



Perceived Financial Vulnerability, Wealth, and Wealth Change: The Health and Retirement Study

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ABSTRACT

Objectives: The 6-item Perceived Financial Vulnerability (PFV) scale assesses awareness and psychological vulnerability regarding finances. Prior findings using the Health and Retirement Study (HRS) identified significant associations of PFV with wealth, demographics, and health status. This study examines the relationship between wealth, changes in wealth, and PFV.

Methods: Data from HRS respondents were analyzed ($N = 1,056$). Total assets at baseline (2016) and changes in total assets over two waves (2016 to 2018) were stratified into deciles and used as primary predictors of PFV in 2018. Multiple linear regression models examined the influence of demographics, wealth change (linearly and curvilinearly), and baseline wealth on PFV.

Results: Wealth change and baseline wealth were associated with PFV. When controlled for baseline wealth, wealth loss linearly predicted increased PFV.

Conclusions: These findings support the utility of the PFV. Findings underscore the importance of integrating multifaceted financial and demographic information when conceptualizing subjective financial welfare.

Clinical Implications: Financial wellbeing is crucial in older clients and should be assessed over time. The 6-item PFV effectively evaluates contextual aspects of financial decision-making across socioeconomic statuses, making it valuable for clinical assessments.

KEYWORDS

Financial exploitation;
perceived financial
vulnerability

Age-Associated Financial Vulnerability is a concept used to describe a pattern of financial behavior which places an older adult at significantly higher risk for loss of resources, due to financial decision making that is inconsistent with the financial decisions they were making at a younger age (Lachs & Han, 2015). The concept involves four potential contributing domains of risk associated with financial vulnerability: cognitive/emotional, medical/functional, psychosocial, and environmental/societal (Lachs & Han, 2015). Better understanding of the multiple dimensions of finances and financial vulnerability is becoming increasingly important for clinical gerontologists as the intersection of finances and physical and mental health is better understood (Lichtenberg, Campbell, et al., 2020). Using the Health and Retirement Study (HRS), for example, Hsu and Willis (2013) found that declines in financial management skills (e.g., bill paying)

were largely related to an older person's cognitive skills, and Angrisani and Lee (2019) examined the relationship between cognitive loss and private wealth loss using the HRS. Their data showed that significant memory loss across a 4-year period was associated with an average wealth loss of more than \$30,000 compared with those who were non-impaired. More recently, using Medicare claims data across a 19-year period, Nicholas et al. (2021) reported that subprime credit scores and missed bill payments increased significantly shortly after a diagnosis of Alzheimer's disease. Previous studies have linked decline in financial decision-making to reduced cognition, even in adults without dementia or mild cognitive impairment (Boyle et al., 2013; Han et al., 2016; James et al., 2015). In other words, even cognitively intact older adults may experience changes that make them financially vulnerable. Emotional factors have repeatedly been linked to

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the experience of fraud and financial exploitation in older adults. Lichtenberg et al. (2013, 2016) used the Leave Behind Questionnaire from the HRS and found that psychological vulnerability was the best predictor of who reported being defrauded. The HRS measures wealth, and financial literacy, but until recently, had not measured Perceived Financial Vulnerability. This study examined how well PFV was able to predict wealth loss, when accounting for wealth at baseline.

Literature review

The 6-item Perceived Financial Vulnerability (PFV), a measure derived from items on the Lichtenberg Financial Decision-making Rating Scale, was included in an experimental module of the Health and Retirement Study in (2018). Items on the PFV assess financial awareness and the perception of personal susceptibility related to finances. Lichtenberg, Paulson, et al. (2020) applied factors from each of the predictive domains of Age-Associated Financial Vulnerability to the PFV. Baseline (Lichtenberg et al., 2016) objective measures of wealth (total household assets and earnings) significantly predicted PFV in 2018, as did a variety of factors (demographic, cognitive, psychological, medical, and functional) associated with Age-Associated Financial Vulnerability (Lichtenberg, Paulson, et al., 2020). It was concluded that the PFV is a useful tool in understanding the nature of the perceived challenges that older adults have when managing their finances (Lichtenberg, Paulson, et al., 2020). Arber et al. (2014) found that, like the PFV, subjective financial well-being was significantly related to health. However, it is still relatively unclear how Perceived Financial Vulnerability may be related to actual financial stability and/or change (Lichtenberg, Paulson, et al., 2020).

Perceived financial vulnerability is an escalating social concern and when connected to financial exploitation vulnerability, becomes an area ripe for assessment from clinical gerontologists. Financial exploitation is defined as the misuse or misappropriation of an older person's funds, including fraud and scams as well as family or friend exploitation (Conrad et al., 2010). Self-reported financial vulnerability using a 17-item

scale, for example, was related to experiencing financial exploitation (Lichtenberg, Paulson, et al., 2020). Adults who have experienced financial exploitation may also experience increased rates of depression, anxiety, and post-traumatic stress disorder (Acierno et al., 2019; Lichtenberg et al., 2019; Weissberger et al., 2020). Psychological health may be especially impacted among adults who experienced a significant financial burden following financial exploitation, prior to intervention (Hall et al., 2022).

The true costs of financial exploitation in older adults are unknown. Using data from the IC3 (the Internet Crime Complaint Center, leveraged by the FBI to gather intelligence of internet crimes, including fraud and scams) in the United States, the FBI reported financial exploitation costs to older adults of approximately \$3.4 billion each year 2023. The trends in the data are clear – more cases of financial exploitation are being reported by older adults, and older adults report losing the greatest amount of money compared to any other age group. Included in this report is a comparison of the number of exploitation cases reported over time. The number of complaints of financial exploitation for adults over age 60 increased from a little over 20,000 in 2018 to nearly 120,000 in 2023. Financial losses associated with these complaints grew nearly 7-fold during this time from \$500,000 to \$3.4 Billion dollars. According to the Consumer Financial Protection Bureau (2019) from 2013 to 2017, there was a fourfold increase in the number of reports submitted by financial service businesses regarding suspicious activity related to older adults. These data likely reflect increased cases of suspected exploitation as well as better reporting by financial professionals.

Financial exploitation is one outcome of financial vulnerability and leads to changes in perceptions and behaviors of financial decision-making and trust (Lichtenberg, Campbell, et al., 2020; Nguyen et al., 2021). Adverse outcomes can occur when there is either insufficient or excessive protection of older adults who may be financially vulnerable – inadequate protection increases the risk of exploitation, while excessive protection can restrict an older person's autonomy and sense of control (Lichtenberg et al., 2015). It is important to

assess financial vulnerability and identify risk factors that lead to financial vulnerability. Identifying older adults who may be susceptible to the decline of financial skills, judgment, and the capacity to recognize and prevent exploitation is crucial to protect them (Marson et al., 2000). The PFV, as opposed to general measures of mental health, can provide clinical gerontologists with some quick screening for financial vulnerability in older adult clients. Given that the PFV was related to wealth and mental and functional health measures, further examination of the PFV is indicated. Evaluation of how well the PFV is associated with change in wealth may add to the clinical utility of the PFV to clinical gerontologists.

Purpose of the study

The present study attempts to replicate and build on previous findings about perceived financial vulnerability (Lichtenberg, Paulson, et al., 2020) by again using a population-based study of older adults. In this study, the longitudinal relationships between PFV, total wealth, and wealth change were examined, to test further the utility of the PFV measure. We investigated how a change in total assets may influence an individual's PFV. For this, we relied on the concept of utility (i.e., total utility and marginal utility) in economics. Specifically, hypotheses were based on the law of diminishing marginal utility, which posits that when assigning value to units of something desirable (such as money or goods), each additional unit gained is perceived as a smaller increase in overall value than the last (Berkman et al., 2016). Applied to our study, for example, we hypothesize that a net loss of \$5,000 (change in wealth) may be perceived as marginal by a wealthy household and therefore correspond to a lower PFV. However, this wealth change may be perceived as significant to a non-wealthy household, resulting in a higher PFV. This construct can be paralleled with the psychological construct of habituation (Berkman et al., 2016). Habituation is a learning process by which repeated exposure to a stimulus results in a decreased response to that stimulus (Rankin et al., 2009).

In the present study, it was hypothesized that individuals with the greatest loss in wealth would have the highest PFV scores, while those who made

the greatest wealth gains over the two-year period would have the lowest PFV scores. Furthermore, it was hypothesized that the impact of the net change in wealth on PFV would be proportional to the initial overall financial status of the household. Hypotheses were specified as follows:

Hypothesis: Net change in wealth will negatively predict PFV when accounting for initial household wealth. Specifically, after accounting for the effect of total wealth on PFV, remaining variability in PFV will be predicted by change in wealth, such that those with the greatest relative financial losses over a 2-year interval will have the highest PFV scores, and those with the greatest wealth gains across the two-year period will have the lowest PFV scores.

Methods

Participants

Participant data was drawn from the Health and Retirement Study (HRS), a longitudinal panel study sponsored by the National Institute on Aging (grant number NIA U01AG009740) and conducted by the University of Michigan (RAND HRS Longitudinal File (V1), 2023; Health and Retirement Study, 2018, 2023). The initial wave of the HRS study began in 1992, with subsequent follow-ups occurring every two years. Detailed information regarding the HRS design and data collection methods can be found in published reports (Heeringa & Connor, 1995). The present sample was drawn from Waves 13 and 14 of the HRS, corresponding to the years 2016 and 2018, respectively. From the pool of participants ($N=17,146$) enrolled in the HRS in 2018, a total of 1,400 individuals were randomly selected to complete the Perceived Financial Vulnerability measure. Participants were included in the present study if they were at least 50 years old in 2018, reported identifying as either Black/African American or White/Caucasian, and had complete demographic (gender, ethnicity, years of education), total wealth, and PFV data in the HRS (See Figure 1 for CONSORT diagram). Including only White and Black participants was a priori decision made to accommodate well-known limitations of the HRS data. In an effort to protect identities of participants in less numerous racial groups, the masked HRS race

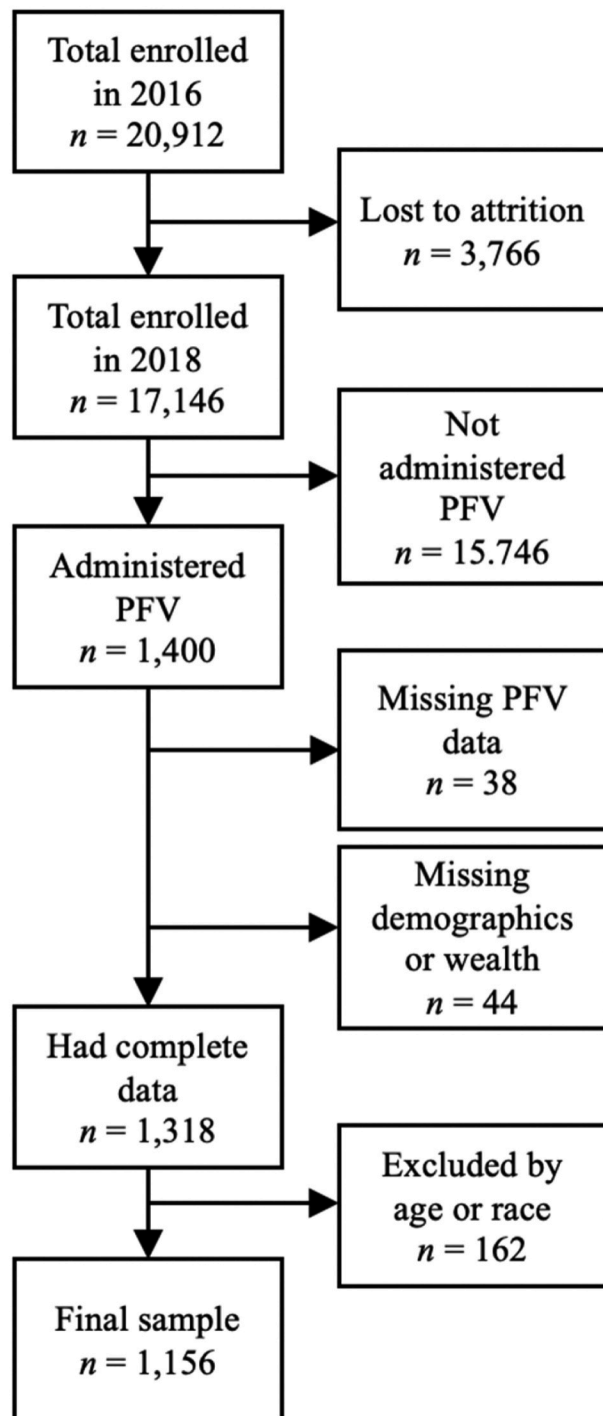


Figure 1. CONSORT diagram depicting final sample derivation from 2016 HRS data.

variable includes only three groups; White, Black, and other. This latter group, as a result, is both small and highly heterogeneous from a racial perspective. The exclusion of participants in this “other” racial group was thus made to facilitate interpretability of findings. Sociodemographic data of the final sample can be found in [Table 1](#).

Table 1. Descriptive statistics for the final sample.

Variable	Mean (or %)	SD
Gender (% Female)	57.50%	
Race		
Black/African American	22.80%	
White/Caucasian	77.20%	
Hispanic Ethnicity	9.20%	
Age	67.91	10.64
Years of Education	13.11	2.88
PFV Score	8.74	2.09

Measures

Perceived Financial Vulnerability (PFV)

The 6-item Perceived Financial Vulnerability (PFV) was derived from the 34 contextual items of the Lichtenberg Financial Decision Rating Scale (LFDERS), a 56-item scale (Lichtenberg et al., 2015). The PFV was developed from the seven items that assess financial awareness and psychological vulnerability regarding personal finances. The PFV is designed to be administered as a structured interview, with multiple-choice response options. Question 4 responses yielded minimal variability and, therefore, Question 4 was excluded from the survey. Therefore, only six items were included in the final measure. The items are presented in [Table 2](#). The total score is the sum of the six items using a 3-point Likert scale and ranges from a minimum of 6 to a maximum of 18. Higher scores indicated higher levels of financial vulnerability. Psychometric properties reported in the development of the PFV include internal consistency assessed inter-item correlations which ranged from .10 to .40 (Lichtenberg, Paulson, et al., 2020). The PFV also demonstrated marginal internal consistency (Cronbach’s $\alpha = 0.59$), Kaiser-Meyer-Olkin value of 0.721, a single factor accounting for the variance in the items (Eigenvalue = 2.0). These metrics indicate that patterns of responding across questionnaire items are somewhat related to one another and are likely a valid representation of a unified underlying construct. Given that items were picked by the HRS team across three different item subtests it is not surprising that internal consistency is only marginal. The PFV may be more of an index of financial vulnerability than a true measure of one internally consistent scale.

Table 2. Perceived financial vulnerability survey questions.

Original Item Number	Question
1	The next few questions are about making financial decisions. The first one is – how often do you feel anxious about your day to day financial decisions or transactions? Would you say never, sometimes, or often?
2	How often do you wish that you had someone to talk to about financial decisions, transactions, or plans? Would you say never, sometimes, or often?
3	How worried are you that someone will take away your financial freedom? Would you say not at all worried, somewhat worried or very worried?
5	How confident are you in making big financial decisions? Would you say confident, unsure or not confident?
6	When it comes to making financial decisions and transactions, how often are you treated with less courtesy and respect than other people? Would you say never, sometimes or often?
7	How often has someone talked you into a decision to spend or donate money that you did not initially want to do? Would you say never, sometimes or often?

Table 3. Percentile cutoffs of wealth variables.

Percentile	Wealth Change	Baseline Wealth
0 (Min)	-\$2,350,000.00	-\$291,500.00
10	-\$137,150.00	\$0.00
20	-\$43,300.00	\$7,086.00
30	-\$14,450.00	\$42,500.00
40	-\$500.00	\$90,240.00
50	\$4,000.00	\$150,000.00
60	\$20,101.60	\$233,200.00
70	\$55,000.00	\$378,694.80
80	\$104,000.00	\$626,560.00
90	\$284,600.00	\$1,246,350.00
100 (Max)	\$30,576,000.00	\$11,985,000.00

Total wealth and wealth change

The wealth variables utilized for this study were drawn from the total household wealth variable computed by the RAND corporation for the HRS. This variable reflects the sum of all components of wealth (value of checking, savings, primary residence, real estate, etc.), with total debt subtracted. See Bugliari et al. (2023) for details regarding construction of this variable. The dollar value for each 10% of wealth change (loss or gain) is presented in Table 3.

Data preparation

Total wealth at baseline (2016) and change in total wealth over two waves (2016–2018) were independently stratified into deciles and used as primary predictors of participants' PFV scores in 2018. Furthermore, to reduce multicollinearity, each of these new variables were mean-centered.

Statistical procedures

A multiple linear regression analysis was conducted in IBM SPSS Statistics (Version 29.0.1.0) to examine the relationships between demographic variables (age, gender, dichotomized race, ethnicity,

and years of education, baseline wealth), wealth change, and PFV scores.

Results

Bivariate and descriptive statistics

The final sample included 1,156 respondents to the HRS. Respondents were 57.5% female and 77.2% Caucasian. 22.8% of the sample were African American and 9.2% of the sample identified as Hispanic. Average age was 67.91 ($SD = 10.64$) and on average, participants reported completion of 13.11 ($SD = 2.88$) years of education. Table 3 includes the breakdown of decile groups for both baseline wealth and change in wealth.

Primary analysis

The initial analysis (see Table 4, Model 1) demonstrated a small but statistically significant effect of demographic variables, including household economic status, on PFV score ($R^2 = 0.09$, $F(6,1149) = 19.43$, $p < .001$). To fully test our hypothesis that wealth change would be a significant predictor of PFV scores, the final model included demographics,

Table 4. Standardized regression weights predicting perceived financial vulnerability.

	Model 1	Model 2
Age	−0.09*	−0.10*
Years of Education	0.02	0.03
Race	0.04	0.03
Gender	0.02	0.02
Hispanic Ethnicity	0.01	0.01
Baseline Wealth	−0.26*	−0.26*
Change in Wealth		−0.09*
R^2	.09	.10
R^2 change		.01
p -value		.001

* $p < .05$.

baseline wealth, and linear wealth change (see Table 4, Model 2). The regression was statistically significant ($R^2 = 0.10$, $F(7,1148) = 18.28$, $p < .001$), with wealth change significantly related to PFV. That is, relative to the household baseline wealth, the amount of change in wealth was linearly related to PFV scores. Those with the highest relative wealth loss also had the highest PFV scores.

Discussion

The main finding in this study was that wealth change in a population-based sample of older adults, was significantly related to PFV. Although only 10% of the total variance was accounted for, it is striking that wealth loss was significantly related to PFV scores even after controlling for baseline wealth. For example, according to the theory of marginal utility described in the introduction, a loss of \$5,000 is quite different for individuals in the lowest deciles than it is for individuals in the highest decile. Perceived financial vulnerability is relevant to clinical gerontologists in three main ways: (1) this subjective perception of finances is related to both mental and physical health; (2) as discussed in the introduction, financial vulnerability is a risk factor for financial exploitation and/or a consequence of financial exploitation (Lichtenberg, Paulson, et al., 2020). Further empirical work will need to be done with this 6-item measure to determine its relationship to financial exploitation, and (3) as shown in this study, wealth changes are related to PFV. This latter finding provides further evidence for the utility of this 6-item PFV.

Perceived financial vulnerability may be related to well-being and financial decision-making in several ways. As demonstrated in the present study, changes in wealth correspond to perceptions of increased financial vulnerability among older adults, and this vulnerability is disproportionately felt when the change represents higher proportions of their overall wealth. This was evidenced by the curvilinear impact of wealth change on PFV in the third model, such that those with financial losses closer to zero reported the most perceived financial vulnerability. When controlling for overall assets, financial vulnerability was directly related to proportionate wealth loss, regardless of economic status. This finding is

supported by the economic construct of diminishing marginal utility (Berkman et al., 2016), such that those with greater total assets required more units lost for financial vulnerability to be negatively impacted, given that individual units (dollars) may be attributed lower values among older adults in possession of higher baseline dollar amounts. The present study does not evaluate other causal factors for financial vulnerability but supports the construct and utility of PFV because those experiencing significant wealth loss report feeling financially vulnerable. Previous literature indicates that PFV is also a correlate of demographic, cognitive, psychological, medical, and functional factors (Lichtenberg, Paulson, et al., 2020). Thus, present findings represent one more unique factor (objective financial changes) that can be indicative of feelings of financial vulnerability among older adults, which, as previously discussed, can lead to other aversive consequences like financial exploitation.

In addition to objective wealth changes, financial vulnerability and financial decision-making may be related to cognitive changes. In a sample of over 400 older adults, Boyle et al. (2013) found that even subtle age-related cognitive decline (i.e., decline that would not be in the range of cognitive impairment) was related to lower financial decision-making. Further, Stewart et al. (2018) found that financial decision-making may well be a related but separate construct from cognition. Researchers in the Rush University Memory and Aging Project (Boyle et al., 2013; Han et al., 2016) examined the relation between cognition and financial decision-making longitudinally. Importantly, findings from the Rush group suggest that decision-making and cognition are related but relatively distinct constructs, and that decision-making is highly influenced by psychological factors (Han et al., 2016). Notably, present findings do not speak to the interaction between objective wealth change, financial vulnerability, and cognitive decline, which therefore represents a direction of future study.

This study has several limitations worth noting here. Available data in the HRS permits comparison of Black and White participants living in the United States, though more comprehensive comparisons of other populations may be very informative to our understanding of PFV. A second limitation is the conceptual difficulty of contextualizing economic

data in a nation-wide sample. Macroeconomic changes over time (e.g., 2008 collapse of the housing market, high inflation during 2023) disproportionately affect older adults who often rely on fixed incomes and may be limited in their ability to adapt to changing circumstances (Cutler et al., 1991). Additionally, there exists wide regional variation in scales of local economies impacting cost of fuel, food, and housing, among other expenses. Future research may seek to better understand how these regional variations impact PFV among older adults. Finally, these findings do not address how individual differences (e.g., neuroticism, orientation to personal finance) impact self-evaluation of financial vulnerability, and future research may seek to explore these important questions.

Clinical implications

The relationship between aspects of finances and mental and physical health have been neglected by clinical gerontologists for too long. Financial vulnerability is an important aspect of social determinants of health. The Consumer Financial Protection Bureau (2015) highlighted the importance of a sense of control over finances, having freedom to make financial choices that improve the quality of life, and having financial security that enables one to absorb financial shock. Rarely are any of the aspects of financial vulnerability or financial well-being integrated into baseline assessments performed by clinical gerontologists. Financial vulnerability also increases an older adult's vulnerability to financial exploitation. Clinical gerontologists should be aware of the increasing losses suffered by older adults (FBI, 2023) to financial exploitation and that cognitive decline and/or psychological and physical vulnerabilities are risk factors for financial exploitation. Additionally, caregivers should be educated and made aware of situations in which older adults might become vulnerable to financial exploitation as they can help prevent it from happening (Choi & Mayer, 2000). This study supports the PFV as a tool that can be used as a way to assess for financial vulnerability and financial well-being.

- Clinicians should incorporate financial vulnerability assessments, such as the PFV, into baseline evaluations to better understand patients' financial well-being and related health risks.
- Awareness of financial vulnerability and risk of financial exploitation, especially among older adults with cognitive, psychological, and physical vulnerabilities, is crucial. Educating caregivers about these risks can help in early detection and prevention.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

Funding for this project was provided in part by the following grants: the National Institute of Justice [MU-CX-0001]—the opinions, findings, and conclusions or recommendations expressed in this publication are those of the authors and do not necessarily reflect those of the Department of Justice, National Institutes of Health [P30 AG015281], Michigan Center for Urban African American Aging Research, American House Foundation, Retirement Research Foundation, Michigan Alzheimer's Center Core grant #P30AG053760.State of Michigan Department of Health and Human Services and the Michigan Health Endowment Fund.

Data availability statement

Data used in the present study is available to the public. For more information, please visit the HRS website at <https://hrs.isr.umich.edu/>.

Ethical approval statement

This study included data from a large, publicly available, de-identified dataset. This study was determined as research not involving human participants and therefore was exempt from full review by the university's Institutional Review Board.

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