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Awareness of Functional Difficulties in Mild Cognitive Impairment: A Multi-Domain Assessment Approach

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Abstract

OBJECTIVES—Self-report of functional abilities is accorded significant weight in the clinical discrimination of mild cognitive impairment (MCI) from dementia. However, it is unclear whether patients with MCI are fully aware of and provide reliable estimates of their functional status. Prior studies that examined accuracy of self-report of functional abilities in MCI have presented mixed findings. Common limitations of these studies include the use of informant report as the yardstick for ascertaining accuracy of patient self-report, and the failure to account for potential heterogeneity in awareness across functional domains.

DESIGN—Controlled, matched-samples, cross-sectional analysis.

SETTING—University medical and research centers.

PARTICIPANTS—57 persons with amnesic MCI and 68 normal controls.

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MEASUREMENTS—The study examined accuracy of self-report in MCI across five functional domains by comparing patients' report of functioning to their performance on laboratory-based measures of function.

RESULTS—The discrepancy between self-report and objective performance was significantly higher in MCI patients compared to cognitively-normal peers only on financial abilities. Patients with MCI overestimated their abilities on this functional domain. MCI patients also tended to overestimate their driving abilities, though this was not statistically significant.

CONCLUSION—These findings provide evidence that awareness of functional difficulties is not a unitary construct; rather, it varies across functional domains. They also suggest that self-report of functional abilities in MCI may be, on the whole, as accurate as among cognitively-intact older adults. Even so, the self-objective discrepancies noted for both study groups suggest that supplementing self-report information with objective functional assessment might improve the detection of MCI.

Keywords

MCI; functional abilities; awareness; heterogeneity

INTRODUCTION

Persons with amnesic mild cognitive impairment (MCI) are generally believed to be in the transitional stage between normal aging and Alzheimer's disease (AD).¹ Whereas it is currently known that these individuals may experience limitations in the performance of daily activities,²⁻⁴ a question that has not been adequately addressed relates to their level of awareness concerning their functional limitations. This is a significant knowledge gap for several reasons. First, self-report of functional abilities is weighted heavily in clinical decision making regarding MCI,⁵⁻⁶ a practice that presupposes that patients with MCI are generally capable of providing accurate estimates of cognitive and functional abilities. Second, amnesic MCI is considered a prodrome for AD, and several studies have demonstrated that reduced awareness of deficits is present even in the earliest stages of AD.⁷⁻⁸ Thirdly, there is evidence that diminished awareness of functional difficulties predicts progression from MCI to AD.⁹⁻¹⁰ Thus, reduced awareness might serve as a harbinger of impending decline, offering clinicians and family members the opportunity to intervene appropriately. Finally, impaired awareness of difficulties has implications for diverse aspects of patient care such as compliance with treatment,¹¹ personal safety,¹² financial autonomy,¹³ and caregiver burden.¹⁴

Initial studies of awareness of functional difficulties in MCI yielded inconsistent conclusions. Whereas Albert and colleagues¹⁵ and Tabert and colleagues¹⁰ found evidence for diminished awareness in MCI, Farias, Mungas, and Jagust¹⁶ reported that MCI patients have preserved awareness of functional difficulties. Across these studies, unawareness was operationalized as discrepancy between patient and informant reports of functioning, a methodology premised on the assumption that caregivers are objective and accurate, such that observed discrepancies are due to the patients' misrepresentation of their abilities. However, several studies have shown that caregivers' reports are subject to biases due to their personality, mood, relationship to the patient, and perceived burden of care giving.¹⁴⁻¹⁷⁻¹⁸ Indeed, a recent study by our group¹⁹ found that MCI patients' estimations of their own abilities were more congruent with objective test outcome than were their informants' estimates. Furthermore, some functional difficulties may go undetected by both patients and caregivers.²⁰ Another limitation is the failure of these studies to adequately account for the potential domain-specific character of awareness. Whereas studies of awareness of deficits in AD have demonstrated that awareness is a

heterogeneous phenomenon that dissociates across domains, 21–24 these initial MCI studies assessed awareness globally as though it were a unitary construct.

In this study, we addressed these limitations by (i) examining awareness of functional difficulties across several cognitively demanding functional activities, and (ii) comparing participants' self-report of functional status to their actual performance on direct assessment measures of functional ability. We hypothesized that MCI patients would show significantly greater discrepancy between self-report and objective performance relative to healthy controls, especially on financial abilities and driving because of their comparatively greater cognitive complexity. We reasoned that, given the characteristic cognitive deficits seen in MCI, these patients would be more susceptible to misestimating proficiency in everyday functional tasks that rely on higher-order cognitive abilities relative to functional tasks that are less cognitively demanding.

METHODS

Participants

Potential participants were recruited through the community and through clinical presentation to the University of Alabama at Birmingham (UAB) Memory Disorders Clinic for participation in UAB's Alzheimer's Disease Research Center (ADRC). Eligible ADRC participants were subsequently invited to enroll in the ADRC's Measuring Independent Living in the Elderly Study (MILES). The analyses reported here are based on cross-sectional data from this longitudinal study. All participants underwent neurological, neuropsychological, and neuroradiological examinations. Diagnoses were determined in ADRC consensus conferences by neurologists and neuropsychologists using Mayo criteria for MCI. 65 participants were diagnosed with MCI and 68 individuals were determined to be neurocognitively normal controls. The MCI patients were primarily of the amnesic single-domain variety although, compared to controls, some cases also demonstrated lower (but not impaired) performance on nonmemory neurocognitive tests. Written informed consent was obtained from all participants. The UAB Institutional Review Board approved all procedures.

Measures

In the MILES study protocol, all self-report measures were administered prior to the objective assessment measures in order to ensure that participants' self reports were not biased by their perceptions of performance on the objective functional measures.

Objective assessment measures

Financial Capacity Instrument (FCI) 25: The FCI is a standardized psychometric instrument that directly assesses nine domains of financial ability. Only four of the nine domains — Financial Conceptual Knowledge, Cash Transactions, Bank Statement Management, and Bill Payment — were administered to participants because they are the domains that have previously been reported to best discriminate between MCI participants and controls. 26

Observed Tasks of Daily Living (OTDL) 27: This instrument requires participants to perform actions required to execute everyday tasks in three domains — medication use, telephone use, and financial management. All OTDL tasks make use of actual everyday objects (e.g., medical history forms, telephone, and currency) using standardized administration procedures. Only a subset of items from the medication use and telephone use domains was used in the present analyses. Performance is scored using a correct(0)-incorrect(1) format.

Timed Instrumental Activities of Daily Living (TIADL) 28: The TIADL evaluates speed and accuracy of task completion within five domains of everyday functioning — telephone use, nutrition evaluation, financial abilities, grocery shopping, and medication management. Tasks from the financial abilities domain were not used in these analyses. Like the OTDL, the TIADL also makes use of actual everyday objects. During task execution, examiners assign participants error codes reflecting whether the task was: (1) completed correctly within the time limit with no errors, (2) completed within the time limit with minor errors, or (3) not completed within the time limit or completed with major errors. Because hardly any participant received error scores of 3, error categories were recoded as follows: (0) task was completed correctly within the time limit with no errors, or (1) task was completed with some error or was not completed within the time limit. This rescoring procedure, which provides a safeguard against sparseness of data, was successfully adopted in a prior report.

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On-Road Driving Evaluation: Each participant drove an instrumented vehicle with dual controls under the supervision and evaluation of a Certified Driving Rehabilitation Specialist (CDRS) who was also a licensed occupational therapist (OTR/L). The CDRS was blind to participants' group status (i.e., MCI or cognitively normal). At multiple pre-established points during the drive, the CDRS coded each participant's performance on specific driving skills using a 5-point Likert scale: 1 = CDRS took control of car and ended road test; 2 = skill performed in an unsafe manner and/or CDRS verbally intervened; 3 = skill performed in an unsatisfactory manner and/or would have been unsafe if another vehicle was approaching; 4 = skill performed in a less than optimal manner; and 5 = skill performed in an optimal manner. For this study, the specific driving skills analyzed include parking, lane control, turning, and exiting highways and interstates (see Appendix). These skills were selected *a priori* on the basis of their importance to the proper and safe operation of a motor vehicle. Because the vast majority of participants received ratings of either 5 or 4, we recoded ratings on the driving variables as follows: 0 (optimal execution of skill), or 1 (less than optimal execution of skill). This approach was satisfactorily adopted in an earlier study.

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Self-report measures

Current Financial Capacity Form (CFCF) 25: The CFCF elicits self reports that parallel the items of the FCI. Specifically, it elicits participants' judgments about their current level of functioning across the same financial tasks evaluated on the FCI. This study only included CFCF domain-level judgments corresponding to the four FCI domains evaluated. Response categories are (0) cannot do, (1) can do but need help, or (2) can do without help. Because only one person rated himself as "cannot do" on any CFCF domain, response categories were recoded as (0) no difficulty, or (1) some difficulty.

MILES Self-Report Questionnaire (see Appendix): This measure was developed specifically for this study. It inquires into the amount of difficulty experienced in performing various tasks required for independent living in the areas of driving, medication/health care management, grocery shopping, and telephone use. The items on this questionnaire were developed to closely parallel the functional skills assessed on the OTDL, the TIADL, and the on-road driving evaluation. Responses were made on a 4-point Likert scale: 1 = not difficult; 2 = a little difficult; 3 = moderately difficult; and 4 = very difficult. The vast majority of participants rated themselves as either having no difficulty or a little difficulty. Therefore, these ratings were recoded as (0) no difficulty or (1) some difficulty. Within the sample used in this study, this questionnaire had an internal consistency reliability of 0.84 and a test-retest reliability of 0.72 (it was readministered, by telephone, to participants one month after the study visit).

Statistical Analysis

Data reduction—Within each functional domain a variety of abilities were objectively assessed, resulting in numerous indices of behavior that were not necessarily independent and therefore did not warrant individual examination. For example, the MILES Self-Report Questionnaire item G2 (see Appendix) that asks How difficult is it for you to find and read the ingredients on cans of food? is related to three distinct tasks on the TIADL in which participants are asked to find and read the ingredients on a can of food. To limit multiplicity, we implemented a 2-step data reduction.

First, participants' scores on all objective test items that map onto a single MILES Self-Report Questionnaire item were averaged to form a composite variable. Second, because the purpose of our analyses was to examine domain specificity in awareness of functional difficulties, we formed composites for each functional domain by averaging participants' scores on the composite variables derived from the first data reduction process. This 2-step process resulted in 5 domain-level objective measure composites—driving, financial abilities, medication management, grocery shopping, and telephone use. To illustrate, participants' scores on the three TIADL “find and read the ingredients” tasks mentioned above were averaged to form a composite measure of “ability to locate ingredients on cans of food.” The MILES Self-Report Questionnaire item G1 that asks How difficult is it for you to find the items you are looking for on the shelves when you go grocery shopping? is related to just one TIADL task wherein participants are requested to find two food items in a shelf full of distractor food items. As a result, no computation of a composite was necessary. To compute the composite measure for the *grocery shopping* domain then, participants scores on (i) the composite measure of “ability to locate ingredients on cans of food” and (ii) the TIADL “find two food items” task were averaged.

The second step of the data reduction procedure described above was also performed for ratings on the MILES Self-Report Questionnaire and on the CFCF in order to obtain the self-report analogs of the objective measure composites. For example, participants' self-ratings on items M1 through M5 on the MILES Self-Report Questionnaire (see Appendix) were averaged to obtain a composite self-report measure of medication management abilities. With the exception of FCI composite variable, which was on an interval scale, all other composite variables (self-report and objective) were dichotomous: (0) experiences no difficulty, or (1) experiences some difficulty. Psychometric cut scores were used to place the FCI composite variable on the same metric as all other composite variables. An *experiences no difficulty* (0) outcome was defined as a score better than 1.5 SD below the control group mean on the FCI composite variable whereas an *experiences some difficulty* (1) outcome was defined as a score at or worse than 1.5 SD below the control group mean on the FCI composite variable. This psychometric approach to assigning capacity outcomes has been employed in prior studies 4, 19, 25.

Demographic and clinical variables—Group differences in age, education, Dementia Rating Scale-2 (DRS-2) total scores, and depressive symptoms were analyzed with independent samples t-tests. Differences in gender and racial distributions were examined using χ^2 tests.

Awareness of functional difficulties across domains—To examine accuracy of self-report of functional abilities, we calculated discrepancy scores defined as “objective performance outcome minus self-rating.” These scores ranged from -1 to +1. They were 0 when a participant accurately estimated his/her functional ability relative to his/her objective test outcome; +1 when he/she overestimated his/her ability relative to his/her objective outcome; and -1 when he/she underestimated his/her ability relative to his/her objective

outcome. Group differences on the discrepancy scores were tested using Cochran—Mantel—Haenszel general association analyses. 31 Preliminary χ^2 analyses examined group differences on each of the five objective measure composites. All analyses were performed using SAS 9.1 (SAS Institute Inc., Cary, NC), and only test findings that met an alpha of .05 (2-tailed) threshold were considered significant.

RESULTS

Demographic and clinical variables

Table 1 shows the result of group comparisons on demographic and clinical variables. As expected by virtue of diagnosis, patients with MCI differed significantly from the control group on DRS-2 Total scores. The two groups did not differ from each other in age, years of education, depressive symptoms, or in gender or racial distributions.

Difficulty exhibited on objective measures of functional status

The preliminary examination of group differences in level of difficulty exhibited on performance-based measures revealed that, compared to control participants, MCI patients were significantly more likely to evince “some difficulty” on the functional domains of financial management, driving, and telephone use. For example, 39% of MCI patients demonstrated some difficulty on the financial management domain, as opposed to 6% of controls. There were no significant group differences on the other functional domains. However, proportionately more MCI patients exhibited “some difficulty” on these domains relative to controls. These results are displayed in Table 2.

Awareness of functional difficulties across domains

Table 3 presents the results from the Cochran—Mantel—Haenszel analyses. The discrepancy between self-report and objective test outcome was significantly greater for patients with MCI compared to controls only on the financial abilities domain. On this domain, 6.3% of controls versus 7.1% of MCI patients underestimated their abilities; 89.1% of controls versus 64.3% of MCI patients accurately estimated their abilities; and 4.7% of controls versus 28.6% of MCI patients overestimated their abilities.

DISCUSSION

Investigating the accuracy of self-report of functional abilities is an important clinical and scientific undertaking, as the degree of restriction in everyday functioning, usually as reported by the patient, is vital to differentiating MCI from normal aging and AD. In this study, we examined accuracy of self-report of functional abilities in MCI by comparing patients' self-report of functioning to their performance on objective measures across multiple functional domains. This represents a novel approach, as prior investigations of awareness of functional difficulties in MCI have only compared patients' self-report to informant report, and have examined awareness of difficulties as though it were a unitary, all-or-nothing phenomenon (see ref. 19 for an exception).

As a logical precondition for examining awareness of difficulties, we examined group differences on objective measures of function. These analyses revealed that MCI patients were significantly more likely than controls to exhibit some difficulty in the performance of tasks assessing financial abilities, driving, and telephone use. With regard to awareness of difficulties, we found that, relative to control participants, patients with MCI demonstrated poorer accuracy in their estimation of ability only on the financial abilities domain. Specifically, patients with MCI tended to overestimate their abilities on this domain. This finding immediately highlights two important points. First, it suggests that the degree of

concordance between self-report of functional abilities and objective performance may be generally comparable across persons with MCI and healthy older adults. Therefore, reliance on self-report in this patient population may, overall, not be considerably more problematic than among healthy older adults. Indeed, some studies have found that self-report of cognitive function is related to objective cognitive function and future cognitive decline among MCI patients. 32, 33 Secondly, this finding supports the notion that awareness of functional difficulties is a heterogeneous phenomenon that is preserved in some domains and diminished in others. 24, 34, 35 This finding of heterogeneity in awareness is consistent with findings from an earlier study by our group, 19 albeit that study only focused on financial abilities whereas the present study extends it by investigating awareness across multiple functional domains. We originally expected that MCI patients would demonstrate significantly greater self-objective discrepancy, relative to control participants, on both the financial and driving domains. Although MCI patients tended to demonstrate greater overestimation of driving abilities relative to healthy older adults, this difference did not attain the threshold for statistical significance.

Financial abilities and driving share two important commonalities — they are cognitively intensive functional skills and have greater bearing on an individual's personal autonomy relative to the other functional domains assessed. Our findings, therefore, suggest that when patients with MCI are asked to rate their present ability on relatively complex functional abilities that have implications for their personal autonomy, they may tend to erroneously (and/or defensively) reference their prior ability levels as veritable indices of their present ability, resulting in an overestimation of present abilities for some individuals. On the other hand, if they are asked to rate their present ability on functional abilities that are comparatively less crucial to autonomy, they may become less guarded, leading to an underestimation of present abilities for some individuals as was the case on the grocery shopping domain. There likely is within-group variability in sensitivity to difficulties or declines in these cognitively demanding activities that corresponds, in part, to severity of cognitive difficulties. And, a direct examination of the presence and extent of response bias in financial management and driving relative to other functional domains would have strengthened our tentative conclusions. Even so, our interpretation of the finding is supported by evidence from a prior study by our group. 19 In that study, we found that patients with MCI exhibited overestimation of abilities on financial capacity domains of checkbook management, bank statement management, and bill payment, but not on any other financial domains. Relative to the other financial domains tested, these three domains are arguably more complex and perhaps more relevant to an older adult's fiscal autonomy. Overestimation of financial abilities is also found in AD, although of a more pervasive character. 20

The present study's finding raises a number of important considerations. Financial capacity is a higher order functional ability that is critical to personal autonomy and independent functioning in the community. 25 Accordingly, reduced awareness of impairments in financial capacity can pose enormous challenges to family members and health care professionals who work with older adults. The older adult who is experiencing difficulties with managing his/her finances but either is not fully aware of this or is unwilling to acknowledge the difficulties might fail to request proper assistance or accept such assistance when offered. This makes the individual susceptible to unintentional self-impoverishment, overt (e.g., telephone scams) and covert (e.g., undue influence by third parties) financial exploitation, and in some cases loss of financial autonomy. 13, 36 Similarly, the older adult who is beginning to encounter difficulties with driving and either does not recognize this or is unwilling to acknowledge the difficulties and modify driving accordingly poses a safety risk to both self and the community. In addition, repeated traffic infractions could precipitate loss of driving privileges. 12, 37-40

In the diagnostic process for MCI, patients' report of cognitive and functional abilities is accorded substantial weight. 41 The finding that some patients' self-report of functioning is at variance with actual abilities, at least on the financial abilities domain, underscores the need to supplement self-report data with objective functional testing to enhance identification of older adults who have begun to experience more functional decline than is accounted for by age. Timely identification of MCI is considered a critical clinical goal because certain pharmacologic interventions for AD may be maximally effective when administered in the earliest stages of the disease. 42 Given the time-limited nature of most physician office visits, administration of objective functional assessment instruments may be performed by a trained technician, occupational therapist, or other allied health professional outside of the office visit proper. The attending clinician would then use the information, in conjunction with other pertinent data, to determine the implications of any observed restriction in function. This procedure is akin to routines in place for laboratory panels and other diagnostic tests. The training necessary to administer such tests, and the time required to complete the assessment, would naturally vary across assessment instruments and technician background but should not be overly burdensome, requiring perhaps a one-day training workshop for allied health professionals, and a one-hour functional assessment in many cases. Relatedly, the reported association between unawareness of difficulties and progression to AD among persons with MCI 10 suggests that the subset of MCI patients who demonstrate overestimation of financial abilities (28.6% of the MCI group in this study) may be at greater risk of progression to AD over time. This empirical question can be addressed more definitively with longitudinal data from this ongoing study.

The primary conclusion from this study is that there is heterogeneity in awareness of functional difficulties among persons with MCI. Specifically, MCI patients are not as accurate in their estimations of financial abilities as they are in their estimations of driving, medication management, telephone use, and grocery shopping abilities. The estimation errors made by MCI patients on the financial abilities domain predominantly involved overestimation of abilities. Such errors raise concerns that some persons with MCI may be at risk for various forms of financial exploitation. For this group of MCI patients, increased vigilance of their financial transactions and affairs by family members appears warranted. In addition, geriatric healthcare professionals are well-positioned to educate family members about the possibility for misestimation of functional abilities among persons with MCI, as a consequence of the disease process. This knowledge might help modify the attributions family members make regarding patients' behaviors and empower them to cope adaptively with the caregiving role. 18· 43· 44

This study's findings should be interpreted with some caveats in mind. Although self-objective discrepancies were significantly higher among MCI patients relative to healthy older adults on the financial abilities domain, the discordance between self-rating and objective test outcome was generally similar for both study groups across all functional domains assessed. This suggests that misestimation of abilities is not specific to MCI but may represent a general phenomenon that worsens with putative neurodegeneration. Alternatively, this poor self-objective correspondence may also be indicative of the weak association that has been documented between self-report measures and performance-based tests. 18· 45-47 This phenomenon has been ascribed to potential mismatch between the skills assessed with the performance measures and the questions asked on questionnaire instruments. 18· 47· 48 In the present study, the report-based measures were developed to closely parallel the functional skills assessed on the objective tests, thereby strengthening isomorphism between them. 48 Nonetheless, the finding that concordance between self-report and objective outcome was highest between the FCI and the CFCF — instruments founded on a conceptual model of financial capacity — raises the possibility that the MILES Self-Report Questionnaire items may not have sufficiently paralleled the skills assessed on

the OTDL, TIADL, and on-road driving evaluation, such that the study's findings could be alternatively explained by method variance as by domain-specificity of effects. Despite the foregoing caveats, compared to prior studies of awareness of functional difficulties in MCI, the present study is unique in assessing awareness of difficulties across multiple functional domains and providing evidence for heterogeneity in this clinical phenomenon.

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APPENDIX MILES SELF-REPORT QUESTIONNAIRE*

The following questions will be asking about some activities most older adults do in their daily life. Some questions ask about your driving, some ask about your use of health care and ability to manage your medications, others ask about your ability to do grocery shopping, and others ask about your ability to use the telephone. Please feel free to ask me to clarify any question that may not be clear to you.

Driving

- D1.** How difficult is it for you to stay within your lane while driving?
- D2.** How difficult is it for you to drive safely around a sharp curve to the right?
- D3.** How difficult is it for you to drive safely around a sharp curve to the left?
- D4.** How difficult is it for you to merge onto a less busy road (e.g. a street) from a busier road (e.g. a highway or interstate)?
- D5.** How difficult is it for you to drive into and back out of designated parking slots?

Medication/Health care management

- M1.** How difficult is it for you to find and read the directions on medicine containers?
- M2.** How difficult is it for you to determine how many days a refill of your medication will last?
- M3.** How difficult is it for you to identify the side effects of your medications?
- M4.** How difficult is it for you to figure out the right dosage of your medications and how often to take them?
- M5.** How difficult is it for you to properly fill out medical history forms when you go to see the doctor?

Grocery shopping

- G1.** How difficult is it for you to find the items you are looking for on the shelves when you go grocery shopping?
- G2.** How difficult is it for you to find and read the ingredients on cans of food?

Telephone use

T1. How difficult is it for you to find the phone number of people in the white pages of the phone book?

T2. How difficult is it for you to locate the phone number of specific services in the yellow pages of the phone book?

T3. How difficult is it for you to use rate charts or tables to find the rates for long distance calls made at various times of the day or certain days of the week?

* Participants were given a large-print card that contained the following response options:

- Not difficult.....1
- A little difficult.....2
- Moderately difficult.....3
- Very difficult.....4

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Table 1

Demographic and clinical characteristics of study participants

Variable	Controls, n = 68	MCI, n = 57	p
Age	67.92 (7.42)	70.13 (8.15)	.113
Gender, n (%)			
Female	42 (61.76)	27 (47.37)	.107
Male	26 (38.24)	30 (52.63)	
Race, n (%)			
African American	13 (19.12)	10 (17.54)	.821
Caucasian	55 (80.88)	47 (82.46)	
Education	15.15 (2.46)	15.38 (3.01)	.643
DRS-2 Total Score* ⁴⁹	139.45 (3.88)	132.98 (7.88)	.001
GDS † ⁵⁰	4.00 (5.16)	4.53 (4.39)	.545

Except for gender and race, values are mean (SD).

MCI = mild cognitive impairment; DRS-2 = Dementia Rating Scale, 2nd edition; GDS = Geriatric Depression Scale.

* DRS-2 Total Score range = 0 – 144.

† GDS range = 0 – 30.

Table 2

Tests of group differences in difficulty experienced on objective measures of functional ability

Functional domain	No difficulty	Some difficulty	p
Driving			
Control	49.2	50.8	.032
MCI	29.2	70.8	
Financial Management			
Control	93.8	6.2	.001
MCI	60.7	39.3	
Medication Management			
Control	20.6	79.4	.338
MCI	14.0	86.0	
Grocery Shopping			
Control	76.5	23.5	.155
MCI	64.9	35.1	
Telephone Use			
Control	32.4	67.6	.008
MCI	12.3	87.7	

Values are row percentages, and represent the proportion of persons demonstrating *no difficulty* versus *some difficulty* on objective functional testing within each group.

MCI = mild cognitive impairment.

Table 3

Tests of group differences in the distribution of discrepancy scores across functional domains*

Functional domain	-1	0	1	p
Driving				
Control	13.8	56.9	29.2	.143
MCI	6.3	47.9	45.8	
Financial Management				
Control	6.3	89.1	4.7	.001
MCI	7.1	64.3	28.6	
Medication Management				
Control	4.4	30.9	64.7	.309
MCI	5.3	43.9	50.9	
Grocery Shopping				
Control	14.7	61.8	23.5	.378
MCI	24.6	52.6	22.8	
Telephone Use				
Control	7.4	48.5	44.1	.289
MCI	1.8	56.1	42.1	

Values are row percentages, and represent the proportion of persons whose self-rating were worse than objective test outcome (-1), same as objective test outcome (0), or better than objective test outcome (1) within each group.

MCI = mild cognitive impairment.

* Discrepancy scores were computed as objective performance outcome minus self-rating. "-1" = self-rating worse than objective test outcome; "0" = self-rating same as objective test outcome; "1" = self-rating better than objective test outcome.