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Clinical Interview Assessment of Financial Capacity in Older Adults with Mild Cognitive Impairment and Alzheimer's Disease

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Abstract

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Dr. Marson had full access to all of the data in the study and takes responsibility for the integrity of the data and accuracy of the data analyses.

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Acquisition of data: Marson, Goode, Kinney, Nicholas, Steele, Anderson.

Analysis and interpretation of data: Marson, Martin, Griffith, Snyder, Raman, Bartolucci.

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Objectives—To investigate financial capacity in patients with mild cognitive impairment (MCI) and Alzheimer’s disease (AD) using a clinician interview approach.

Design—Cross-sectional.

Setting—Tertiary care medical center.

Participants—Healthy older adults (N=75), patients with amnesic MCI (N=58), mild AD (N=97), and moderate AD (N=31).

Measurements—The investigators and five study physicians developed a conceptually based, semi-structured clinical interview for evaluating seven core financial domains and overall financial capacity (Semi-Structured Clinical Interview for Financial Capacity; SCIFC). For each participant, a physician made capacity judgments (*capable*, *marginally capable*, or *incapable*) for each financial domain and for overall capacity.

Results—Study physicians made a total of over 11,000 capacity judgments across the study sample (N=261). Very good inter-rater agreement was obtained for the SCIFC judgments. Increasing proportions of marginal and incapable judgment ratings were associated with increasing disease severity across the four study groups. For overall financial capacity, 95 percent of physician judgments for older controls were rated as *capable*, as compared to only 82% for patients with MCI, 26% for patients with mild AD, and 4% for patients with moderate AD.

Conclusion—Financial capacity in cognitively impaired older adults can be reliably evaluated by physicians using a relatively brief, semi-structured clinical interview. Financial capacity shows mild impairment in MCI, emerging global impairment in mild AD, and advanced global impairment in moderate AD. MCI patients and their families should proactively engage in financial and legal planning given these patients’ risk of developing AD and accelerated loss of financial abilities.

Keywords

financial capacity; competency; clinical assessment; mild cognitive impairment; Alzheimer’s disease

INTRODUCTION

As our society ages, increasing numbers of older adults will experience impairment of higher order functional abilities as a result of Alzheimer’s disease and related disorders (AD). In areas such as medical decision-making, driving, managing finances, and making testamentary dispositions, families and society as a whole have a strong interest in distinguishing intact from impaired functioning^{1–4}. Clinical assessment of such key functional capacities by physicians and other health care practitioners is an important but often overlooked aspect of geriatric practice.

Among higher order abilities, the capacity to manage financial affairs has particular significance to independent functioning of older adults^{5, 6}. Financial capacity comprises a broad range of conceptual, pragmatic, and judgment abilities, ranging from basic skills like counting coins and currency, to more complex skills such as paying bills, managing a checkbook, and exercising financial judgment⁷. Similar to driving and mobility, it is a core aspect of individual autonomy in our society and represents a cognitively complex set of knowledge and skills vulnerable to cognitive aging and dementia^{5, 8–11}.

Impairment of financial abilities occurs in patients with AD and to a lesser extent in patients with mild cognitive impairment (MCI)⁵. Using a psychometric measure of financial capacity, our group has previously found that patients with amnesic MCI demonstrate mild

impairments in financial abilities such as conceptual knowledge, bill payment, and bank statement management¹². In contrast, patients with mild AD show impairments across a range of both simple and complex financial abilities⁵, and these abilities show further rapid decline over a one year period¹³. Patients with moderate AD, in turn, demonstrate severe and global impairment in all financial skills¹³. This progressive loss of financial skills in older patients with MCI and AD mirrors the problems of financial judgment, exploitation, and elder abuse that plague the elderly population and that are targets of public policy measures¹⁴.

The financial capacity of older adults is also a growing clinical issue for physicians and other health care professionals¹⁵. Families frequently look to health care providers to address issues of declining financial skills and decision-making in their loved ones. These clinical judgments, while not legal adjudications, have important ethical and legal implications, as they often result in restriction or removal of a patient's freedom to manage their financial affairs⁷. These judgments are also challenging to make, as physicians and other clinicians have had little or no education or training in financial capacity assessment². In contrast to areas such as medical-decision-making capacity, there are no published studies of clinician assessment of financial capacity. In addition, there are few if any clinician-administered instruments available with which to assess financial capacity. The availability of such instruments could improve clinical care and promote both autonomy and protection of older adults.

The present study examined assessment of financial capacity in older adults using a clinician-administered interview (*Semi-Structured Clinical Interview for Financial Capacity*) (SCIFC). We describe the development of the SCIFC as an assessment tool and then present data concerning its reliability and validity in a clinical sample representing the dementia spectrum (cognitively healthy older controls, and patients with MCI, mild AD, and moderate AD).

METHODS

Conceptual Model of Financial Capacity

Financial capacity involves a broad range of declarative, procedural, and judgment-based knowledge and skills⁷. We previously have developed a conceptual model that views financial capacity at three levels: specific financial abilities (task level) such as counting coins/currency or prioritizing bills for payment; broader areas of financial activity each having clinical relevance for independent functioning (domain level) such as conducting cash transactions or exercising financial judgment; and overall financial capacity (global level). This conceptual model is discussed in more detail elsewhere^{5, 7, 16}.

Development of a Clinician Assessment Measure

The SCIFC was developed as a clinician-oriented, semi-structured interview distinct from existing standardized psychometric capacity measures^{5, 17, 18} which are quantified and require trained technicians for administration. Primary considerations were to develop a relatively brief interview assessing a range of financial domains and affording the clinician both structure and autonomy. The SCIFC was developed by the investigators (D.C.M., V.W., and S.S.) and five study physicians (B.A., P.G., C.K., A.P.N., and T.S.). Phases of development included: (1) identifying and discussing constituent skills and abilities related to the financial domains of the conceptual model⁵; (2) generating and refining test items for each domain; (3) creation of a 25-minute, semi-structured interview based on test item selection; (4) identification of core items and also optional supplemental test items for each domain; (5) development of administration and scoring procedures; and (6) piloting and

final revision of the interview. Table 1 presents a schematic of the SCIFC instrument and its core items.

The SCIFC contains both verbally administered items (question/answer) and also performance items using financial stimuli and other testing materials. Some illustrative items from the SCIFC and its domains are presented below:

Domain 1: Basic Monetary Skills

- “Please identify these coins and currency”

Domain 2: Financial Conceptual Knowledge

- “What is money?”

Domain 3: Cash Transactions

- “Please give me the exact amount of money needed to buy this box of tissues”

Domain 4: Checkbook Management

- “What is a check?”

Domain 5: Bank Statement Management

- What are some of the ways John Doe spent money during this month?

Domain 6: Financial Judgment

- “How could you be sure the price for the car is fair?”

Domain 7: Bill Payment

- “If you had a question about this bill, what would you do?”

Domain 8: Knowledge of Personal Financial Assets and Estate Arrangements

- “Do you have a will or a living trust?”

The final version of the SCIFC interview comprised seven core domains (Domains 1–7) and one experimental domain (Domain 8). The clinician directly judges performance on the core domains, while Domain 8 (Knowledge of Assets and Estate) also requires the clinician to obtain corroborating information from a reliable informant. Because informant availability and report accuracy were variable across study participants, we treated Domain 8 as experimental. Clinicians follow general scoring criteria for individual core and supplemental items within each domain, but retain autonomy regarding domain and overall capacity judgments. The SCIFC elicits a total of nine capacity judgments (one for each domain and for overall financial capacity). In making a judgment, a clinician assigns one of three possible outcomes (*capable*, *marginally capable*, or *incapable*) based upon their assessment and clinical judgment. This judgment outcome classification has been used successfully in prior financial capacity^{5, 13} and other capacity research^{19, 20}.

Study Participants

Participants consisted of 75 healthy older controls, 58 patients with amnesic MCI, 97 mild AD patients, and 31 moderate AD patients. All participants were recruited through the Alzheimer's Disease Research Center (ADRC) at the University of Alabama at Birmingham (UAB) and were part of an associated NIH research project (Financial Capacity Project; 1R01MH55247).

Healthy community dwelling older adults were clinically evaluated by a neurologist and neuropsychologist to ensure the absence of medical, neurologic, and psychiatric conditions affecting cognition. Controls in this study received a Clinical Dementia Rating (CDR)²¹ staging scores and completed standardized tests of mental status (Mini-Mental State Examination; MMSE²²), and global cognitive status (Dementia Rating Scale; DRS²³). Controls were characterized as cognitively normal in the UAB ADRC diagnostic clinical consensus conference.

Patients with amnesic MCI were recruited through the Memory Disorders Clinic at UAB and were well-characterized based upon the medical, neurologic, psychiatric, and neuropsychological screening described above. Diagnosis of amnesic MCI was made in ADRC diagnostic consensus conference using original Mayo criteria²⁴.

Patients with probable AD were also recruited from the Memory Disorders Clinic and their dementia was well characterized based on the above screening procedures. Diagnosis of probable AD was made in the ADRC diagnostic consensus conference using NINCDS-ADRDA criteria²⁵. Dementia severity (mild- moderate) was assigned in consensus conference and was based both on clinical information and CDR score²¹.

Informed consent was obtained from all participants and their caregivers. This study was approved by the UAB Institutional Review Board.

Study Physicians

As discussed above, five UAB physicians (two geriatric psychiatrists, one geriatrician, and two neurologists) served as study collaborators and assisted with both development of the SCIFC and its application in the study. Each physician had extensive clinical experience with geriatric and dementia assessment, and also with competency assessment in clinical settings. Each physician was board certified in their specialty. Physicians were blinded to participant diagnosis at the time of their interview.

Procedures for SCIFC Administration and Scoring

Using the SCIFC, each study physician evaluated the capacity of each participant using a live interview/videotape review methodology successfully employed in prior studies²⁶. Specifically, each study participant was directly interviewed with the SCIFC by one study physician. The interview was videotaped, and the other four physicians each independently reviewed the videotaped interview. In this way, all study physicians evaluated each study participant, while at the same time avoiding potential confounds involved with multiple physician assessments of the same participant. The interviewing physician was randomly assigned to preclude any systematic interviewing bias.

Statistical Analyses

Demographic and Clinical Variables—Group differences in terms of age, education, DRS-2 total score, CDR sum of boxes, and Mini-Mental State Exam (MMSE²²) score were analyzed employing ANOVA with Tukey's Studentized Range (HSD) test. Analyses of the distribution of CDR staging, gender, and ethnicity group differences were performed with chi-square.

Estimates of Physician Judgment Agreement—Physician judgment agreement was defined at two levels. Excellent judgment agreement was defined as 100% or "exact" agreement for a specific capacity outcome for a participant on an SCIFC variable. As a hypothetical example, all five physicians agree that Participant X is *capable* on Domain 1. Very good judgment agreement was defined as 80%+ agreement for a specific capacity outcome for a participant on an SCIFC variable. As a hypothetical example, four (or five) of the five physicians agree that Participant Y is *marginally capable* on Domain 6. We used the 80%+ judgment agreement level as the basis for evaluating judgment reliability in the study. This approach to estimating agreement was chosen for ease of interpretation and to avoid unstable and artificially lowered statistical estimates of agreement due to restricted range of the capacity judgment data across groups.

Comparison of Capacity Judgment Outcomes Across Groups

Group differences in financial capacity outcomes on the SCIFC variables (with physician judgments within the same patient treated as a cluster) were analyzed using a Generalized Estimating Equations (GEE) approach for ordinal data²⁷. GEE is an extension of the general linear model and is used to analyze clustered data in which the multiple scores from the same patient are likely to be correlated. The GEE method accounts for the correlation among observations from the same participant and provides more efficient and less biased regression parameters than the fixed ordinal logistic regression method. The GEE analyses were carried out using SAS (version 9.2) PROC GENMOD procedure.

For each SCIFC variable, a separate GEE analysis was conducted for participants in each of the four groups. In each model, the SCIFC judgment score, classified as an ordinal variable (*capable/marginally capable/incapable*) served as the dependent variable and group (Control/MCI/Mild AD/Moderate AD) was entered as the predictor variable. Each model adjusted for age and education, and the Holm's adjustment was used to adjust for multiple comparisons. A p value of .01 was employed as the criterion for statistical significance.

Data Exclusion: Prior/Premorbid Financial Experience

Because individual financial experience can vary across individuals⁵, we accounted for lack of financial skills and experience. The Prior/Premorbid Financial Capacity Form (PFCF)⁵, a measure that rates the level of prior (control) or premorbid (MCI or AD patient) experience across each SCIFC domain, was administered separately to participants and their informants (i.e., family member). We used the PFCF results to exclude data of participants lacking experience on specific SCIFC variables. These procedures resulted in the exclusion of one control from Bank Statement Management analysis. In the MCI group the following domain related exclusions occurred: Financial Concepts (n=1), Checkbook Management (n=4), Bank Statement Management (n=3). In the mild AD group, the following exclusions occurred: Financial Concepts (n=2), Checkbook Management (n=6), Bank Statement (n=8), Financial Judgment (n=6), Bill Payment (n=4). In the moderate AD group, the following exclusions were identified: Checkbook Management (n=2), Bank Statement (n=3), Financial Judgment (n=2), and Bill Payment (n=2).

RESULTS

Demographic and Mental Status Variables

Results are set forth in Table 2. Controls and MCI patients were younger than mild AD patients, who in turn were younger than moderate AD patients. The control group had higher education levels than the mild and moderate AD patients. The MCI and mild AD group had similar levels of education, with both having higher education levels than the moderate AD group. More men than women composed the mild AD group. The groups did not significantly differ in the proportion of Caucasians and African-Americans. The MMSE and DRS-2 total scores were worse for the mild and moderate AD patients compared to MCI patients and controls.

Physician Capacity Judgments

A total of 11,118 individual capacity judgments were made by the five physicians across the nine SCIFC domains and overall sample (n=261). Each physician made an average of 2,224 capacity judgments, attesting to their effort and commitment. A total of 627 ratings were not obtained (missing data) out of 11,745 possible ratings [5 physicians × 261 participants × 9 SCIFC variables]. This represented a 94.7% judgment outcome completion rate.

Physician Judgment Agreement

Table 3 presents SCIFC inter-rater judgment findings using the exact (100%) and 80%+ agreement levels. As previously described, the standard for evaluating judgment agreement was set at 80%+ agreement. For participants as a whole, acceptable inter-rater agreement was found for all domains and for overall capacity. For overall capacity, 80%+ agreement was obtained in 78% of cases (203 of 261 participants). At the total group level and across the core domains, 80%+ agreement levels ranged from a high of 95% of cases (Basic Monetary Skills) to a low of 76% (Financial Judgment). As discussed above, the reliability level for experimental Domain 8 (Knowledge of Personal Assets/Estate Arrangements) was lower due in part to missing corroborating informant report.

Across study groups, mean 80%+ judgment agreement for the seven core domains was 97% of control cases, versus 92% of MCI cases, 80% of mild AD cases, and 77% of moderate AD cases. For overall capacity, 80%+ agreement was obtained in 91% of control cases, 90% of MCI cases, 69% of mild AD cases, and 84% of moderate AD cases. The lower agreement level for the mild AD group is interesting and is discussed further below.

For all SCIFC variables combined across all groups, 80%+ agreement was obtained in 85% of cases (1966 of 2308 cases).

Capacity Judgment Outcomes Across Groups

Table 4 presents physician capacity judgment outcomes (*capable*, *marginally capable*, or *incapable*) across SCIFC variables and groups. Between group differences ($p < .01$) were found for all domains and overall capacity, with increasing proportions of impairment (*marginally capable* and *incapable* outcomes) on the SCIFC variables associated with increasing disease severity.

Relative to controls, MCI patients were impaired on Bank Statement Management and on overall financial capacity. In addition, trends emerged on Checkbook Management ($p = .060$) and Financial Judgment ($p = .062$). Relative to controls and MCI patients, mild AD patients were impaired on all domains (except Basic Monetary Skills) and on overall financial capacity. Relative to controls and MCI patients, moderate AD patients were impaired on all SCIFC variables. In addition, relative to mild AD patients, moderate AD patients were impaired on all domains (except Checkbook Management and Bill Payment), and on overall financial capacity.

Examination of judgment outcomes by group revealed that for overall financial capacity, controls were rated as *capable* in 95% of judgments (see Table 4 and Figure 1). At the domain level, controls had as high as 99% *capable* judgments (Financial Concepts), with a low of 92% (Financial Judgment). *Marginally capable* outcomes constituted between 2% and 8% of judgments, while *incapable* outcomes represented less than 1%.

In contrast, judgments for MCI patients reflected the emergence of mild impairments in financial capacity (Table 4 and Figure 1). While MCI patients were rated as *capable* in at least 93% of judgments on four domains (Basic Monetary Skills, Financial Concepts, Cash Transactions, and Bill Payment), they performed less well on domains of Checkbook Management (85% *capable* judgments) and Financial Judgment (83%), and showed a statistically significant deficit on Bank Statement Management (72% *capable* and 24% *marginally capable* judgments). In addition, a deficit emerged for overall financial capacity, with only 82% of judgments for MCI patients rated *capable*, and another 16% rated *marginally capable*. These findings suggest emerging financial deficits in MCI patients.

Mild AD patients demonstrated global deficits in financial capacity (Table 4 and Figure 1). For overall financial capacity, only 26% of judgments were rated *capable* (37% *marginally capable* and 37% *incapable* judgments), reflecting a marked loss of financial skills relative to controls and MCI patients. At the domain level, there were 70% or less *capable* judgments on five domains, with less than 50% *capable* judgments for three complex domains (Checkbook Management, Bank Statement Management, and Financial Judgment).

The moderate AD group demonstrated advanced global impairment on the SCIFC variables. For overall financial capacity, only 4% of judgments were rated *capable*. At the domain level, there was less than 50% *capable* judgment ratings on six of seven core domains, and less than 25% *capable* outcomes on four complex domains (Checkbook Management, Bank Statement Management, Financial Judgment, and Bill Payment).

DISCUSSION

In our aging society, physicians and other clinicians are increasingly asked to address issues of financial capacity in older adults with cognitive impairment and dementia. However, clinicians have lacked the training, experience, and clinical tools for undertaking these important assessments^{28, 29}. The present study used a clinician-based interview to assess financial capacity in older adults representing the dementia spectrum. Using this interview, experienced physicians reliably distinguished the financial skills of cognitively normal older adults, patients with amnesic MCI, and patients with mild and moderate AD.

The present study found that the SCIFC achieved very good levels of judgment consistency in a sample representing the dementia continuum. Across the seven core financial domains, the mean level of acceptable judgment agreement (80%+) occurred in 97% of cases for older controls, 92% of cases for MCI, 80% of cases for mild AD, and 77% of cases for moderate AD. For overall financial capacity, acceptable agreement occurred in 91% of control cases, 90% of MCI cases, 84% of moderate AD cases, and 69% of mild AD cases. The agreement level was somewhat lower for mild AD patients, as this group with its mixture of deficits and preserved skills generally presents the greatest ambiguity for physician raters³⁰. As a reflection of this, physician ratings of overall capacity were effectively dichotomous for the control and MCI groups (almost entirely *capable* vs. *marginally capable* outcomes), dichotomous for moderate AD patients (*marginally capable* vs. *incapable* outcomes), but fully trichotomous for mild AD patients (relatively equal proportions of *capable*, *marginally capable*, and *incapable* outcomes).

The SCIFC demonstrated construct validity by discriminating judgment outcomes across the four groups, with increasing impairment of financial skills (higher proportions of *marginal* and *incapable* outcomes) corresponding to dementia stage and increasing disease severity. MCI patients demonstrated impairments on the Bank Statement Management domain and on overall financial capacity, with trends for the domains of Financial Judgment and Checkbook Management. Thus, as judged by experienced physicians, some patients with MCI showed mild impairments on more complex financial domains and on overall financial capacity. These findings replicate several findings from our group's prior psychometric study of financial capacity in MCI¹². The clinical implication is that upon receiving a diagnosis of amnesic MCI, patients and their families should proactively engage in financial and legal planning, in anticipation of possibly developing AD and corresponding increased loss of financial abilities.

Compared to both older controls and MCI patients, mild AD patients demonstrated significant impairments on all financial domains (with the exception of Basic Monetary Skills) and on overall financial capacity. The findings also replicate findings from our prior

psychometric study of financial capacity¹³ indicating that in mild AD there is emerging global impairment of financial skills. In comparison to mild AD patients, moderate AD patients showed impairment on all SCIFC variables (except possibly Checkbook Management). These findings were indicative of advanced, global impairment of financial skills found at the moderate dementia stage¹³.

The present study has several limitations. First, the study physicians served in dual roles of assisting with instrument development and of rating the capacity of study participants. Their collaborative efforts in instrument development may have inflated judgment reliability levels to some degree. Future studies should examine SCIFC rater agreement using non-study related physicians, and also other clinician disciplines (eg., clinical psychologists, nurses, social workers), in order to strengthen the generalizability of current findings regarding the SCIFC's reliability and validity, and evaluate its broader utility in clinical settings. Many busy physicians may not be able to conduct a 25 minute interview themselves, whereas one of their clinical staff could. In our judgment, the SCIFC has the potential to be used effectively by a range of clinical staff with varying experience levels, if such clinicians are provided with an administration protocol and appropriate training.

Second, although physician capacity outcomes varied as anticipated across disease severity, they were not evaluated in terms of an external validity criterion. This makes it difficult to assess how well the SCIFC performance corresponds to actual "real world" financial capacity outcomes. Currently there is not an accepted gold standard for evaluating clinical judgments of financial capacity, or other capacities for that matter. MCI and AD patient self report, and also family report, of financial capacity have not always proven to be a reliable criterion^{31, 32}. Psychometric testing of financial capacity in a laboratory setting is a possible external criterion^{31, 32}, but is also limited by issues of ecological validity and psychometric norming techniques. The issue of establishing external validity in capacity studies is important, as it affects the ultimate confidence that can be extended to use of capacity measures in clinical practice.

Third, the number of physician raters was limited to five. However, each physician had experience in geriatric assessment, had diverse training backgrounds (e.g., geriatrics, psychiatry, neurology), and had clinical experience making capacity judgments. In prior research^{26, 30} we have found that using five physicians with varied specialty backgrounds supports a stable consensus judgment outcome, and provides a stronger modal central tendency than a smaller number.

Fourth, the interview/videotaping format limited the ability of the four reviewing clinicians to fully apply their own clinical skills and knowledge to the case. However, videotaping was essential methodologically to avoid confounds and logistical challenges associated with multiple clinician interviews of the same participant. Finally, the study sample, although relatively large, was obtained from a single clinical setting with limited generalization of findings.

Our study provides initial support for the value of a semi-structured, interview approach for assessing financial capacity in older adults with cognitive impairment and dementia. This approach provides the structure necessary for attaining reliable and valid assessments, but also permits the clinical flexibility needed for individualized assessments of patients in clinical care settings^{2, 33}. The clinician is able to draw upon their experience and intuition in making these important clinical decisions³⁴. The SCIFC also has the advantage of being derived from a conceptual model of financial capacity³⁵ with clinically relevant financial domains. A domain-based approach allows the clinician to pre-select areas of assessment, and also to determine areas of independent function and preserved autonomy versus areas of

deficit requiring supervision or direct intervention. Finally, as noted above, additional study of the SCIFC instrument and approach is needed to extend and strengthen the current findings of reliability and validity, in particular studies in naturalistic clinical settings involving both physician and non-physician clinicians.

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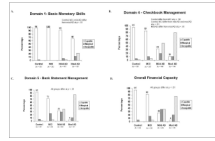


Figure 1.
Judgment Outcomes by Percentage and Group for Selected SCIFC Variables

Table 1

Schematic of the Semi-Structured Clinical Interview for Financial Capacity (SCIFC)

| Item Description | |
|---|--|
| <i>Domain 1 Basic Monetary Skills</i> | |
| <u>Core Questions:</u> | |
| 1. Naming coins/currency | Identify specific coins and currency |
| 2. Coin/currency relationships | Identify relative worth of coins/currency |
| 3. Counting coins/currency | Accurately count coins and currency |
| <i>Domain 2 Financial Conceptual Knowledge</i> | |
| <u>Core Questions</u> | |
| 1. Define term money | Define a variety of financial concepts |
| 2. Define ways people obtain money | |
| 3. Define term loan | |
| <i>Domain 3 Cash Transactions</i> | |
| <u>Core Questions</u> | |
| 1. Identify item cost | Identify cost of single item from price tag |
| 2. one item grocery purchase | One item transaction; verify change |
| 3. Addition of sales tax | Explain additional charge regarding purchase |
| <i>Domain 4 Checkbook Management</i> | |
| <u>Core Questions</u> | |
| 1. Understand checkbook | Define check |
| 2. Use checkbook | Simulated transaction; pay by check |
| 3. Use checkbook register | Simulated register entry and balancing |
| <i>Domain 5 Bank Statement Management</i> | |
| <u>Core Questions</u> | |
| 1. Identify bank statement | Explain purpose of bank statement |
| 2. Identify bank statement balance | Calculate bank statement balance |
| 3. Identify deposit | Identify monthly checkbook deposit |
| 4. Identify balance differences | Identify balance differences |
| <i>Domain 6 Financial Judgment</i> | |
| <u>Core Questions</u> | |
| 1. Detect telephone fraud risk | Detect and explain risk |
| 2. Determine appropriate value | Explain how to determine worth of automobile |
| 3. Advertising automobile | Indicate how to advertise automobile |
| 4. Receiving payment | Explain how to obtain appropriate payment |
| <i>Domain 7 Bill Payment</i> | |
| <u>Core Questions</u> | |
| 1. Understand bills | Explain meaning and purpose of bills |
| 2. Identify bill amount | Identify money owed on bill |
| 3. Questioning amount of bills | Explain how to question amount of bill |
| 4. Unpaid bills | Explain consequence of unpaid bills |
| <i>Domain 8 Knowledge of Personal Assets and Estate Arrangements</i> | |

| | Item Description |
|--|---|
| <u>Core Questions</u> | |
| 1. Income | Identify source of income |
| 2. Assets and will/trust | Identify valuables and will/trust |
| <i>Overall Financial Capacity</i> | Functioning across all skills and domains |

Table 2

Demographic variables of study participants

| | Controls | | MCI | | Mild AD | | Moderate AD | | F | p value |
|-------------------------------------|-------------|-------------|-------------|--------------|-------------|-------------|-------------|-------------|-------|---------|
| | N = 75 | N = 58 | N = 58 | N = 97 | N = 97 | N = 31 | | | | |
| | Mean (SD) | Mean (SD) | Mean (SD) | Mean (SD) | Mean (SD) | Mean (SD) | Mean (SD) | Mean (SD) | | |
| Age (years) <i>b,c,d,e</i> | 66.1 (7.7) | 68.0 (8.3) | 68.0 (8.3) | 72.4 (8.4) | 75.3 (8.4) | 75.3 (8.4) | 75.3 (8.4) | 75.3 (8.4) | 14.3 | < .001 |
| Education (years) <i>b,c,e,f</i> | 14.3 (1.6) | 13.7 (2.0) | 13.7 (2.0) | 13.4 (2.1) | 11.1 (3.7) | 11.1 (3.7) | 11.1 (3.7) | 11.1 (3.7) | 15.5 | < .001 |
| Gender (m/f) <i>c,d,e,f</i> | 24 / 51 | 18 / 40 | 18 / 40 | 52 / 45 | 10 / 21 | 10 / 21 | 10 / 21 | 10 / 21 | 12.2* | < .007 |
| Race** | | | | | | | | | | |
| Caucasian | 65 | 44 | 44 | 85 | 23 | 23 | 23 | 23 | 8.3* | 0.21 |
| African American | 9 | 14 | 14 | 11 | 8 | 8 | 8 | 8 | | |
| Other | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | | |
| MMSE <i>b,c,d,e,f</i> | 29.3 (1.0) | 28.2 (1.9) | 28.2 (1.9) | 24.0 (3.1) | 16.4 (4.2) | 16.4 (4.2) | 16.4 (4.2) | 16.4 (4.2) | 196.9 | < .001 |
| DRS Total Score | | | | | | | | | | |
| (max = 144) <i>a,b,c,d,e,f</i> | 138.7 (3.8) | 131.3 (7.4) | 131.3 (7.4) | 114.0 (12.1) | 90.7 (19.6) | 90.7 (19.6) | 90.7 (19.6) | 90.7 (19.6) | 178.5 | < .001 |
| CDR Staging, n | | | | | | | | | | |
| 0.0 | 70 | 8 | 8 | 00 | 00 | 00 | 00 | 00 | | |
| 0.5 | 04 | 48 | 48 | 17 | 00 | 00 | 00 | 00 | | |
| 1.0 | 00 | 2 | 2 | 80 | 10 | 10 | 10 | 10 | | |
| 2.0 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | | |
| 3.0 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | | |
| CDR sum of boxes <i>a,b,c,d,e,f</i> | | | | | | | | | | |
| Max = 18, mean (SD) | 0 (.2) | 1.2 (1.3) | 1.2 (1.3) | 5.0 (1.8) | 9.8 (3.4) | 9.8 (3.4) | 9.8 (3.4) | 9.8 (3.4) | 290.7 | < .001 |

Note. Missing data for DRS: n = 1 MCI group, n = 3 moderate AD group. Missing data for CDR rating: n = 1 control group, n = 2 moderate AD group.

MMSE = Mini-Mental State Examination, DRS = Dementia Rating Scale, CDR = Clinical Dementia Rating.

Post-hoc analyses

^a -- controls differ significantly from MCI at p < .01

^b -- controls differ significantly from mild AD at p < .01

^c -- controls differ significantly from moderate AD at p < .01

d – MCI differ significantly from mild AD at $p < .01$

e – MCI differ significantly from moderate AD at $p < .01$

f – mild AD differ significantly from moderate AD at $p < .01$

* Chi-square value.

** Statistical comparison between the Caucasian and African-American groups only.

| Item | MCI N = 58 | | Mild AD N = 97 | | Moderate AD N = 31 | | Total N = 261 | |
|------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| | 80%+ Interrater Agreement | 100% Interrater Agreement | 80%+ Interrater Agreement | 100% Interrater Agreement | 80%+ Interrater Agreement | 100% Interrater Agreement | 80%+ Interrater Agreement | 100% Interrater Agreement |
| | 58/58 100% | 87/97 90% | 91/97 92% | 20/31 66% | 25/31 81% | 237/261 91% | 249/261 95% | |
| | 57/57 100% | 68/95 72% | 81/95 86% | 12/31 39% | 23/31 74% | 207/258 80% | 235/258 91% | |
| | 58/58 100% | 72/97 74% | 83/97 86% | 17/31 55% | 29/31 94% | 219/261 84% | 244/261 93% | |
| | 50/54 93% | 58/91 64% | 74/91 81% | 23/29 79% | 24/29 83% | 194/249 75% | 223/249 90% | |
| | 44/55 80% | 43/89 48% | 61/89 68% | 20/28 71% | 23/28 82% | 165/246 67% | 199/246 80% | |
| | 47/58 81% | 35/97 36% | 67/97 69% | 11/29 38% | 17/29 59% | 142/256 55% | 196/256 76% | |
| | 54/58 93% | 55/93 59% | 71/93 76% | 15/29 52% | 20/29 69% | 193/255 75% | 218/255 85% | |
| | 51/58 88% | 35/97 36% | 58/97 60% | 2/31 6% | 12/31 39% | 141/261 54% | 189/261 72% | |
| | 51/58 90% | 35/97 36% | 67/97 69% | 17/31 55% | 26/31 84% | 153/261 59% | 203/261 78% | |

Table 4
Group Differences in SCIFC Judgment Outcomes across All Physician Raters

| | Controls N = 75 | | | MCIN = 58 | | | Mild ADN = 97 | | | Moderate ADN = 31 | | |
|--|------------------|--------------------|---------------|------------------|--------------------|---------------|------------------|--------------------|------------------|-------------------|--------------------|------------------|
| | Capable | Marginally Capable | Incapable | Capable | Marginally Capable | Incapable | Capable | Marginally Capable | Incapable | Capable | Marginally Capable | Incapable |
| D1 Basic Monetary Skills <i>c,d,e,f</i> | 344 (98%) | 8 | 1 | 281 (99%) | 1 | 0 | 435 (92%) | 27 | 13 | 102 (66%) | 18 | 35 |
| D2 Financial Knowledge <i>b,c,d,e,f</i> | 348 (99%) | 5 | 0 | 280 (99%) | 1 | 0 | 379 (82%) | 72 | 11 | 77 (50%) | 49 | 29 |
| D3 Cash Transactions <i>b,s,d,e,f</i> | 341 (97%) | 12 | 0 | 273 (97%) | 9 | 0 | 333 (70%) | 92 | 50 | 50 (32%) | 49 | 56 |
| D4 Checkbook Mgmt <i>b,g,d,e</i> | 339 (95%) | 15 | 2 | 226 (85%) | 27 | 14 | 144 (32%) | 82 | 220 | 15 (10%) | 14 | 115 |
| D5 Bank Statement Mgmt <i>a,b,c,d,e,f</i> | 333 (93%) | 22 | 2 | 193 (72%) | 65 | 11 | 145 (33%) | 128 | 162 | 6 (4%) | 15 | 116 |
| D6 Financial Judgment <i>b,g,d,e,f</i> | 306 (92%) | 27 | 0 | 234 (83%) | 41 | 7 | 215 (47%) | 126 | 119 | 27 (19%) | 48 | 70 |
| D7 Bill Payment <i>b,s,d,e,f</i> | 326 (98%) | 7 | 0 | 262 (93%) | 16 | 4 | 294 (65%) | 105 | 56 | 32 (22%) | 49 | 64 |
| D8 Knowledge Assets/Estate <i>b,c,d,e,f</i> | 319 (96%) | 13 | 1 | 256 (91%) | 25 | 1 | 296 (62%) | 141 | 38 | 44 (28%) | 71 | 40 |
| Overall Financial Capacity <i>a,b,c,d,e,f</i> | 315 (95%) | 18 (05%) | 0 (0%) | 231 (82%) | 44 (16%) | 7 (2%) | 125 (26%) | 175 (37%) | 176 (37%) | 6 (4%) | 32 (21%) | 117 (75%) |

Note. Cell numbers reflect capacity judgments drawn from all five physician raters. Percentage (%) indicates percentage of capacity judgments rated as capable by group and SCIFC variable across all raters. For overall financial capacity, percentages (%) for all three capacity judgments were included.

Post-hoc analyses

- ^aControl judgment outcome distribution significantly different than MCI judgment outcome distribution at $p < .01$.
- ^bControl judgment outcome distribution significantly different than mild AD at $p < .01$.
- ^cControl judgment outcome distribution significantly different than moderate AD at $p < .01$.
- ^dMCI judgment outcome distribution significantly different than mild AD at $p < .01$.
- ^eMCI judgment outcome distribution significantly different than moderate AD at $p < .01$.
- ^fMild AD judgment outcome distribution significantly different than moderate AD at $p < .01$.