered (Frentzel et al., 2010; Heckman, Lim, and Montalto, 2014).

As college costs and student debt load mount, more students are indicating that they are under financial stress, that the stress is causing anxiety, and that it is affecting their academic performance (Heckman, Lim, and Montalto, 2014). Coupled with financial stress is the high level of financial illiteracy prevalent among college students. Personal financial management

courses are often not taught in high schools or in colleges. Many college students lack the financial acumen to navigate the increasingly complex world of finance. Consequently, many do not understand how to budget, save, invest, or the importance of credit, among others. Because of the high level of financial illiteracy, concepts such as the time value of money are often not well understood, and as a result of which, many students often borrow more money than they will be able to comfortably repay from future earnings. Financial illiteracy and poor financial decisions can lead to future financial stress and health issues.

The two major health effects of financial stress are anxiety and depression, but financial stress can also cause or worsen a host of other health issues, including heart disease/attack, gastrointestinal problems, weight gain/loss, eating disorders, diabetes, insomnia, psoriasis, cancer, high blood pressure, and substance abuse (Cambridge Credit Counseling Corporation, 2017). Given the level of financial stress expressed by many college students, the negative health effects of financial stress, and the low level of financial literacy among young adults, our study explores whether there are links between health perceptions and financial knowledge in a selected group of college students.

Objectives

The study's specific objectives are to i) describe students' perceptions of their health status and levels of financial knowledge; ii) compare perceptions of health with performance on the National Financial Capability Survey quiz; iii) determine whether selected sociodemographic characteristics—age, academic classification, area of residence, household size, income levels, marital status, work status, gender, race, and health perceptions—influence performance on the financial literacy quiz. The study provides baseline data and enables us to help students to expand their knowledge about their health and finances.

Methods and Procedures

The study's data were compiled from a random sample of 530 undergraduate students in fall 2015. The survey's primary focus was to measure participants' level of knowledge on basic personal financial management concepts. The 48-item survey gathered information on self-assessments of financial literacy and health; budget, credit and credit cards, saving, and investing; financial experiences; and demographic characteristics—age, academic classification, major, area of residence, household size, marital and work status, race, family household income, and gender.

To address the stated objectives, we used a subset of the data on perceptions of health and financial knowledge, performance on the National Financial Capability Survey quiz, and sociodemographic characteristics. Data on health perceptions were compiled by asking respondents to rank whether they perceived their overall health as poor, fair, good, very good, or excellent. To measure perceptions on financial knowledge, respondents were given a similar five-point scale from which to rank their levels of financial knowledge as poor, fair, good, very good, or excellent. The financial literacy quiz questions dealt with interest rate computation (INTEREST), inflation (INFLATION), bond prices (BOND), mortgage payments (MORTGAGE), and stock market risk (RISK).

The data were analyzed using descriptive statistics, the Chi-square tests for independence, and linear regression. Equation (1) shows the linear regression model used in the study to determine whether relationships existed between the dependent variable, SCORE, and the selected demographic characteristics. The variables, their definitions, and summary statistics are given in Table 1.

$$(1) \quad \text{SCORE} = \beta_0 + \beta_1 \text{AGE} + \beta_2 \text{CLASS} + \beta_3 \text{LIVE} \\ + \beta_4 \text{HSIZE} + \beta_5 \text{INCOME} + \beta_6 \text{MSTATUS} + \beta_7 \text{WORK} \\ + \beta_8 \text{GENDER} + \beta_9 \text{RACE} + \beta_{10} \text{HEALTH} + \varepsilon,$$

where β s are unknown parameters to be estimated and ε is a random error term.

Table 1. Variables, Definitions, and Summary Statistics

Variables	Definitions	Summary Statistics
Independent		
<i>AGE</i>	Participants' age in years	19 (mean)
<i>CLASS</i>	Freshman = 1; otherwise = 0	49%
<i>LIVE</i>	Lives on campus = 1; lives off campus = 0	51%
<i>HSIZE</i>	Number of persons living at participants' permanent address	3 (median)
<i>INCOME</i>	Family's total household income: <\$15,000=1; \$15,000–\$34,999 = 2; \$35,000–\$49,999=3; ≥\$50,000=4	2 (median)
<i>MSTATUS</i>	Single, never married = 1; otherwise = 0	94%
<i>WORK</i>	Working = 1; otherwise = 0	47%
<i>GENDER</i>	Male =1; female = 0	39%
<i>RACE</i>	African-American = 1; otherwise = 0	90%
<i>HEALTH</i>	Poor =1; fair =2; good = 3; very good = 4; excellent = 5	3 (median)
Dependent		
<i>SCORE</i>	Percentage Earned on Financial Quiz	29.25%

Empirical Results and Discussion

From the results, 81.9% of the participants regard themselves as being in good (32.3%), very good (30%), or excellent health (19.6%). At the other end of the spectrum, 52.5% of the participants indicate that they possessed good (40.8%) to very good (11.7%) financial knowledge, while about 4.7% assess their knowledge as excellent. The average age of participants is 19 years. Most participants are freshmen (49%), living off campus (51%), single (94%), female (61%), and African-American (90%). Median household income is between \$15,000 and \$34, 999, and 53% do not have a job. The average score on the financial quiz is 29.25% (Table 1).

Table 2 shows cross-tabulations between participants' health perceptions and their performance on the National Financial Capability Survey. The results suggest that overall performance is low and not dissimilar from performance at the state and national levels. The results also indicate that there are no statistically significant differences between health perceptions and performance on the quiz except for the question on stock market risk. Participants who ranked their health as being very good or excellent performed better on that question than those who perceived their health as being poor, fair, or good. Although our sample is more homogeneous than in several of the articles reviewed, our results concur with studies that suggest that healthier individuals are more likely to invest in the stock market than those who are less healthy.

Table 2. Cross-Tabulations between Health Perceptions and Performance (%)

Responses	Poor	Fair	Good	Very Good	Excellent	Chi-Square	P-Value
Total	2.8	15.3	32.3	30.0	19.6		
Interest							
Incorrect	3.6	16.3	30.1	30.7	19.3		
Correct	1.8	13.8	35.3	29.0	20.1	3.277	0.513
Inflation							
Incorrect	2.8	15.2	31.2	30.7	20.1		
Correct	2.9	15.4	35.3	27.9	18.4	0.933	0.920
Bond							
Incorrect	2.7	15.3	30.6	31.1	20.2		
Correct	3.2	15.2	37.6	26.4	17.6	2.571	0.632
Mortgage							
Incorrect	2.8	15.3	32.3	30.0	19.6		
Correct	3.4	15.2	32.9	31.7	16.9		
Correct	1.7	15.5	31.0	26.4	25.3	6.583	0.160
Risk							
Incorrect	3.1	15.2	35.7	29.5	16.4		
Correct	1.7	15.5	19.8	31.9	31.0	17.800***	0.001

Results from the multivariate analysis in Table 3 suggest that performance is statistically significantly influenced by income and gender but invariant to age, academic classification, area of residence, household size, marital status, work status, race, and health perceptions. Other things held constant, the average score on the quiz is about 23%. Participants from higher income households perform slightly better than those from lower income households. Male participants score about 9 percentage points higher on the quiz than female participants. These results also suggest that level of financial literacy is low and must be addressed to give students a better opportunity to effectively manage their finances.

Table 3. Linear Regression Results

Variables	Estimated Coefficients	Standard Error	t-Value	P-Value
Constant	23.234***	5.740	4.048	0.000
AGE	0.055	0.260	0.212	0.832
CLASS	-1.828	2.275	-0.804	0.422
LIVE	-2.972	2.182	-1.362	0.174
HSIZE	0.985	0.729	1.351	0.177
INCOME	1.665*	0.952	1.749	0.081
MSTATUS	1.100	3.686	0.299	0.765
WORK	-1.612	2.071	-0.778	0.437
GENDER	8.506***	2.176	3.909	0.000
RACE	-1.066	3.799	-0.281	0.779
HEALTH	0.570	1.016	0.560	0.575
F-Value	2.539***	0.005		

Notes: Single and triple asterisks (*, ***) imply statistical significance at the 10% and 1% level, respectively.

Summary and Conclusions

The study's main objectives were to document students' perceptions of their health and financial knowledge; their performance on the National Financial Capability Survey financial quiz, and whether there were any associations among performance, sociodemographic characteristics, and health perceptions. The results indicated no statistically significant relationships between health perceptions and performance on the quiz questions dealing with interest rate, inflation, bond prices, and mortgage payments. However, students who rated their health as being very good or excellent were more likely to correctly answer a question about whether a single company's stock was riskier than a stock mutual fund. Male participants and those from higher income households performed better on the financial literacy quiz.

Since the 2008 financial crisis and the passage of the Affordable Care Act in 2010, researchers are recognizing that many Americans do not have the tools to successfully navigate the financial and healthcare markets, even as they are being asked to make more health and financial decisions. Thus, more studies are combining the two issues to develop better ways to educate consumers in these two very important areas. Although our study was primarily about financial literacy, it provided us with a small window on these two important issues so we can help to educate students in these areas. Financial literacy is low throughout the country, while overweight and obesity rates and healthcare costs are skyrocketing. Given the rising federal budget deficit and healthcare costs, it is incumbent on all of us to learn about money and how to take better care of our health. Colleges and universities can play a greater role in getting the information to young adults and in so doing help them to become more informed citizens. We must strive for this goal so as not to impede future economic growth.

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