Research Article

Context Matters: Financial, Psychological, and Relationship Insecurity Around Personal Finance Is Associated With Financial Exploitation

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Abstract

Background and Objectives: Context can influence or overwhelm the intellectual and cognitive aspects of financial decision making but has only recently received increased attention. The construct validity of conceptual subscales from a financial decision-making scale was examined in the context of their relationship to financial exploitation.

Research Design and Methods: Two hundred forty-two community-based participants were recruited into the study. The final sample contained 242 participants. Measures included demographic variables, conceptually derived contextual items, and neurocognitive measures. Seventeen of the 34 contextual items investigated differentiated financially exploited and nonexploited older adults. Combining these 17 contextual items led to the creation of a new scale: the Financial Exploitation Vulnerability Scale (FEVS). Correlational analyses and area under the curve analyses were used to examine the relationship between this new scale of contextual items and other measures and to determine how clinically meaningful the scale was in the current sample.

Results: Contextual items were powerful discriminators between those who were exploited and those who were not. The new scale of contextual items (the FEVS) demonstrated good internal consistency (Cronbach's alpha = 0.82) and a strong area under the curve (receiver operating characteristic = 0.80), thereby indicating good clinical significance and evidence for construct validity.

Discussion and Implications: We examined the conceptually derived subscales of financial awareness, psychological vulnerability, and relationship strain and how these relate to financial exploitation. Our major finding is that contextual items differentiated between exploited and nonexploited adults, which demonstrate the importance of measuring context in financial decision making and exploitation. A new scale for measuring contextual items was introduced.

Keywords: Financial decision making, Elder abuse, Vulnerability

Understanding financial susceptibility in older adults—both susceptibility to financial exploitation (FE) and to deficits in informed decision making (i.e., financial decision-making capacity)—is becoming increasingly important, given recent increases in both the experience of financial victimization in the older population and its reporting. According to the Consumer Financial Protection Bureau (2019), in only 4 years (2013–2017), both deposit institutions and financial services businesses filed four times as many Suspicious Activity Reports. Almost 70% of these

reports were for individuals over age 60, and 33% were for persons over age 80.

The intersection of decision-making deficits and cognitive decline has been identified as a significant predictor of FE by Lichtenberg, Ficker, and Rahaman-Filipiak (2016) and Lichtenberg, Gross, and Ficker (2018a). FE was defined as the illegal or improper use of an elder's funds, property, or assets by either someone known to the victim or a stranger (Conrad, Iris, Ridings, Langley, & Wilber, 2010), and included theft and scams. Financial decisions were defined as "real-world," significant financial decisions an older adult was planning to make or had made within the past 6 months. Examples of financial decisions were whether to make a major purchase, seek debt relief, give a significant gift, or enter into a contract. The measure for financial decision making used in those studies was developed using a concept-mapping method that employed extensive input from experts across a variety of fields related to finance and financial transactions (see Lichtenberg, Stoltman, Ficker, Iris, & Mast, 2015, for a more complete description of this method). Concept mapping not only led to the creation of scale items for the Lichtenberg Financial Decision Rating Scale (LFDRS) but also to a conceptual framework.

An important part of the conceptual framework was contextual subscales—that is, a person's perception of their financial security and psychological and relationship insecurity in relation to personal finance. The core elements of informed decision making are the intellectual factors described by Appelbaum and Grisso (1988) and include being able to communicate a choice; understanding of the choice; appreciation of the risks, benefits, and potential impact of the choice; and having a rationale for the choice that is not based on delusions or undue influence. However, our experience indicates that the context within which one is making an important decision can also influence, and even overwhelm, the intellectual factors described above. Therefore, in creating a new financial decision-making scale, we included contextual factors. These contextual factors contain three subscales. The Financial Awareness subscale aimed to assess the quality of financial experience and any strain an older adult was experiencing at the time of a major financial decision. The Psychological Vulnerability subscale aimed to assess traditional psychological constructs such as depression, anxiety, and loneliness, as these were specifically tied to finances and financial decisions. The Susceptibility subscale aimed to assess the level of conflict tied to financial decisions and relationship strain due to finances.

Most studies of FE in older adults have examined general characteristics of their samples (e.g., depression, health conditions) without testing a specific conceptual model (see Shao, Zhang, Ren, Li, and Lin [2019], for a review). In contrast, this study has two main purposes. First, we aimed to examine whether the contextual factors in the Lichtenberg financial decision-making conceptual framework (i.e., financial awareness, psychological vulnerability

with respect to finances, and relationship strain due to finances) are useful for distinguishing older adults who have been exploited from those who have not. Although the conceptual framework was created to assess financial decision making, it has also been shown to be useful for identifying FE victims in a preliminary sample and a cross-validation paper of the Lichtenberg Financial Decision-making Screening Scale (Campbell, Gross, & Lichtenberg, 2019; Lichtenberg et al., 2018a). Second, we aimed to determine whether cognitive and contextual measures are independent predictors of FE when entered into a logistic regression with demographic measures.

Literature Review

Beginning in 2010, the prevalence of FE and its correlates was examined in population-based samples. Acierno and colleagues (2010) reported that 5.2% of all older adults in their sample had experienced FE during the previous year, and 60% of such instances consisted of family members' misappropriation of money. Laumann, Leitsch, and Waite (2008) reported that 3.5% of their sample had been victims of FE during the previous year. Younger older adults (ages 55–65) and African Americans were more likely to report FE, and participants with a romantic partner were less likely. Beach, Schulz, Castle, and Rosen (2010) found that 3.5% of their sample reported experiencing FE during the previous 6 months, and almost 10% had at some point since turning 60. In their sample, African Americans were again more likely to report FE. The authors found that depression and impaired activities of daily life (ADLs) were additional correlates of FE. These three studies make clear that the prevalence of FE of older adults is high and that it is a multidimensional problem with health, sociodemographic, and psychological correlates.

Acierno, Hernandez-Tejada, Anetzberger, Loew, and Muzzy (2017) followed up with their original sample 8 years after the first interview and found that those who reported being financially exploited in the 2010 study were more likely to suffer depression, poorer self-rated health, and generalized anxiety than those who did not report being exploited. Weissberger and colleagues (2019) also measured mental health functioning in a small group of older adults who reported being exploited and compared them with a group of nonexploited older adults who were matched demographically. Similar to Acierno and colleagues, they found that the exploited group had higher self-reported depression and fewer reports of aging successfully. A lack of sleep and heightened anxiety also distinguished the two groups.

The FE literature has attempted to identify the risk factors that render older adults more vulnerable to victimization. These include younger-old age (Arcieno et al., 2010; Boyle, Wilson, Yu, Buchman, & Bennettt, 2013; Garre-Olmo et al., 2009); poor physical health (Wood, Lui, Hanoch, & Estevez-Cores, 2016); and less fulfillment

of social needs or limited social support networks (Choi & Mayer, 2000; Lichtenberg, Stickney, & Paulson, 2013). Other risk factors include low performance on measures of financial skills and numeracy (Wood et al., 2014); less financial satisfaction (Lichtenberg et al., 2013); lower levels of education (Boyle et al., 2012); and lower literacy (James, Boyle, & Bennett, 2014). The Rush University research group (Boyle et al., 2012, 2013; Han et al., 2016) has contributed greatly to the literature on financial decision making and scam susceptibility, which is a form of FE. The studies cited above not only link financial decision-making declines to reduced cognition—even without dementia—but also link brain regions and decision-making findings to scam susceptibility.

Cognitive decline and executive functioning deficits were also identified as risk factors that increase susceptibility to victimization (Boyle et al., 2012; Choi & Mayer, 2000; Garre-Olmo et al., 2009; Judges, Gallant, Yang, & Lee, 2017; Wood et al., 2014). Wood and colleagues (2014) compared a sample of older adults referred to the Los Angeles County Elder Abuse Forensic Center for possible FE with a sample of community-dwelling older adults with no evidence of FE to examine the neuropsychological correlates of financial elder abuse. The authors found that the FE group performed worse on the Mini Mental Health Status Exam and measures of executive functioning and processing speed.

Burnes and colleagues (2017) conducted a meta-analysis to measure the prevalence of a specific form of FE—fraud—and demonstrated that there is great variability in how fraud is measured and how that variability is related to prevalence rates. Overall, a prevalence rate of 5.6% fraud victimization per year was reported. Shao and colleagues (2019) focused their review on what renders older adults vulnerable to fraud. While there is considerable debate about whether older adults are more susceptible to fraud than other age groups, Shao and colleagues focused on six types of phenomena that were related to fraud in some studies or conceptualizations: cognitive functioning and cognitive decline (James et al., 2014); emotional regulation and the positivity effect—the tendency of older adults to have reduced arousal response to negative circumstances surrounding a financial decision and to have positive expectations around decision making (Spreng, Karlawish, & Marson, 2016); the interplay between personal competencies and the environment (Pinsker, McFarland, & Pachana 2009); social isolation (Alves & Wilson, 2008); risk taking (Samanez-Larkin et al., 2007); and psychological vulnerability (Lichtenberg, Sugarman, Paulson, Ficker, & Rahaman-Filipiak, 2016).

DeLiema (2018) investigated routine activity theory as a context for fraud susceptibility and found that isolation and a lack of trustworthy friends or family best distinguished those who had been defrauded from those who had not. Routine activity theory requires the convergence of three factors: an offender, a target, and the absence of others to protect the target. Other recent research has focused on social contexts that influence exploitation. Quinn,

Nerenberg, Navarro, and Wilber (2017) highlight diverse ways in which vulnerabilities impact the risk of being unduly influenced, and Ruffman, Murray, Halberstadt, and Vater (2012) found that older adults are less able than younger adults to detect lies, due to changes in emotion recognition.

A number of methodological issues arise regarding the measurement of FE, with or without fraud (Jackson, 2018), and its correlates. Self-report data, whether they over- or underreport exploitation, can be problematic; financial confusion about a contract or purchase, for example, may be perceived as FE. Second, risk factors are presented without examining their clinical significance—for instance, none of the studies reported in the literature review employed a receiver operating characteristic (ROC) curve or effect size analysis. The lack of such analyses makes it difficult to know how to employ these risk factors in the clinical assessment of FE susceptibility. Whereas reporting statistical significance indicates a reliable difference between groups, further analyses such as receiver operating curves show how useful the differences between groups can be in clinical situations (i.e., in determining vulnerability to FE). Third, as Shao and colleagues (2019) point out, the theories presented are broad, not specific to FE, and can be applied to almost any phenomenon related to aging.

Financial Decision-Making Abilities and Their Relation to Exploitation

To create a conceptual framework for their financial decision-making rating scale, Lichtenberg and colleagues (2015) focused on an actual major financial decision (or set of related decisions) an older adult had made or was planning to make. Five subscales were originally adopted, and through factor analysis (Lichtenberg et al., 2018b) were reduced to four subscales: Intellectual, Financial Awareness, Psychological Vulnerability, and Susceptibility. Financial Awareness, Psychological Vulnerability, and Susceptibility were the three contextual subscales. Contextual factors were considered in relation to how they might or might not impact or overwhelm the intellectual factors. For example, someone experiencing extensive coercive efforts by another may be too vulnerable to make a financial decision that would be viewed as autonomous or authentic; in several studies, we found that financial decision-making intersects with FE (Campbell et al., 2019; Lichtenberg et al., 2018a). However, rating an older adult's intellectual factors in communicating choice, understanding, rationale, and appreciation requires training and experience (see https://www.olderadultnestegg.com). In contrast, the contextual factors are self-reported items and encompass personal finance areas such as financial strain, financial self-efficacy, financial satisfaction, anxiety or depression regarding finances, the presence of or loss of a confidante with whom finances were discussed, relationship strain due to finances, and conflicts about how money is spent.

Purpose of the Study and Study Hypotheses

Given the hidden nature of FE, it is important that we assess financial decision making and exploitation in a sample of nondemented, community-dwelling older adults with varying degrees of education and wealth. As Pillemer, Connolly, Breckman, Spreng, and Lachs (2015) stated during the White House Conference on Aging, it is vital that financial decision making and exploitation be assessed in samples that include both older adults who have been exploited and those who have not.

This study sought to identify how well contextual subscale questions differentiated those who had been victims of FE from those who had not. The study also sought to investigate whether those contextual items that differentiated FE victims from nonvictims coalesced in a way that created a new, internally consistent, scale.

Hypothesis #1

Items from the Financial Awareness, Psychological Vulnerability, and Susceptibility subscales would differentiate between victims of FE and nonvictims.

Hypothesis #2

Taking the contextual items shown to be significant in differentiating FE victims from nonvictims and scoring them together to produce an overall, single Financial Vulnerability scale score would differentiate victims of FE and nonvictims and be clinically meaningful.

Hypothesis #3

The total score of the Financial Vulnerability scale and a measure of executive functioning would be independent predictors of belonging to the FE group. Because executive functioning has been consistently linked to financial decision making and to vulnerability to exploitation, it will be important to test the relative independence of a new scale derived from contextual items related to executive functioning.

Methods

Participants

Participant recruitment procedures

Participants were recruited from two sources: (1) Two hundred participants were recruited for the Lichtenberg scale validation study from a community-based group of volunteers, with inclusion criteria as follows: being age 60 or older, living independently in the community, reporting the ability to perform ADLs and independent ADLs, being a native English speaker, and having the ability to do some basic word reading. After receiving approval from the Institutional Review Board, three methods were used to recruit the community-based volunteer participants. First, more than 100 participants were directly recruited from the Healthier Black Elders Participant Registry, which is part of the University of Michigan–Wayne State University NIA P30 Resource Center for Minority Aging Research. This required additional approval from the Healthier Black Elders Community Advisory Board (see Hall et al., 2016, for details on recruitment and retention of registry members). Second, the first author gave a number of presentations to groups of older adults across a wide variety of locations and settings (e.g., senior centers, churches, independent living centers), and community participants were recruited at these events. Third, a snowballing technique was used, by which 38 of the 200 community participants were discovered to have been victims of FE within the past 18 months (see Lichtenberg et al., 2018a, for more details).

Questions on the LFDRS trigger responses that reveal FE, such as whether the person had recently made a financial decision they regretted or worried about; whether they were currently helping someone regularly with finances and, if so, how they felt about the situation; and whether they had ever lost money as a result of a financial decision. We used follow-up questions to learn the details of any concerns about FE and a consensus conference method to identify suspected financial exploitation. Examples of such cases included paying someone in advance for work that was never performed and giving a family member access to a bank account to withdraw $400, then learning that the person had withdrawn $5,000 and kept the money. All three coauthors met and reviewed each completed scale and the description of any money loss that might be related to suspected FE. An example of what was not considered FE was purchasing a home during an auction and having to pay recording or other fees the person had not realized would be added to the base price.

(2) Forty participants 60 years or older had been victims of scams and/or identity theft and sought financial coaching services through the Successful Aging through Financial Empowerment (SAFE) program, which provides services to assist with recovery from FE. These participants were referred by area professionals who work with older adults and/or by self-referral after attending a SAFE community education program, and had experienced FE as self-reported and further validated through bank or online credit report records (for a more complete description, see Lichtenberg et al., 2019). Prior to receiving services, the FE victims completed measures of financial decision making and cognition.

Measures

Contextual items

The 68-item LFDRS is fully described in Lichtenberg and colleagues (2018b). Thirty-four contextual items were included in this study. We eliminated questions that directly asked about financial management (e.g., "Do you have a

credit card you allow others to use?") or FE (e.g., "Have you ever lost money due to a financial scam, exploitation, or identity theft?"). *t* Tests were used to identify critical items on the scale and resulted in 17 items that differentiated FE victims from nonvictims. These 17 items were then assembled into a new scale, the Financial Exploitation Vulnerability Scale (FEVS), and scale items demonstrated good internal consistency (Cronbach's alpha = 0.82).

Neurocognitive functioning

Two standard measures were used to assess participants' neurocognitive functioning. The Mini-Mental Status Exam (MMSE) consists of 11 questions that assess cognitive functioning. The maximum total score is 30, and lower scores indicate lower cognitive function (Folstein, Folstein, & McHugh, 1975). The Trail Making Test Part B (TMT-B) is an executive functioning measure that evaluates attention and task-switching skills. Participants are scored on the number of seconds it takes to complete the task, in which circles are connected in order while switching from numbers to letters. Higher scores indicate poorer functioning (Reitan & Wolfson, 1985).

Statistical Analyses

Demographic comparison

In order to examine the extent to which demographic variables were related to FE, independent samples *t* tests (chi square analyses of dichotomous variables) were employed. Participants who had experienced FE and those who had not were compared on age, gender (male or female), race (Black or White), educational attainment, performance on neuropsychological testing (WRAT Word-Reading subtest, MMSE score, and TMT-B seconds to completion), and LFDRS total score.

Correlates of contextual risk

Pearson's *r* (point-biserial for dichotomous variables) correlational analyses were used to determine the strength of the relationship between the FEVS score, FE, demographic variables, and neuropsychological testing performance. Correlation analyses were run between the FEVS total score, age, gender, race, years of education, WRAT Word-Reading raw score, MMSE, and TMT-B seconds to completion.

Clinical utility of contextual scale

A ROC curve analysis was performed to determine the sensitivity, specificity, and positive and negative predictive power of the FEVS to detect FE, and the FEVS total score was used to detect a positive state of FE.

Predictors of financial exploitation

In order to determine the extent to which the measures (demographic factors, neuropsychological testing, and FEVS score) used in this study were independent predictors of FE, a logistic regression was run. Age, gender, race, education, WRAT Word-Reading, MMSE, TMT-B seconds, and FEVS were entered as predictors of FE status.

Results

As described in Table 1, the overall sample had a mean age of 71 years and a mean education level of 15 years. Seventy-two percent of the sample participants were women and 52% were Black. Those who had experienced FE were not significantly different from those who had not on age or gender (Table 1). Exploitation groups differed significantly on education ($t = 3.35$; $p < .001$); performance on a test of word reading ($t = 2.67$; $p < .05$); MMSE score ($t = 3.44$; $p < .001$); and time to completion on the TMT-B ($t = 6.71$; $p < .001$), such that those who had not experienced FE had attained higher education and performed better on these tasks. Black participants were more likely to have experienced FE than White participants $\chi^2 = 7.87$; $p < .05$).

In order to test Hypothesis 1—whether the contextual items differentiated the exploited group from the nonexploited—we compared the items individually and then constructed the scale. Thirty-four independent samples *t* tests were conducted to examine the extent to which the risk score for each contextual item of the LFDRS differentiated the two groups. Twenty items differentiated those who had been exploited from those who had not. On the majority of items, those who had been exploited had higher risk scores. However, on three items, those who had not experienced exploitation had higher scores: Participants who had not been exploited were more likely to report that they sought financial advice from others, were more likely to lend or gift their money, and felt more comfortable taking financial risks. These three items were not included in the final scale of contextual factors (the FEVS), and the other 17 items were retained (Table 2).

Pearson's *r* (point-biserial for dichotomous variables) correlations were used to examine the relationship of the FEVS total score to demographic variables and to neurocognitive tests (Table 3). The FEVS total score was not significantly related to gender or MMSE score at the $p < .05$ level, but it was significantly correlated with age ($r = -.16$, $p = .02$); race ($r = .16$, $p = .01$); education ($r = -.27$, $p < .001$); WRAT-Word Reading ($r = -.22$, $p = .001$); and TMT-B time to completion ($r = .33$, $p < .001$).

To test Hypothesis 2 and assess the clinical meaningfulness of the FEVS, ROC curve analysis was performed. The ROC results indicated good sensitivity and specificity of the scale items used to detect exploitation (area under the curve [AUC] = 0.814, 95% confidence interval [CI]: 0.757–0.871). The AUC result would be classified in the good range. By itself, therefore, and without any other information, the FEVS was able to distinguish between groups in a clinically meaningful way (Table 5). The clinical utility indicators of sensitivity, specificity, and positive

Table 1. Sample Demographics and Neuropsychological Testing

	No financial exploitation (*n* = 164)	Financial exploitation (*n* = 78)	Overall sample (*n* = 242)	
Age				
Years *M* (*SD*)	71.5 (7.4)	70.0 (7.8)	71.1 (7.6)	$t(236) = 1.39, p = .167$
Education				
Years *M* (*SD*)	15.4 (2.6)	14.2 (2.3)	15.1 (2.6)	$t(235) = 3.35^{**}$
Gender				
Female *N* (%)	117 (71.3%)	59 (74.7%)	176 (72.4%)	$\chi^2(1) = 1.86, p = .172$
Race				
Black *N* (%)	81 (49.4%)	51 (64.6%)	132 (54.3%)	$\chi^2(1) = 7.87^{*}$
WRAT-Word Reading				
Raw score *M* (*SD*)	58.0 (7.5)	54.8 (10.6)	57.0 (8.7)	$t(240) = 2.67^{*}$
MMSE				
Raw score *M* (*SD*)	28.7 (1.9)	27.6 (2.6)	28.3 (2.2)	$t(240) = 3.44^{**}$
TMT-B				
Seconds *M* (*SD*)	100.0 (46.2)	153.9 (76.3)	117.4 (62.8)	$t(234) = -6.71^{**}$

Note: MMSE = Mini-Mental Status Exam; TMT-B = Trail-Making Test Part B.
$^{*}p < .05; ^{**}p < .001.$

Table 2. Independent Samples *t* Test Contextual Items: Financial Exploitation Vulnerability Scale

	No financial exploitation (*n* = 164)	Financial exploitation (*n* = 78)	
Contextual Factors Total Scale	4.14 (3.88)	9.63 (4.94)	$t(238) = -9.33^{**}$
1. How worried are you about having enough money to pay for things?	0.60 (0.61)	1.11 (0.70)	$t(241) = -5.81^{**}$
2. Overall, how satisfied are you with your finances?	0.49 (0.68)	1.19 (0.91)	$t(241) = -6.69^{**}$
3. Who manages your money day to day?	0.02 (0.15)	0.13 (0.40)	$t(241) = -22.84^{*}$
4. How satisfied are you with this (money management) arrangement?	0.08 (0.31)	0.37 (0.66)	$t(241) = -4.60^{**}$
5. How confident are you in making big financial decisions?	0.29 (0.56)	0.65 (0.79)	$t(241) = -4.08^{**}$
6. How often do you worry about financial decisions you've recently made?	0.30 (0.61)	0.85 (0.80)	$t(241) = -5.85^{**}$
7. Have you noticed any money taken from your bank account without your permission?	0.10 (0.30)	0.25 (0.44)	$t(241) = -3.25^{**}$
8. How often do your monthly expenses exceed your regular monthly income?	0.30 (0.61)	0.82 (0.87)	$t(241) = -5.43^{**}$
9. How often do you talk with or visit others on a regular basis?	0.01 (0.16)	0.09 (0.33)	$t(241) = -2.46^{*}$
10. How often do you wish you had someone to talk to about financial decisions, transactions, or plans?	0.44 (0.64)	0.78 (0.76)	$t(241) = -3.71^{**}$
11. How often do you feel anxious about your financial decisions and/or transactions?	0.42 (0.64)	0.87 (0.74)	$t(241) = -4.92^{**}$
12. Do you have a confidante with whom you can discuss anything, including your financial situation and decisions?	0.16 (0.37)	0.30 (0.46)	$t(241) = -2.52^{*}$
13. How often do you feel downhearted or blue about your financial situation or decisions?	0.41 (0.57)	0.78 (0.65)	$t(241) = -4.57^{**}$
14. Are your memory, thinking skills, or ability to reason with regard to financial decisions or financial transactions worse than a year ago?	0.13 (0.34)	0.24 (0.43)	$t(241) = -2.23^{*}$
15. Has a relationship with a family member or friend become strained due to finances as you have gotten older?	0.25 (0.45)	0.54 (0.58)	$t(238) = -4.24^{**}$
16. Did anyone ever tell you that someone else you know wants to take your money?	0.02 (0.13)	0.21 (0.52)	$t(239) = -4.36^{**}$
17. How likely is it that anyone now wants to take or use your money without your permission?	0.11 (0.43)	0.49 (0.99)	$t(238) = -4.13^{**}$

Note: $^{*}p < .05; ^{**}p < .001.$

Table 3. Correlations Between Demographics, Neuropsychological Testing, and FEVS Scores

	Age	Gender	Race	Education	WRAT	MMSE	TMT-B
Gender	0.073						
Race	–0.289**	–0.278**					
Education	0.028	0.073	–0.216**				
WRAT	0.088	0.074	–0.282**	0.547**			
MMSE	–0.169**	–0.119	–0.155*	0.287**	0.496**		
TMT-B	0.177**	0.034	0.271**	–0.381**	–0.538**	–0.591**	
FEVS	–0.157*	–0.086	0.159*	–0.274**	–0.223**	–0.104	0.331**

Note: WRAT refers to the WRAT-Word Reading subtest. Correlations reflect the relationships between raw scores. FEVS = Financial Exploitation Vulnerability Scale; MMSE = Mini-Mental Status Exam; TMT-B = Trail-Making Test Part B.
*Correlation is significant at the 0.05 level (two-tailed). **Correlation is significant at the 0.01 level (two-tailed).

Table 4. Logistic Regression of Demographics, Neuropsychological Testing, and FEVS Scores Predicting Financial Exploitation

	B	*SE*	Wald	*df*	Sig.	Exp(B)
Age	–0.057	0.028	3.998	1	0.046*	0.945
Gender	0.610	0.441	1.910	1	0.167	1.840
Race	0.057	0.418	0.018	1	0.892	1.058
Education	–0.035	0.085	0.170	1	0.680	0.966
WRAT	0.052	0.030	2.996	1	0.083	1.053
MMSE	–0.114	0.109	1.100	1	0.294	0.892
TMT-B	0.014	0.004	11.835	1	0.001**	1.014
FEVS	0.209	0.042	25.070	1	0.000**	1.232
Constant	0.376	3.897	0.009	1	0.923	1.457

Note: FEVS = Financial Exploitation Vulnerability Scale; MMSE = Mini-Mental Status Exam; TMT-B = Trail-Making Test Part B.
*<.05; **<.01.

and negative predictive power were meaningful and are included in Table 5.

Logistic regression was used to examine Hypothesis 3 and determine which measures were independent predictors of FE status (Table 3). Given previous findings on the importance of cognition in FE, we expected that both the FEVS and a test of cognitive functioning would be independent predictors. Gender, race, education, WRAT-Word Reading, and performance on the MMSE were not significant predictors of exploitation outcome. In contrast, age [$B = -0.057$, Wald $\chi^2(1) = 4.00$, $p = .046$]; TMT-B time to completion [$B = 0.014$, Wald $\chi^2(1) = 11.84$, $p = .001$]; and FEVS score [$B = 0.21$, Wald $\chi^2(1) = 25.07$, $p < .001$] were found to be significant predictors of exploitation status. The overall concordance rate between predicted exploitation status and observed exploitation status was 80.6%. The probabilities predicted by the logistic regression of age, TMT-B, and FEVS score were included in a ROC curve analysis to determine the clinical utility of these predictors to detect FE risk. Results indicate that the predicted probabilities based on these three factors (age, TMT-B, and FEVS total score) had good sensitivity and specificity to detect risk for FE (AUC = 0.834, 95% CI: 0.777–0.891). In addition, the predicted probabilities using these three measures improved on the ability of the FEVS raw score to detect risk, but not significantly so compared with using only the FEVS score.

Discussion

Financial exploitation research is moving from being descriptive toward the application of theory or conceptual models that enable us to better understand and predict this complex phenomenon. For instance, DeLiema (2018) has used activity routine theory to better understand fraud, and Spreng and colleagues (2016) postulate that broader gerontological theory, positivity, and emotion regulation would yield better understanding of the broader phenomenon of FE. In this study, we examined the context of an individual's perceived financial reality, within which financial decisions are made—specifically, financial awareness, psychological vulnerability, and relationship strain—and how these relate to FE. These contextual factors were confirmed through factor analysis when we examined the psychometric properties of the LFDRS (Lichtenberg et al., 2018b). In this study, we eliminated items directly related to FE (e.g., "Have you ever lost money due to a scam?"; "Has someone else used your debit card?") and compared 30 items to identify which items differentiated the FE group from the non-FE group. The major finding of the study is that 17 items differentiated the groups—and, more importantly, these 17 items demonstrated the psychometric properties of a clinically useful financial vulnerability scale, with internal consistency of .82 and, as shown by ROC curve analysis, an AUC of .82.

What is it about these self-reported items of perceived financial context that differentiates the financially exploited

Table 5. FEVS Sensitivity, Specificity, and Negative and Positive Predictive Power for Each Cutoff Score

Cutoff	Sensitivity	Specificity	PPP	NPP
1 or greater	0.987	0.177	0.361	0.967
2 or greater	0.974	0.329	0.406	0.964
3 or greater	0.908	0.445	0.435	0.911
4 or greater	0.868	0.518	0.459	0.893
5 or greater	0.842	0.616	0.508	0.892
6 or greater	0.803	0.683	0.544	0.880
7 or greater	0.737	0.756	0.587	0.859
8 or greater	0.658	0.823	0.636	0.836
9 or greater	0.553	0.866	0.660	0.805
10 or greater	0.500	0.896	0.693	0.792
11 or greater	0.395	0.927	0.718	0.765

Note: NPP = negative predictive power; PPP = positive predictive power.

from the nonexploited? In creating the conceptual model for financial decision making, the central element was informed consent—the intellectual and communication factors associated with choice, understanding, appreciation, and rationale; contextual factors were somewhat secondary. These intellectual factors, for instance, were associated with substantiating FE in Adult Protective Services (APS) cases (Campbell et al., 2019). However, an APS sample may be more cognitively impaired and frailer than a community sample. In this study, we used a sample of community-based, independently living older adults who had experienced FE, and the contextual factors proved to be powerful in discriminating between exploitation and nonexploitation groups. The contextual items measured the individual's level of security with respect to finances and financial arrangements, psychological vulnerability regarding financial decisions and transactions, and relationship insecurity in terms of finances. An accumulation of these insecurities discriminated between the groups. Eight items measured aspects of financial security, six measured psychological and social vulnerability, and three measured relationship insecurity due to finances.

The notion of insecurity related to FE is not new. Loneliness, decreased financial satisfaction, dependence on others for ADLs, and decreased cognition have all been significantly related to exploitation in past research (Acierno et al., 2010; DeLiema, 2018). However, two findings from this study yield new directions. First, the items were conceptually derived to be contextual factors that people bring to financial decisions and transactions—unlike loneliness, which is a more general condition. Second, the items serve as a valuable scale for use in clinical and research settings.

The study has clinical implications. In health and mental health settings, vulnerability to financial exploitation is an increasingly important aspect of the older adult's life that requires better understanding. The scale's self-report items cannot only indicate who may be at highest risk for FE but, perhaps more importantly, be a vehicle for discussion of finances and their impact on the older adult's psychological state and relationships. Shame or embarrassment about being exploited precludes many older adults from reporting FE, but scale questions, in contrast, are nonthreatening and offer a means for gently probing vulnerability and the potential for current or future FE. In one case, for example, an older adult reported severe relationship strain on that item, and further discussion revealed that an adult child had begun stealing the older adult's money to support his drug habit.

An important question is how cognition and cognitive decline fit into examining FE in older adults. We were able to perform further analyses in this study to examine whether scores on our new financial vulnerability scale would be independent predictors of FE when demographic and cognitive factors were controlled for. The correlations in Table 3 indicate that the financial vulnerability scale score was significantly related to age, education, and cognition. Nevertheless, in a logistic regression, three measures were independent predictors of FE status: younger age, lower executive functioning, and a higher level of financial vulnerability. The resulting logistic regression did not outperform the prediction of FE group membership based on the financial vulnerability score alone. It is not surprising that insecurity about finances and relationships that involve finances are related to a decrease in executive functioning and to younger age. With regard to the latter, several studies have found risk for exploitation to be highest in the "younger-old"—a group that may be experiencing financial strain as they realize that they may not be financially prepared for retirement. With regard to executive functioning, epidemiologic studies on FE could include executive functioning tests that can be administered by phone for use in future surveys.

The study has several limitations. The sample is nonrandom, and thus its generalizability may be limited. Also, the sample size—though fairly large for studies of FE victims in the community—is modest, and thus future samples will need to validate our findings. We used a mixed group of FE victims who had experienced identity theft, stranger and family scams, and theft, and thus is not specific to one type of exploitation. Finally, the study is cross-sectional; future studies that involve longitudinal data can document the cause–effect cycle of FE and vulnerability. Nevertheless, the strength of the conceptual and empirical findings render this study significant. In addition, the large number of older Black adults in this sample—a group too often underrepresented in FE research—is another strength. This financial exploitation vulnerability scale (FEVS) can be used across medical, mental health, and social service settings to better understand older adults' insecurities and more quickly recognize when an older adult is at increased risk for financial exploitation.

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Conflict of Interest

None reported.

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