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## A Short Form of the Lichtenberg Financial Decision Rating Scale

**Peter A. Lichtenberg, Ph.D., ABPP\*\***,

Institute of Gerontology, Wayne State University, 87 East Ferry Street, Detroit, MI 48202,  
313-664-2633

**Evan Gross, MA, and**

Department of Psychology and Institute of Gerontology, Wayne State University, 87 East Ferry  
Street, Detroit, MI 48202, 313-664-2600, Evan.gross@wayne.edu

**Rebecca Campbell, BA**

Department of Psychology and Institute of Gerontology, Wayne State University, 87 East Ferry  
Street, Detroit, MI 48202, 313-664-2600, Fz9986@wayne.edu

### Abstract

**Objectives:** This paper examines the convergent validity and clinical utility of the 34-item short form of the Lichtenberg Financial Decision Rating Scale (LFDRS-SF). A briefer scale can lead to enhanced and efficient use of a person-centered approach to the assessment of financial decision-making.

**Methods:** Using data on 200 community-dwelling older adults from Lichtenberg et al. (2017a), convergent validity was examined with cognitive and financial management measures using a correlational and regression approach. Receiver operating curve analyses for predicting decision-making ability classification and suspected financial exploitation classification were used to evaluate clinical utility.

**Results:** The LFDRS-SF total risk score was significantly correlated with both cognitive and financial management measures, and the regression analysis predicted 9% of the LFDRS-SF measure. These results demonstrate not only convergent validity, but also the conceptual and empirical uniqueness of financial decision-making.

**Conclusions:** The LFDRS-SF is a valid tool to assess real-world financial decision-making abilities.

The dearth of real-world financial decision-making assessment tools has been well documented (Lai & Karlawish, 2008; Marson, 2016). Lichtenberg et al. (2015) described the creation of a new person-centered measure, the Lichtenberg Financial Decision Rating Scale (LFDRS), to assess the financial decision-making abilities of an older adult. The LFDRS analyzes decision-making for specific financial decisions and transactions. Lichtenberg et al. (2017a) followed up on their first study with a construct validation study, in which both the conceptual model and LFDRS scale items were examined psychometrically on a community-based sample of 200 participants. Confirmatory factor analysis provided

\*\*Corresponding author p.lichtenberg@wayne.edu.

empirical support for the conceptual model and identified three contextual subscales and one intellectual subscale. This paper examines how well using the results of the previous confirmatory factor analysis translates into the creation of a short form of the LFDRS (LFDRS-SF). Thirty-one items identified from the factor analysis were selected to comprise the basis of a short form. The scale has three contextual factors: financial situational awareness, psychological vulnerability, and susceptibility to influence and exploitation. The core intellectual factor consists of items that measure choice, understanding, appreciation, and rationale.

Lichtenberg et al. (2016a), Lichtenberg, Ficker, and Rahman-Filipiak (2016b), and Lichtenberg, Teresi, Ocepek-Welikson, and Eimick (2017b) have shown that financial decision-making deficits are often a key factor in cases of both substantiated and suspected financial exploitation. For instance, the lack of financial decisional capacity was found to intersect with substantiated financial exploitation in a sample of Adult Protective Services cases (APS). In a separate community-based sample, cases of suspected financial exploitation also intersected with financial decisional capacity. The purpose of this study is to examine the convergent validity and clinical utility of the LFDRS-SF in the original validation sample in relation to ratings for decision-making ability and suspected financial exploitation. The following hypotheses will be examined:

Hypothesis 1: Convergent validity will be demonstrated for the LFDRS-SF total risk score with measures of cognition and measures of financial knowledge and execution.

Hypothesis 2: Area under the curve analyses will demonstrate good to excellent validity for the LFDRS-SF with regard to concerns about decision-making abilities.

Hypothesis 3: Area under the curve analyses will demonstrate good validity for the LFDRS-SF with regard to suspected financial exploitation.

## METHODS

### Participant Recruitment Procedures:

Two hundred community participants from an urban Midwest community were recruited for the study. Inclusion criteria were age 60 or older, living independently in the community, reporting the ability to perform independent activities of daily life and activities of daily life, native English speaker, and capable of basic word reading. Basic word reading was determined by the ability to read the consent form. After receiving approval from the Institutional Review Board, three methods were used to recruit 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, and participants were recruited at these events. And third, a snowballing technique was used. Participants were paid \$40.00.

Older adults were approached either by phone or in person and asked to participate in an interview and testing session that would last approximately 2 hours. Financial decisions were considered significant if they fell into one of the following categories: (a) investment planning (retirement, insurance, portfolio balancing); (b) estate planning (changes in a will or beneficiaries, allowing someone access to a bank/investment account); (c) major purchase (home, car, renovations, etc.); or (d) giving a gift.

### Participants:

Sociodemographic data on participants can be found in Table 1. Two hundred independent, community-living adults age 60 and older comprised the sample. Fifty-two percent were African American, and 74% female. The significant financial decisions being made were predominantly major purchases/sales, as well as investments and estate planning.

### Measures

**Decisional Ability Impairment:** Similar to the procedure for diagnosing Alzheimer's disease, we used a consensus conference to determine whether decisional ability deficits were present in individual participants. While all three coauthors had access to the LFDRS-SF answers, no risk scores had been calculated before the consensus conference yielded a decision on each case. The decision-making process was based on instructions for the LFDRS-SF, which state: "For the intellectual factor items, were there any discrepancies between the rater's choice and the older adult's response? Any discrepancies should raise concerns about the older adult's decisional abilities. Did there appear to be a lot of psychological vulnerability and susceptibility or a high level of financial strain? These factors influence a final rating as well." A final dichotomous rating of some/major concerns or no concerns was assigned (1=decisional-ability impairment, 2=intact decisional abilities). The consensus conference supplemented the test administration by ensuring that cases were identified in which discrepancies were more likely due to not understanding the question or so minor that decision-making was deemed to be intact.

**Suspected Financial Exploitation:** Financial exploitation 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. A number of questions on the LFDRS-SF can trigger responses that suggest financial exploitation. These include items such as whether the person had recently made a financial decision they regretted or worried about and whether they were currently helping someone regularly with finances—and, if so, how they felt about the situation. Other items include whether they had noticed money missing from a bank account 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 suspected financial exploitation 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 family members access to a bank account to withdraw \$400, then learning that the person had withdrawn \$5,000 and kept the money.

The coauthors met and reviewed each item and the description of any money loss that might be related to suspected financial exploitation. An example of what was not considered financial exploitation was purchasing a home during an auction and having to pay recording or other fees they had not realized would be added to the base price. We then rated each person as having or not having experienced financial exploitation within the previous 18 months (1= suspected financial exploitation, 2=no financial exploitation). Similar to most studies of exploitation, we were not able to investigate or substantiate instances of exploitation by examining bank records or cancelled checks (e.g. Wood, Liu, Hanoch, & Esteves-Core, 2016). The consensus conference helped ensure that only instances of exploitation serious enough to merit reporting to APS would cause the case to be identified as exploitative. No cases of suspected exploitation were current or ongoing, and thus no reports to APS were made.

**Lichtenberg Financial Decision Rating Scale—Short Form (to be found at <https://olderadultnestegg.com> Financial Vulnerability Assessment):**

Contextual factors include a Financial Situational Awareness subscale (9 items), a Psychological Vulnerability subscale (8 items), and a Susceptibility (to either Undue Influence or Financial Exploitation) subscale (7 items).

Items on the Financial Situational Awareness subscale are related to financial strain, financial satisfaction, financial self-efficacy, and stability of financial management approaches. Items in the Psychological Vulnerability subscale assess anxiety, depression, social status, loneliness, and fearfulness. Unlike other scales—such as items from traditional depression or anxiety inventories—the items for this subscale were specifically related to finances. Items in the Susceptibility subscale explore conflicts with others about spending and other financial decisions and perceived financial victimization by others.

The Intellectual Factor subscale contains 10 items that measure the ability to communicate choice, understanding, appreciation, and rationale for a specific current or recent major financial decision.

**Neuropsychological Measures**

The neuropsychological measures described below were chosen because they cover broad areas of cognitive functioning and have been found to be significantly correlated with the LFDRS full scale.

**Wide Range Achievement Test 4—Reading**

The WRAT4 reading subtest has been found to be an excellent measure of quality (versus only quantity) of a person's educational experience (Schneider & Lichtenberg, 2011). The test consists of 15 letters and 55 words that are read aloud (Wilkinson & Robinson, 2006).

**Trailmaking Test**

The Trailmaking Test has two parts (Reitan & Wolfson, 1985). In part A, older adults are timed as they connect circles in order by number; this is a test of basic visuomotor attention. A mental flexibility component is added in part B, in which the older adult connects the

circles in order, but this time while alternating between numbers and letters. Trailmaking scores for part B were used in this study, because this is a well-known measure of broad executive functioning. Scaled scores were calculated and used in analyses.

### **The Stroop Color-Word Test:**

This is a test of disinhibition and mental flexibility (Golden, 1978). Color words (red, blue, green) printed in black ink on a page are read as quickly as possible for the first part; the color of marks on the page are named in the second part; and color words printed in incongruously colored ink (e.g., “red” printed in green ink) are presented in the third part. On the first part, the older adult reads as many words aloud as they can in 45 seconds. In the second part, they state the color of each marking aloud as fast as they can for 45 seconds. On the third part, the individual must ignore the printed word and name the color of the ink. The examiner provides corrections, and the total score is the number of items correctly stated in 45 seconds. The Color/Word task was chosen due to its sensitivity to disinhibition. Scaled scores were calculated and used in analyses.

### **Mini Mental State Exam (MMSE)**

The MMSE (Folstein, Folstein, & McHugh, 1975), which assesses general cognitive ability, contains items that evaluate orientation, memory, concentration, and language and visual skills. The measure is well established and used frequently with older adults, as it can be administered in many settings and takes only 5–10 minutes. Higher scores (greater than or equal to 24) on the 30 items indicate intact cognitive functioning, whereas lower scores (less than or equal to 23) indicate the presence of possible dementia (Spering et al., 2012).

### **The Independent Living Scale (ILS) and the Managing Money Subscale**

The ILS (Loeb, 1996) is a 68-item measure of (a) ability to perform instrumental activities of daily living, (b) memory and orientation, (c) ability to manage matters related to home and transportation, (d) health and safety knowledge, (e), social adjustment, and (f) financial management. The Managing Money subscale assesses knowledge of both broad concepts, such as insurance and Social Security, and specific skills, such as counting change, calculating a bill, and completing a check or money order. Only the Managing Money subscale was administered in this study.

### **Data Analysis**

The convergent validity of the subscales and LFDRS-SF were examined by Pearson correlations in order to examine the relationship between cognitive test scores and the total scale risk score, as well as with each subscale. Similarly, the total LFDRS-SF risk score and subscale scores were examined in relation to the measure of financial management skills. Hierarchical regression analyses were conducted to determine whether cognitive and financial management tests contributed to the prediction of risk scores above and beyond the demographic variables.

Receiver operating characteristic (ROC) curves were created to assess the clinical utility of the risk-scoring system of the LFDRS-SF. Sensitivity, specificity, positive predictive value (ppv), negative predictive value (npv), and overall correct classification were calculated at

each potential cutoff point. This was done to compare classification rates for those with no decisional ability concerns versus those with decisional ability concerns, as well as for those with suspected financial exploitation versus those without suspected financial exploitation. Interpretation of ROC scores was adapted from Meade, Johnson, and Bradley (2008).

## RESULTS

Demographic information and scores for the entire sample and for those with and without decisional concerns can be found in Table 1. *T*-tests were performed to compare the groups (concerns-no concerns). The group judged to have decision-making ability concerns were significantly older than the no concern group, and had significantly fewer years of education—although surprisingly, the groups did not differ on reading scores, which are viewed as an indicator of quality of education. The LFDRS-SF total risk score and all subscale scores (with the exception of Psychological Vulnerability) differed between the groups, with higher risk scores for those with decision-making ability concerns. On the MMSE and Trailmaking and Stroop tests, the group with decision-making ability concerns scored significantly poorer than the group with no concerns. Finally, those with no concerns scored significantly better than the concerns group on a test of financial executorial skills and basic knowledge, as measured by the ILS subscale.

Table 2 contains comparisons of those with suspected financial exploitation and those with no financial exploitation. There were no group differences between the groups on age or education, but the LFDRS-SF total risk score and all subscales were significantly worse (higher risk) for those with suspected financial exploitation. While the groups did not differ on MMSE scores, they diverged on tests of executive functioning (Trailmaking and Stroop scores). Those with suspected financial exploitation also scored significantly worse on the ILS financial subscale.

Support for the scale's convergent validity was found through correlational and regression analyses. As can be seen in Table 3, the LFDRS-SF was significantly related to the ILS financial subscale score, as well as to tests of cognitive functioning. The Intellectual Factor subscale was significantly related to the ILS and cognitive scores as well, but only one of the three contextual variable subscales was significantly related to the ILS (Financial Situational Awareness). Similarly, Psychological Vulnerability was the only contextual variable subscale significantly related to tests of executive functioning (but not to the MMSE).

Overall, demographic, cognitive, and financial management measures predicted just over 9% of the LFDRS-SF variance (see Table 4). The only significant individual predictor was the Trailmaking Test Part B. Regression results indicate that while there is convergent validity between the LFDRS-SF and cognitive and financial management measures, a considerable amount of evidence is not explained by the predictors. Financial decision-making, therefore, is conceptually and empirically distinct from measures of cognition or financial management skills (Han et al., 2015).

Clinical utility results for the LFDRS-SF on decisional abilities can be found in Table 5 and Figure 1. Overall, the ROC curve was in the good range (see Figure 1; area under the



curve=.887). As can be seen in Table 5, a number of cutoff scores can be used, depending on whether one wants to emphasize sensitivity or specificity. A cutoff score of 19 or greater has an overall classification rate of 91%, with a sensitivity of 69% and specificity of 93%. Positive predictive power was 46% and negative predictive power was 97%. A score of 24 or greater had an overall classification rate of 94%, but sensitivity dropped to 44%. However, positive predictive power increased to 70%, while both specificity (98%) and negative predictive power (95%) remained high.

Clinical utility results for the LFDRS-SF on suspected financial exploitation can be found in Table 6 and Figure 2. Overall, the ROC curve was in the good range (see Figure 2; area under the curve=.814). Again, as can be seen in Table 5, a number of cutoff scores can be used, depending on whether one wants to emphasize sensitivity or specificity. The best cutoff score appears to be 24 or greater, which yielded an overall classification rate of 86%. Sensitivity is quite low (25%), but positive predictive power is quite high (90%), as is specificity (99%) and negative predictive power (86%).

## DISCUSSION

This research expands clinical application of the Lichtenberg Financial Decision Rating Scale by providing a short form. The short form was derived almost exclusively from items that formed the basis of the subscales derived from a confirmatory factor analysis on the full 68-item LFDRS (Lichtenberg et al., 2017a). Evidence was found for good convergent validity and clinical utility. The LFDRS-SF is likely to be favored over the full LFDRS, and because of this, in setting up <https://olderadultnestegg.com>, we decided to use the short form as the online comprehensive scale. On the website, clinical gerontologists can access a narrated training module for use of the LFDRS-SF and, by using the online version, receive risk-scoring instructions for the full scale and subscales and suggested next steps.

The following case illustrates the utility of the LFDRS-SF in assessing informed decision-making abilities and vulnerability to financial exploitation. Mrs. J is a college-educated woman in her late 60s with serious health problems and limited mobility. She reported that she is “too nice” because she loans money to friends to use for gambling, even though they have failed to repay her. She appeared unconcerned that two of these people asked for her bank account information, supposedly in order to repay her without requiring her to leave her house. She stated that her family is worried about her financial situation, and they sometimes help pay her bills. She was deciding whether to move in with an adult child and turn over management of her finances. Mrs. J’s total score on the LFRDS-SF was 29, which is above the suggested cutoff score for both impaired financial decision-making and suspected financial exploitation. Interestingly, in terms of her specific current financial decision, Mrs. J appeared to have intact decision-making abilities. Yet the act of relinquishing financial self-management, in and of itself, suggests a recognition that her financial decision-making abilities may be lacking. Furthermore, given the nature of the decision in question, it seems likely that her family members assisted with the decision-making process. In this case, Mrs. J’s elevated LFDRS-SF total score in the absence of impaired current decisional ability suggests that she may have difficulty making some

financial decisions, perhaps especially if the decision is complex or she lacks appropriate support from trusted helpers.

Regarding the risk of financial exploitation, Mrs. J's interview was determined to be indicative of suspected financial exploitation, and her LFDRS-SF total score is consistent with the researchers' consensus. Several aspects of Mrs. J's report raised concerns. She expressed awareness of giving away money too freely, even when she's having difficulty supporting herself financially. However, she seemed not to recognize the relative unlikelihood of repayment, based on the fact that the money was intended for gambling and that she had not previously been paid back. Furthermore, she did not appear to recognize the inherent risk of providing banking information or the possible ulterior motives of people asking for her account number while claiming to help her. Mrs. J's high risk of financial exploitation, as reflected by her LFDRS-SF total score, is multifactorial, including her current financial situation and financial awareness, psychological vulnerability, and susceptibility to social influence. Additionally, she most likely has difficulty making financial decisions, although her LFDRS-SF responses did not suggest impaired abilities for her current decision. Poor health and social isolation due to limited mobility may also render her more vulnerable to exploitation.

### Clinical Implications

1. A more efficient financial decision-making rating scale than the original 68-item version.
2. Useful for assessment of both informed decision-making and susceptibility to financial exploitation.
3. The online version of the scale can assist clinicians in determining risk and next steps for their work with older adults.
4. The LFDRS\_SF can be found and used on [www.olderadultnestegg.com](http://www.olderadultnestegg.com)

The study has several limitations. First, we used a community-based sample with a low base rate of financial decision-making deficits (8%), and thus the clinical utility data presented here are based on a small number of cases. In samples from Adult Protective Services, however, measurement of financial decision-making ability using the Lichtenberg Financial Decision-making Screening Scale has been equally effective in higher-risk groups (Lichtenberg et al., 2017b). Second, cases of financial exploitation were identified by consensus conference and could not be substantiated. This is similar, however, to most research with community-based samples. The sample was nonrandom, and thus may be biased in unknown ways that could influence the results. Other limitations include that only English-speaking older adults were tested, and the sample was mostly female. Despite these limitations, however, the study represents an important step in making efficient and valid tools for financial decision-making assessment available.

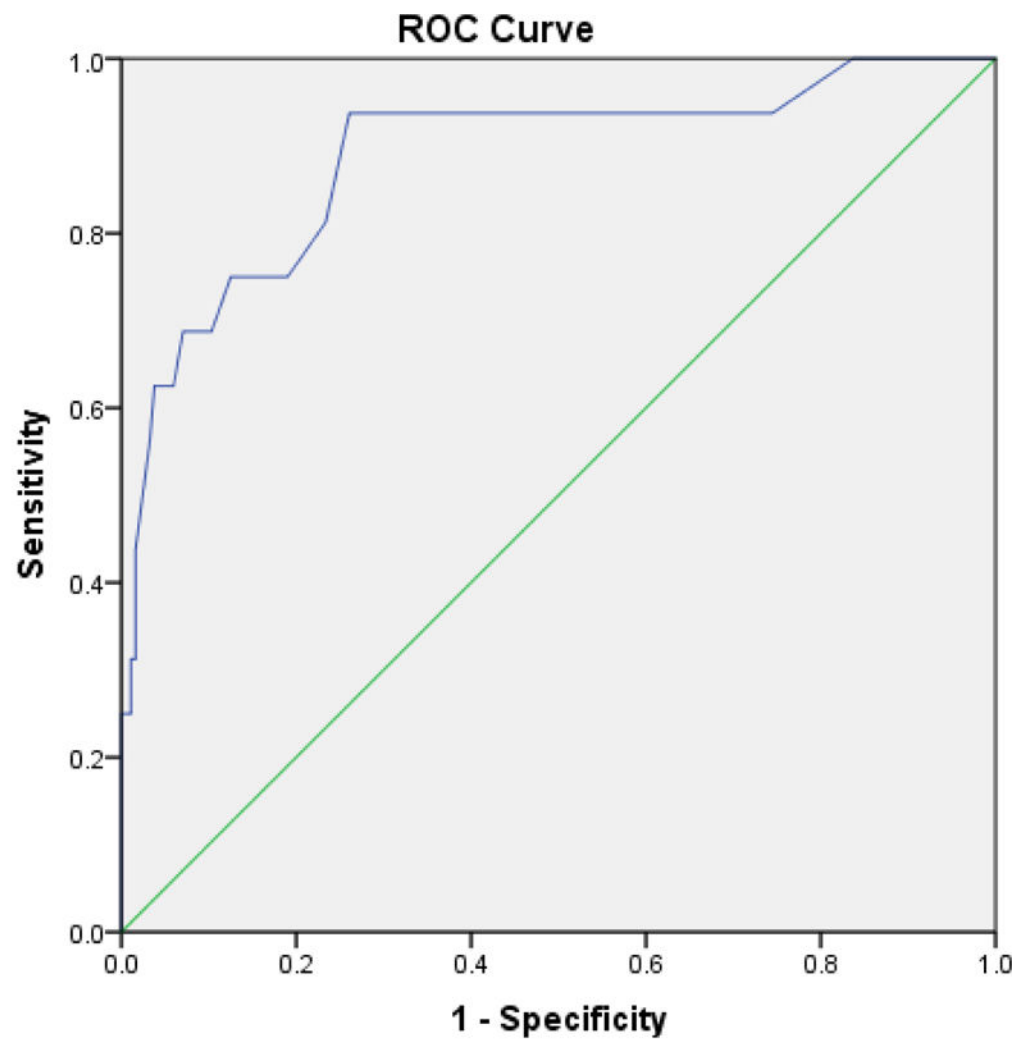


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**Clinical Implications:**

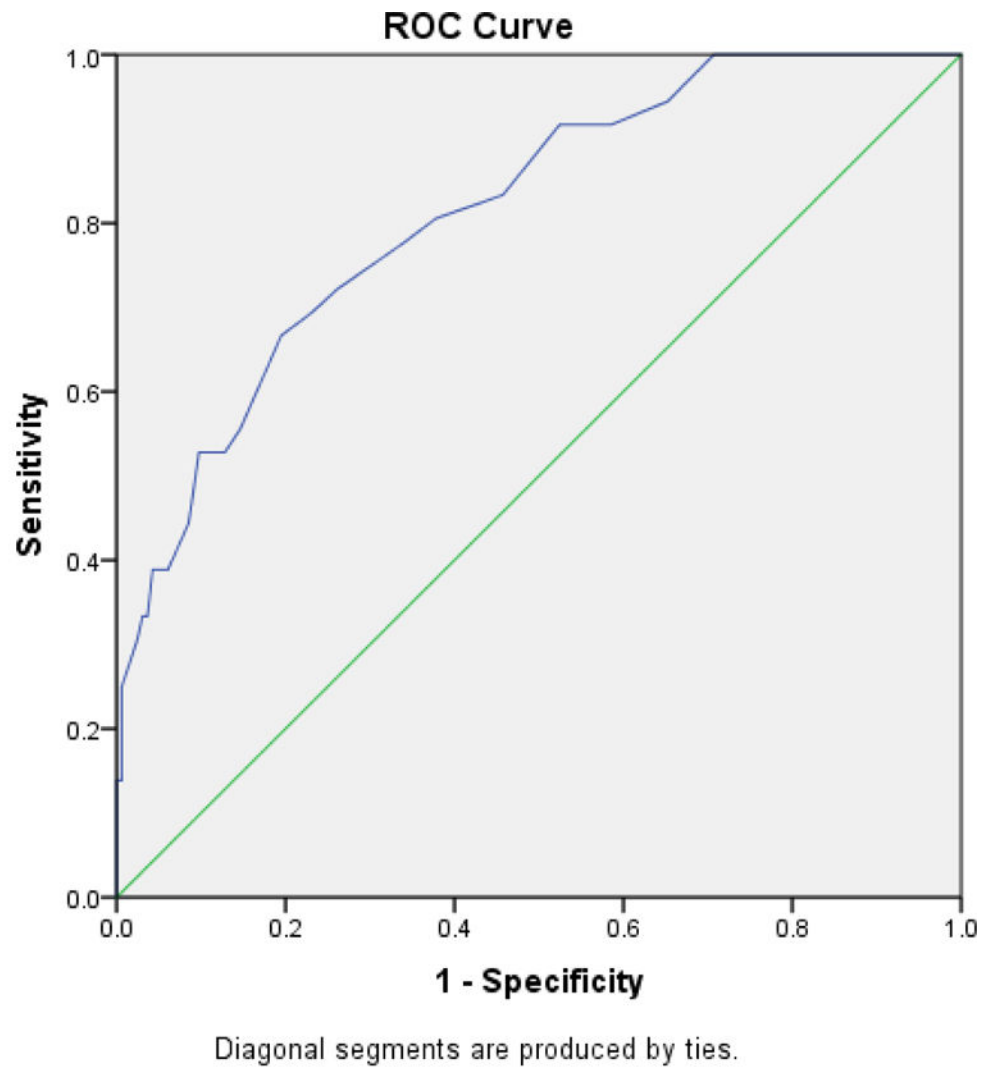
The LFDRS-SF offers an efficient way to assess financial decision-making. Training on the tool and automatic scoring and recommendations for next steps can be found at <https://olderadultnestegg.com>.



Diagonal segments are produced by ties.

AUC = .887

**Figure 1.**  
LFDRS-SF total scale predicting Some/Major Concerns about Financial Decisional Abilities



AUC = .814

**Figure 2.**  
LFDRS-SF total scale predicting suspected financial exploitation

**Table 1.**

Descriptive statistics of demographics and LFDRS-SF Total Scale and Subscale Scores by financial decisional ability

Variable	Total (N = 200)	No Concerns (N = 184)	Some/Major Concerns (N = 16)
	M (SD) or %	M (SD) or %	M (SD) or %
Age	71.5 (7.4)	71.1 (7.2)	76.1 (8.2) *
Education (years)	15.3 (2.6)	15.5 (2.6)	13.8 (2.1) *
Race			
Caucasian	48.0%	49.5%	31.3%
African American	52.0%	50.5%	68.7%
Gender (Female)	74.0%	73.3%	81.3%
LFDRS Total Score	9.6 (7.4)	8.6 (6.1)	22.3 (9.4) **
FSA	3.4 (3.1)	3.1 (2.9)	6.8 (3.7) **
PV	2.4 (2.4)	2.3 (2.2)	4.1 (3.8)
Susceptibility	1.6 (2.4)	1.3 (2.0)	5.1 (4.1) **
Intellectual	2.3 (2.0)	1.9 (1.4)	6.3 (3.0) **
MMSE	28.5(2.1)	28.7(1.8)	25.9(3.3) *
WRAT Word Reading	100.1(13.0)	100.8(12.6)	92.4(15.4)
ILS Managing Money	51.8(8.8)	52.5(8.4)	44.0(9.9) *
Trails B	11.7(2.7)	12.0(2.6)	8.6(2.0) **
Stroop CW	11.5(2.9)	11.7(2.8)	9.1(2.9) *

Notes: WRAT Word Reading is presented as a standard score. ILS Managing Money is presented as a T-score. Trails B and Stroop CW are presented as scaled scores. The remaining test data are presented as raw scores.

Chi-square tests for Race and Gender are nonsignificant. Significant *t*-tests for all variables except for LFDRS Psychological Vulnerability and WRAT4 Word Reading.

\*  
*p* < .05

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*p* < .001

**Table 2.**

Descriptive statistics of demographics and LFDRS-SF Total Scale and Subscale Scores by history of financial exploitation

Variable	Total (N = 200)	No Financial Exploitation (N = 164)	Suspected Financial Exploitation (N = 36)
	M (SD) or %	M (SD) or %	M (SD) or %
Age	71.5 (7.4)	71.5 (7.4)	71.3 (7.4)
Education (years)	15.3 (2.6)	15.5 (2.6)	14.9 (2.5)
Race			
Caucasian	48.0%	50.6%	36.1%
African American	52.0%	49.4%	63.9%
Gender (Female)	74.0%	71.3%	86.1%
LFDRS Total Score	9.6 (7.4)	8.0 (5.8)	17.4 (9.1) **
FSA	3.4 (3.1)	2.8 (2.8)	5.9 (3.6) **
PV	2.4 (2.5)	2.1 (2.2)	3.8 (3.1) *
Susceptibility	1.6 (2.4)	1.0 (1.5)	4.2 (3.8) **
Intellectual	2.3 (2.0)	1.96 (1.6)	3.5 (3.0) *
MMSE	28.5(2.1)	28.7( 1.9)	27.8(2.6)
WRAT Word Reading	100.1(13.0)	101.1(12.7)	95.6(13.7) *
ILS Managing Money	51.8(8.8)	52.6(8.4)	48.2(9.6) *
Trails B	11.7(2.7)	12.0(2.6)	10.2(3.0) **
Stroop CW	11.5(2.9)	11.8(2.8)	10.1(3.0) *

Notes: WRAT Word Reading is presented as a standard score. ILS Managing Money is presented as a T-score. Trails B and Stroop CW are presented as scaled scores. The remaining test data are presented as raw scores.

Chi-square tests for Race and Gender are nonsignificant. Significant *t*-tests for all LFDRS variables, WRAT Word Reading, ILS Money Management, Trails B, and Stroop CW.

\*  
p<.05

\*\*  
p<.001

**Table 3.**

Correlations among LFDRS-SF and neuropsychological test variables

	LFDRS Total	FSA	PV	Susceptibility	Intellectual	MMSE	WRAT Word Reading	ILS Managing Money	Trails B
FSA	.855**								
PV	.788**	.675**							
Susceptibility	.728**	.419**	.425**						
Intellectual	.519**	.265**	0.120	.307**					
MMSE	-.145*	-0.110	-0.027	-0.008	-.324**				
WRAT Word Reading	-.162*	-.222**	-.174*	0.048	-0.099	.351**			
ILS Managing	-.180*	-.165*	-0.071	-0.079	-.230**	.494**	.473**		
Trails B	-.242**	-.193**	-.148*	-0.111	-.279**	.383**	.255**	.284**	
Stroop CW	-.175*	-0.132	-.160*	-0.023	-.223**	.362**	.228**	0.122	.535**

Note: WRAT Word Reading is presented as a standard score. ILS Managing Money is presented as a T-score. Trails B and Stroop CW are presented as scaled scores. The remaining test data are presented as raw scores.

\*  $p < .05$

\*\*  $p < .001$



**Table 4.**  
Regression of demographic and neuropsychological variables on LFDRS-SF total score

	Unstandardized B	Std. Error	Standardized Beta	t	p value
(Constant)	29.266	12.294		2.380	0.018
Race	2.163	1.272	0.145	1.701	0.091
Age	−0.037	0.074	−0.037	−0.498	0.619
Gender	−1.670	1.267	−0.098	−1.317	0.189
Education	−0.261	0.217	−0.091	−1.202	0.231
MMSE	−0.224	0.328	−0.058	−0.683	0.496
ILS Managing Money	−0.004	0.077	−0.005	−0.058	0.954
Trails B	−0.634**	0.215	−0.233	−2.948	0.004

Note: Overall regression significant  $F(7,188)=3.88$ ,  $p=.001$ , Adjusted  $R^2=.094$

\*\*  
 $p<.01$

ILS Managing Money is presented as a T-score. Trails B and Stroop CW are presented as scaled scores. The demographic data are presented as raw scores.

**Table 5.**

LFDRS-SF total scale predicting Some/Major Concerns about Financial Decisional Abilities

Cutoff	Sensitivity	Specificity	Positive Predictive Value	Negative Predictive Value	Overall Correct Classification
1 or greater	100.0	1.1	8.1	100.0	9.0
2 or greater	100.0	6.5	8.5	100.0	14.0
3 or greater	100.0	16.3	9.4	100.0	23.0
4 or greater	93.8	25.5	9.9	97.9	31.0
5 or greater	93.8	31.5	10.6	98.3	36.5
6 or greater	93.8	38.0	11.6	98.6	42.5
7 or greater	93.8	43.5	12.6	98.8	47.5
8 or greater	93.8	51.1	14.3	98.9	54.5
9 or greater	93.8	58.7	16.5	99.1	61.5
10 or greater	93.8	62.5	17.9	99.1	65.0
11 or greater	93.8	70.7	21.7	99.2	72.5
12 or greater	93.8	73.9	23.8	99.3	75.5
13 or greater	81.3	76.6	23.2	97.9	77.0
14 or greater	75.0	81.0	25.5	97.4	80.5
15 or greater	75.0	82.6	27.3	97.4	82.0
16 or greater	75.0	84.8	30.0	97.5	84.0
17 or greater	75.0	87.5	34.3	97.6	86.5
18 or greater	68.8	89.7	36.7	97.1	88.0
19 or greater	68.8	92.9	45.8	97.2	91.0
20 or greater	62.5	94.0	47.6	96.6	91.5
21 or greater	62.5	95.7	55.6	96.7	93.0
22 or greater	62.5	96.2	58.8	96.7	93.5
23 or greater	56.3	96.7	60.0	96.2	93.5
24 or greater	43.8	98.4	70.0	95.3	94.0
25 or greater	37.5	98.4	66.7	94.8	93.5

**Table 6.**

LFDRS-SF total scale predicting suspected financial exploitation

Cutoff	Sensitivity	Specificity	Positive Predictive Value	Negative Predictive Value	Overall Correct Classification
1 or greater	100.0	1.2	18.2	100.0	19.0
2 or greater	100.0	7.3	19.1	100.0	24.0
3 or greater	100.0	18.3	21.2	100.0	33.0
4 or greater	100.0	29.3	23.7	100.0	42.0
5 or greater	94.4	34.8	24.1	96.6	45.5
6 or greater	91.7	41.5	25.6	95.8	50.5
7 or greater	91.7	47.6	27.7	96.3	55.5
8 or greater	83.3	54.3	28.6	93.7	59.5
9 or greater	80.6	62.2	31.9	93.6	65.5
10 or greater	77.8	65.9	33.3	93.1	68.0
11 or greater	72.2	73.8	37.7	92.4	73.5
12 or greater	69.4	76.8	39.7	92.0	75.5
13 or greater	66.7	80.5	42.9	91.7	78.0
14 or greater	58.3	84.1	44.7	90.2	79.5
15 or greater	55.6	85.4	45.5	89.7	80.0
16 or greater	52.8	87.2	47.5	89.4	81.0
17 or greater	52.8	90.2	54.3	89.7	83.5
18 or greater	44.4	91.5	53.3	88.2	83.0
19 or greater	38.9	93.9	58.3	87.5	84.0
20 or greater	38.9	95.7	66.7	87.7	85.5
21 or greater	33.3	96.3	66.7	86.8	85.0
22 or greater	33.3	97.0	70.6	86.9	85.5
23 or greater	30.6	97.6	73.3	86.5	85.5
24 or greater	25.0	99.4	90.0	85.8	86.0
25 or greater	22.2	99.4	88.9	85.3	85.5
26 or greater	19.4	99.4	87.5	84.9	85.0
27 or greater	16.7	99.4	85.7	84.5	84.5
28 or greater	13.9	99.4	83.3	84.0	84.0
29 or greater	13.9	100.0	100.0	84.1	84.5