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To cite this article: Emily V. Flores & Peter A. Lichtenberg (2023) Cross-Validation of the Lichtenberg Financial Decision Rating Scale, *Clinical Gerontologist*, 46:4, 633-638, DOI: [10.1080/07317115.2023.2196989](https://doi.org/10.1080/07317115.2023.2196989)

To link to this article: <https://doi.org/10.1080/07317115.2023.2196989>



Published online: 30 Mar 2023.



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Cross-Validation of the Lichtenberg Financial Decision Rating Scale

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ABSTRACT

Objectives: The Lichtenberg Financial Decision Rating Scale (LFDRS) is a person-centered tool for analyzing the integrity of financial decision-making abilities. Initial studies supported its reliability and validity (Lichtenberg et al., 2020; Lichtenberg et al., 2017; Lichtenberg et al., 2015). This study examines the cross-validation of the LFDRS Scale to assess its concurrent validity with a measure of executive functioning and suspected financial exploitation (FE).

Methods: Ninety-five older adult community participants underwent an assessment session. The total LFDRS was significantly related to executive functioning.

Results: Trail Making Test Part B was the only significant predictor of the LFDRS total score in a regression equation. An independent sample t-test showed that victims of FE scored higher on the LFDRS than those who were not victims.

Conclusions: These findings are consistent with the initial validation study of the LFDRS and the initial study on the intersection of decision-making and FE (Lichtenberg et al., 2017, 2020) and adds evidence supporting the LFDRS concurrent validity.

Clinical Implications:

- The LFDRS is a person-centered tool for assessing financial decision-making and can be used in clinical assessments of financial capacity.
- The LFDRS can be a useful tool for assessing decision-making capacity in those who have been FE.

KEYWORDS

Financial decision-making;
financial exploitation;
person-centered assessment

Introduction

Many financial capacity measures assess financial skills, such as bill paying, cash transactions, and balancing a checkbook (Marson, 2001). Although these skills are critical to financial management, they do not directly address questions about specific financial decision-making abilities – yet the legal standards for financial incapacity regarding contractual or testamentary capacity are strongly associated with informed financial decision-making. In other words, financial capacity is often focused on one's ability to make informed decisions about one's finances rather than their ability to physically complete financial tasks such as performing cash transactions. Financial capacity and financial exploitation often coincide, because older adults are vulnerable to the potential loss of financial skills, financial judgment, and the ability to recognize and therefore prevent financial exploitation (Stiegel, 2012). This cross-validation study investigates the concurrent validity of the Lichtenberg

Financial Decision Rating Scale (LFDRS) in a new cross-validation sample.

Okonkwo et al. (2009) found that in terms of self-assessment, older adults in earlier stages of cognitive decline were more likely to overestimate their cognitive skills than were normal controls. However, financial judgment was an area in which those with Mild Cognitive Impairment (MCI) were as accurate in assessing their cognitive abilities as were normal controls. Well-validated financial-domain assessment instruments are available; for instance, the Financial Capacity Instrument (Marson, 2001) and Financial Capacity Assessment Instrument (Kershaw & Webber, 2008). However, both use neutral or hypothetical stimuli rather than stimuli that examine the specific individual's transactions or financial judgment. Therefore, reliable and valid assessments that adequately assess an individual's specific financial decision-making abilities to determine their financial decision-making accurate abilities are essential.

The LFDRS is a person-centered measure that examines the financial decision-making abilities of older adults. It is unique, in that it focuses on an actual financial decision. A concept-mapping method was used to create the scale and yielded a novel conceptual model as well as multiple-choice items for the scale (see Lichtenberg et al., 2015). The conceptual model was validated through a factor analysis study that included both contextual and intellectual factors (Lichtenberg et al., 2017). The contextual factors are financial awareness, psychological vulnerability, and susceptibility, and the intellectual factors are the decision-making factors described by Appelbaum and Grisso (1988): choice, understanding, appreciation, and rationale. The scale's reliability, concurrent validity, and clinical utility have also been established (Lichtenberg et al., 2015, 2017, 2020).

In one study, adults aged 60 years or older were eligible to participate in a videotaped interview using the LFDRS if they had completed a major financial transaction or decision within the previous 2 months (Lichtenberg et al., 2015). Two groups of experts in financial capacity assessment cases with older adults rated the videotaped interviews, and interrater reliability was promising: 47 out of 50 ratings (94%) were identical.

The first concurrent validity study of the LFDRS recruited 200 independent, community-living adults aged 60 or older and examined how the LFDRS was related to cognitive and demographic measures. Gender and race were significantly correlated ($r = .14$, $p < .05$) with the total risk score for the rating scale, as was the cognitive measure (Trails B: $r = .30$; $p < .05$). Concurrent validity analyses showed that cognition was a significant predictor of LFDRS risk scores above and beyond demographic measures.

In a study of the scale's clinical utility, those with decision-making deficits, as rated by a consensus conference, was compared with those with intact decisional abilities. Significant differences were observed between cognitive groups in terms of scores for overall risk and risk for each of the four subscales (Lichtenberg et al., 2020). Those with decisional-ability deficits had significantly higher risk scores on all LFDRS indices than those with intact decisional abilities. In addition, the authors examined whether

LFDRS risk scores differed between those with suspected financial exploitation and those with no suspected financial exploitation. Financial exploitation is defined as the illegal or inadequate use of an older adult's money, assets, or any other belongings by either someone the older adult knows or a stranger (Conrad et al., 2010). Those with suspected financial exploitation scored significantly higher on the overall LFDRS risk score and each of the four subscales. Overall, the study provided evidence that the tool can produce clinically useful risk scores.

The purpose of this study is to cross-validate the LFDRS on a new sample of community dwelling older adults. The following hypotheses will be examined:

Hypothesis 1: *Concurrent validity will be demonstrated for the LFDRS total risk score with a measure of executive functioning.*

Hypothesis 2: *The LFDRS risk score will be significantly higher in those who were recent victims of financial exploitation than those who were not victims.*

Methods

Participants

Ninety-five community-based volunteers were recruited for the cross-validation study of the LFDRS. Inclusion criteria required that participants be at least 60 years old, live independently in the community, report the ability to complete activities of daily living (e.g., bathing, dressing, grooming), speak English as their first language, and be capable of basic word reading. Participants were recruited in one of three ways: (1) directly from the Healthier Black Elders Participant Registry (part of the University of Michigan-Wayne State University NIA P30 Resource Center for Minority Aging Research); (2) by members of our research team, who gave presentations and attended community education events for older adults at several locations around the Greater Metro Detroit Area (e.g., senior centers, churches, community centers); and

(3) through snowballing, in which participants learned of the study from others.

Suspected financial exploitation in the context of this study refers to the illegal or improper use of an older adult's funds, property, or assets by either someone known to the victim or a stranger, which can include theft and scams (Conrad et al., 2010). To identify cases of financial exploitation, the researchers used a method outlined by Lichtenberg, Gross & Ficker (2020), which involved asking questions on the LFDRS to trigger responses related to financial exploitation, such as regret over a recent financial decision or loss of money due to a financial decision. Follow-up questions were used to gather more details, and a consensus conference method was employed to identify suspected cases of financial exploitation. The conference involved three professionals (a psychologist, a social worker, and an advanced PhD student) who reviewed each item and the description of any money loss to determine if it was related to suspected financial exploitation. Examples of suspected financial exploitation included cases where money was paid in advance for work that was never performed or where a family member withdrew more money than authorized from a shared bank account. The researchers did not consider instances like paying recording fees during a home auction as financial exploitation. The consensus conference ensured that only serious cases of exploitation, which would qualify for reporting to APS, were used in assigning exploitation to a case. The study did not examine bank records or canceled checks to investigate or substantiate instances of exploitation. The researchers rated each person as having or not having experienced financial exploitation within

the previous 18 months, with a score of 1 indicating suspected financial exploitation and a score of 2 indicating no financial exploitation.

Sociodemographic data on participants can be found in Table 1. The initial group of 95 older adults, who identified as either African American ($n = 81$) or White ($n = 13$), underwent an assessment session. One participant had missing identifying race data and was excluded from the analysis. Ages ranged from 60 to 85 ($M = 69.57$, $SD = 5.79$), years of education ranged from 6 to 20+ years ($M = 14.79$, $SD = 2.47$), and there were 77 females (81.9%) and 17 males (18.1%).

Measures

Lichtenberg Financial Decision Rating Scale (LFDRS)

The LFDRS is a 68-item measure that contains three contextual factor subscales – financial situational awareness, psychological vulnerability, and susceptibility to influence and exploitation – and an intellectual factor that measures choice, understanding, and the rationale for decisions (Lichtenberg et al., 2017). The LFDRS is designed to be administered as a structured interview, with multiple-choice response options. Risk scores for the contextual variables and each subscale are then added to the risk score for the intellectual factor. Higher scores are associated with higher levels of risk that the individual is not making an informed decision.

Trail Making Test (Trails B)

The Trail Making Test is a two-part measure that assesses executive functioning (Broshek & Barth, 2000). In Part A, individuals are timed as they connect circles in order by number; this is a test of

Table 1. Demographic and cognitive characteristics ($N = 94$).

Demographics	Means/SD or %
Female ($n = 77$)	81.9%
Male ($n = 17$)	18.1%
Age	69.57 (5.79)
Years of Education	14.79 (2.47)
White Non-Hispanic	13.8%
African American	86.2%
LFDRS Total	13.43 (8.07)
Financial Situation Awareness	6.19 (3.62)
Psychological Vulnerability	3.28 (2.88)
Intellectual Factor	2.51 (2.02)
Susceptibility	1.44 (1.63)
Trails B (seconds)	124.49 (70.53)

visuomotor attention and processing speed. In Part B, participants are timed as they connect the circles, going in order, while alternating between numbers and letters; this is a test of visuomotor attention, processing speed, response inhibition, and mental flexibility. Therefore, it is used as a measure to assess executive functioning. Trail Making Part B raw scores were used in the analysis, and lower scores indicate better cognitive performance.

Statistical procedures

The concurrent validity of the LFDRS and its subscales were assessed using Pearson correlations, which enabled examination of the relationships between demographic variables, cognitive test scores, and LFDRS risk scores. Hierarchical regression analysis was conducted to determine whether cognitive measures contributed to the prediction of risk scores when demographic variables were controlled for. An independent samples *t*-test was conducted to examine whether those with suspected financial exploitation differed on the LFDRS from those without financial exploitation.

Results

Descriptive information for the entire sample can be found in Table 1. The LFDRS Total ($M = 13.44$,

$SD = 8.07$) and Trails B ($M = 124.50$, $SD = 70.53$) can also be found in Table 1. The means and standard deviations found in this table are not significantly different than those found in the previously published community sample study of cognitively intact individuals and the LFDRS (Lichtenberg et al., 2018).

Table 2 contains correlations of cognitive, demographic, and LFDRS subscales. Trails B scores ($r = .21$, $p < .05$) were significantly correlated with LFDRS total scores, indicating higher risk scores for individuals with worse executive functioning. Of the subscales, only the Financial Situational Awareness subscale was significantly related to Trail Making Part B scores ($r = .22$, $p < .05$).

Table 3 summarizes hierarchical analyses that examined whether cognition contributed to predicting significant LFDRS Full Scale risk score variance after controlling for demographic variables. In Step 1, the model that included age, race, and gender was not significant, $F(3,90) = 1.65$, $p = .183$. In Step 2, the addition of Trails B added significant unique variance to the model, $F\Delta(1,89) = 4.27$, $p = .042$. The overall model predicted 9.6% of unique variance for the LFDRS. In general, Hypothesis 1 was supported and concurrent validity on this cross-validation study was demonstrated.

Table 2. Correlation between LFDRS total, LFDRS Subscales, and demographics.

	Situational Awareness	Psychological Vulnerability	Intellectual	Susceptibility	LFDRS Total
Age	-.06	-.17	-.13	-.13	-.15
Race	.16	.15	.09	.13	.17
Gender	.01	-.15	-.16	.01	-.09
Trails B	.22*	.19	.17	.01	.21*

Note. LFDRS = Lichtenberg Financial Decision Rating Scale.

* $p < .05$

Table 3. Multiple regression predicting LFDRS total risk score.

	β	<i>t</i>	ΔR^2	ΔF	Model		
					R^2	<i>F</i>	<i>p</i>
Model Step 1					.052	1.65	.183
Age	-.13	-1.26					
Race	.16	1.55					
Gender	-.07	-.68					
Step 2			.043	4.27*	.096	2.35	.060
Age	-.18	-1.71					
Race	.09	.88					
Gender	-.08	-.83					
Trails B	.22**	2.07**					

* $p = .05$, ** $p \leq .05$.

Fourteen participants were found to have suspected financial exploitation. Higher risk scores were obtained for individuals who had been financially exploited ($M = 19.9$, $SD = 11.47$) than for the non-exploited group ($M = 12.2$, $SD = 6.82$). An independent samples t -test showed that the difference between groups was significant ($t = -3.45$, $df = 93$, $p < .001$, $d = -.999$). This supports the idea that the LFDRS risk score will be significantly higher for those who had been recent victims of financial exploitation than for those who had not. In the previous convergent validity study using community sample of 200 older adults, we published a table about potential cut score. Those scores reflected that specificity reached 90% at a cut score of 24 but sensitivity for that score was only 53%. A cut score of 11 produced a 92% sensitivity rate but only a 35% specificity rate. Even in that sample only 36 participants had suspected financial exploitation. In the current sample only 14 participants had suspected financial exploitation. In this sample a cut score of 12 produced 60% sensitivity and 64% specificity. A cut score of 20 produced 90% specificity, while a cut score of 8 produced 86% sensitivity.

Discussion

The results of this study are consistent with the previous findings of Lichtenberg et al. (2017, 2020): The LFDRS is significantly related to both executive functioning and vulnerability to financial exploitation. While the relationship between LFDRS total scores with Trails B is significant, it revealed a modest correlation that is likely due to decision making abilities measuring more than cognitive processing. Specifically, the LFDRS includes aspects of financial awareness, susceptibility, and vulnerability in addition to the intellectual factors of informed decision making. This pattern of findings is consistent with previous studies of the LFDRS (Lichtenberg et al., 2020) and adds to evidence that supports the concurrent validity of the LFDRS. The study also demonstrates that the LFDRS can be used to identify those at highest risk of financial decision-making incapacity and financial exploitation: Higher LFDRS scores were associated with victims of financial exploitation

compared with those who had not been financially exploited. This finding was consistent with previous studies of the LFDRS (Lichtenberg et al., 2020).

Although other financial domain assessments are available, the LFDRS is the first to demonstrate that financial decision-making incapacity for actual decisions made by an older adult is related to suspected actual financial exploitation. Thus, the LFDRS offers clinicians and researchers a novel way to assess capacity for financial decision-making. Reliable and valid assessments that adequately assess the specific financial decision-making abilities of each unique individual are essential; both the underprotection and overprotection of older adults can damage their well-being. Underprotection can lead to financial exploitation and affect other domains of the older adult's life, such as paying for essentials and utilities (Lichtenberg et al., 2015). Overprotection can also be detrimental, because it can unnecessarily limit an older adult's autonomy – which, in turn, can lead to increased anxiety and depression and shorten longevity (Lichtenberg et al., 2015). The strong findings of specificity in this paper and the original convergent validity paper provide clinicians with information that lower risk scores mostly occur in the absence of financial exploitation. It is more useful as a rule out than a rule in tool.

A limitation of this study is the sample size of 94 participants. Although it was large enough for the purposes of this study, it would be valuable to study the LFDRS in a larger sample across more older adults. Also, the cross-validation sample was approximately half as large as the initial validation study. Other limitations are that only older adults whose first language was English were tested, and most were women. Despite these limitations, the study makes a valuable contribution to the assessment of financial decision-making capacity and financial exploitation.

Clinical Implications

- Person-centered assessment of financial decision-making abilities adds an important dimension to available assessment instruments.

- Training for and use of the LFDRS can be accessed at <https://olderadultnestegg.com>, where it is listed as the Financial Vulnerability Assessment (FVA).
- This study provides further evidence for the concurrent validity and clinical usefulness of the LFDRS.

Disclosure statement

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

Funding

This work was supported by the National Institutes of Health P30AG015281, Michigan Center for Urban African American Aging Research; National Institutes of Health Michigan Alzheimer's Center Coregrant #P30AG072931; Department of Justice/Office of Victims of Crime 2020-V3-GX-0060; and the National Institutes of Health R21AG067405.

Data availability statement

The data that support the findings of this study are available from the corresponding author, EF, upon reasonable request.

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